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Trends in HIV-related consultation in Dutch general practice

C C ROS MSc, J J KERSENS PHD, M FOETS PHD AND L PETERS MA

NIVEL (Netherlands Institute of Primary Health Care), PO Box 1568, 3500 BN Utrecht, The Netherlands

SUMMARY:

New medicine against AIDS and a possible changing attitude towards AIDS will affect the role of the general practitioner (GP). We aim to explore and assess the changing role of the GP in preventing and detecting AIDS, which will be done by providing insight into the changing numbers and content of HIV-related consultations in the general practice.

Since 1988 a representative sample of 63 Dutch GPs have participated in a network. They recorded all face-to-face consultations with non HIV-infected patients in which the subject of AIDS was brought up. Time trend analysis is used to investigate variations over time in the number and content of the consultations, GPs' actions and patients' characteristics. The influence of a rural or urban setting and the characteristics of the patients who are involved are also taken into account.

Until 1994 a significant increase was found in the number of consultations. In highly urban areas the number of consultations is higher and still growing, whereas physicians in rural areas see fewer patients every year. The most important topic of conversation was the request for an HIV test (74%). This figure grew over the years, as did the number of tests performed. GPs became less passive and restrictive in advising tests. The group of patients has also changed, e.g. patients do not mostly belong to traditional risk groups anymore, and are significantly younger.

AIDS seems to have become more familiar to patients and doctors. A lot of general information is available from different sources. Because of this change in attitude and knowledge of patients, the GPs' role as it relates to AIDS is becoming more specific in tracing infected patients and giving customized information to individuals. Patients visit their physicians less often because of concerns about AIDS, but the GP continues to fulfil a very important role in the prevention and detection of AIDS.

INTRODUCTION

Although adequate medication for acquired immunodeficiency syndrome (AIDS) detected early no longer seems beyond the reach of modern medical science, the prevention of human immunodeficiency virus (HIV) infection is still the most effective way of fighting AIDS. Not only because the long-term effects of combined HIV protease inhibition are still unpredictable¹ but also because not all patients can tolerate the vast amounts of medication needed². In countries like the UK and The Netherlands where the GP is the first physician contacted in cases of health-related problems, the GP is regarded as important in both the prevention and detection of HIV infection. He is expected to educate, inform and if necessary test his patients. Several reports have been written about the role of primary health care and the GP in AIDS prevention³⁻⁶. Information on GPs' involvement with AIDS is often focused on the prevalence of HIV/AIDS in general practice and their treatment in relation to the GPs' workload⁷. Less research has been done on the GPs' role in prevention, i.e. in informing, educating, advising and reassuring patients^{8,9}. Van Bergen, however, concludes that GPs play an important role in prevention¹⁰. The development of new medicines and a possible change in attitude towards AIDS seem to be creating the setting for a new role for the GP. According to Wigersma¹¹, GPs will become more important in testing, counselling and monitoring patients. The aim of this article is to investigate this assumption about the changing role of GPs. We focus on trends during a 9-year period (1988- 1996) on the following aspects: the number and characteristics of patients who visit their physicians with AIDS-related questions, the issues that people bring up during these consultations and GPs' action in AIDS-related consultations. We expect the role of GPs will vary in areas with differing levels of prevalence of AIDS. AIDS is a bigger issue in highly urban areas and for this reason a distinction is made between urban and rural settings.

METHOD

Data

To investigate the assumption about the changing role of the GP, we used data from the Dutch Sentinel Practice Network¹². From 1970, a number of Dutch GPs have participated in this network (63 doctors in 47 general practices). The composition of the network allows for both a geographical spread and an even distribution over regions with varying degrees of urbanization^{13,14}. The Practice Network covers approximately 1% of the Dutch population. Participating GPs collect data on a number of topics^{15,16}. One of these topics has to do with AIDS. From 1988 onwards, they recorded all face-to-face consultations with patients of unknown HIV status in which the subject of AIDS was mentioned. Table 1 presents data on the number of consultations related to the number of patients in a rural, a moderately urban and an urban area. After each AIDS-related consultation the GP filled in a questionnaire on patient characteristics (age, sex, risk group), the topics discussed (HIV test, worries about sexual behaviour, general questions), and action undertaken (request HIV test, inform patient, give advice, examine physically, or refer to specialist). If an arrangement for HIV testing was made, the result of the test was also recorded. All data were recorded in precoded categories. Infected patients were excluded from the registration.

[TABLE 1]

Statistical analysis

Changes over time were analysed in 2 different ways. First, percentages were calculated in 3 distinct periods (the years from 1988 through 1990, the years from 1991 through 1993, and the years from 1994 through 1996) of patient characteristics, the subjects discussed during consultation as well as the action taken by the GP. Trends in the total number of consultations were established by means of multiple linear regression analyses. Trend analysis requires relatively large amounts of data. Accordingly we aggregated the

number of HIV related consultations per quarter. The analysis was prepared in the following way. In each quarter the practice population was known, as was the number of HIV-related consultations. As practices are sometimes taken over by new GPs (or are affected by long periods of GPs' illness), there are sometimes gaps in the records. The figures were corrected for missing periods (7.5%). The list sizes and the number of HIV-related consultations for GPs with the same degree of urbanization (rural, moderately urban, highly urban) were aggregated for each quarter. There were 35 quarters in the period 1 April 1988- 1 January 1997, each with 3 categories of urbanization, totalling a number of 105 cases for the analysis. The number of HIV-related consultations, test requests and test performances per 10,000 patients are the response variables in the trend analysis; the degree of urbanization (RURAL, H-URBAN) and the time variable (TIME) are the explanatory variables. RURAL and H-URBAN are both 'dummy' variables, the moderately urban area constitutes the reference category. For computational reasons, the time variable is centred around the 18th quarter. In order to model a curvilinear trend, a squared time variable (TIME²) was used and to establish different trends in different urbanization categories interaction variables (TIME*RURAL, TIME*H-URBAN) were also taken into account.

RESULTS

We investigate the changing role of GPs by focusing on trends in the number of AIDS-related consultations, characteristics of patients, the subjects discussed and the actions undertaken by the GPs. Table 2 shows the results. The relative changes are tested by means of the χ^2 test. The GPs in the network recorded AIDS-related consultations during the last 3 quarters of 1988 and the following 8 years. During the entire period, the number of consultations has increased. The number of consultations involving men fell, but the changes were not statistically significant. The mean age of patients shifted gradually. GPs were asked to classify patients in 15 mutual exclusive categories, such as 'having homosexual contacts', 'having risky heterosexual contacts', 'being intravenous drug abusers' or 'having a high-risk job'. We combined these categories into the 3 mentioned in Table 2. The magnitude of the so-called 'traditional' risk group, that is patients with homosexual or bisexual contacts as well as intravenous drug abusers, slowly decreased. We observed a change in the GPs' estimations of patients' potential risk for HIV infection. The contribution of the traditional risk group decreased. The relative numbers of patients who visited prostitutes or had many different heterosexual partners remained the same throughout the entire registration period. No differences were found in the percentage of patients with sexual encounters abroad or with foreigners, patients who were professionally at risk or recipients of blood products. This percentage was fairly constant. The group of patients without any particular risk for HIV infection became larger.

[TABLE 2]

The content of consultations

The most important topic of conversation was the request for a HIV-test. The number of requests increased during the entire period. Most patients turned out to be seronegative. During the 9-year period 16 patients were diagnosed HIV positive. In a decreasing number of consultations, patients worried about physical complaints. They also expressed fewer worries about casual sexual contacts and requested less general information about AIDS.

Actions of GPs

During most consultations, general information was provided. This number increased during the period recorded. GPs also gave advice on behaviour, such as limiting the number of sexual partners or the use of condoms. Another important action taken by GPs was arranging for an HIV antibody test. In a rather small number of consultations, the GP carried

out a physical examination. During the last few years this physical examination has become significantly less important.

Trend analysis: number of consultations, test requests and test arrangements

We used trend analysis to investigate changes in number of consultations and tests requested in detail. The results of trend analysis of the number of quarterly HIV-related consultations, test requests and test arrangements are presented in Table 3. Part of the information of Table 3 is displayed graphically in Figure 1. The upper line reflects the mean quarterly number of HIV-related consultations per 10,000 patients. The mean number of test requests (interrupted line) grew until 1995. After that, test requests fell slightly. The number of test requests as a proportion of the total number of HIV-related consultations was lower at the beginning of the registration period than at the end. In fact, the growing number of consultations was largely caused by the increasing number of test requests. The mean number of tests performed (dotted line) also increased, even more than the number of test requests. In the last quarter of 1995, the number of tests performed overtook the number of test requests. A growing number of consultations did result in a test, although not always at the patient's request. The mean number of consultations (the line labelled 'total') is increasing. In 1994 the number ceased to grow and a slight decline could be perceived subsequently.

[FIGURE 1]

[TABLE 3]

Differences between rural, moderately urban and highly urban areas

Figure 2 shows the separate trend lines of the number of consultations for highly urban, moderately urban and rural areas. Throughout the registration period, the lowest number of consultations was observed in rural areas. Highly urban areas showed the highest numbers and moderately urban areas had intermediate numbers. These differences (H-URBAN and RURAL) are statistically significant (Table 3). In rural areas the initial growth was rather gentle. The maximum was reached in 1992. In highly urban areas the initial growth was much stronger and continued until the end of the registration period in 1996. Moderately urban areas were again positioned in between. These differences were also statistically significant (TIME, TIME*H-URBAN and TIME*RURAL in Table 3). Table 3 also shows a close correspondence of test requests and tests performed with the total number of HIV-related consultations. In highly urban areas, the numbers were higher (H-URBAN) from the start of recording and they increased (H-URBAN*TIME) than in the rural areas (RURAL and RURAL*TIME). Moderately urban areas were again in between. In terms of the curvilinear element (TIME²) in Table 3, the fall in tests done (- 0.0031) and test requests (- 0.0033) was less than that of the total number of HIV-related consultations (- 0.0046).

[FIGURE 2]

DISCUSSION

Before turning to a few of our study's important conclusions, the restrictions of the method have to be recognized. Our Sentinel Practice Network does not give a complete account of all the HIV-related consultations involving patients with unknown HIV status. It is obviously restricted to patients who visited their GP with concerns about AIDS or those cases where the GPs themselves brought up the subject. Comparable data from other agencies, for instance from local government public health departments, were not available. This makes it difficult to acquire complete knowledge of concerns about AIDS in the general population as well as making it difficult to compare the activities of GPs in this respect with other

health professionals. Taking these restrictions into account, we can focus on the main conclusions. The results of 9 years of recording HIV-related consultations by Dutch GPs led to 2 main conclusions. The first is: AIDS and HIV have become more familiar in the sense that they can no longer be considered as a specific 'gay plague' or dangerous only to intravenous drug abusers. This shift in attitude towards AIDS will influence the role of the GP in preventing AIDS. The second conclusion follows from the first one: the role of the GP has changed. A few years ago, he mainly reassured healthy people with worries, now he plays a more active role in the arrangements for HIV antibody tests. There are a number of reasons why we conclude that AIDS and HIV infection have become more familiar. The number of consultations has grown rapidly. In the last few years, however, especially in rural and moderately urban areas, the number of AIDS-related consultations has declined. In highly urban areas, the initial growth was much stronger and continued until the end of the recording period. In highly urban areas the maximum also seems to have been reached. Reviewing the reasons for consultation, patients seem to have more general knowledge about AIDS, because they hardly ask for general information anymore. Patients who express their concerns are younger and the group is more diverse: more women, fewer people 'traditionally at risk' and more without any particular risk. An explanation might be that traditional patients visit other health professionals more often, such as local clinics for sexually contagious diseases and agencies for homosexual health care. More diversity among the worriers can be attributed to the growing attention paid to AIDS in society as a whole. Everyone is confronted by AIDS in prevention campaigns, the mass media and special programmes in schools. With the changing public attitude towards AIDS, the role of the GP is changing too. Compared to 10 years ago, GPs are now more active. They take the initiative more often in requesting tests, referring patients and giving advice, perhaps due to their knowledge of AIDS. They are aware of the value of the early detection of HIV and a less restrictive testing policy is applied. However, other research shows that in daily practice physicians still find it difficult to talk about AIDS and sexual risk behaviour¹⁷, or they forget to mention HIV testing when seeing a patient at risk¹⁸. Doctors themselves rate their own functioning as rather positive¹⁹. Arranging for HIV testing plays a prominent role in HIV-related consultations. In HIV testing we can recognize 2 functions of GPs: reassuring and informing their patients. The need for reassurance is recorded as the most important reason for performing a test, and in discussing the possibility of testing (which is probably an easier subject to bring up than one's sex life) patients can ask questions, while GPs can seize the opportunity to give information or advice. A growing number of consultations did end in a test. As mentioned before, in rural areas the number of consultations is diminishing rapidly, so GPs working in these areas probably lack experience in detecting HIV and should be especially alert. The Vancouver World AIDS Congress in 1996 disseminated optimistic results on the effects of combination therapy and the use of a protease inhibition. One might suppose that information about early detection would have led to a growing number of HIV-related consultations. But our data do not show a sudden increase in visits to GPs. On the contrary, the number of consultations in the last 1996 quarters connected seamlessly to the quarters in preceding years. So last year's publicity about the new medication did not have an immediate impact on GPs in The Netherlands.

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TABLES AND FIGURES

Table 1. HIV-related consultations (N) and population (P) per urbanization degree for the period 1988–1997

Year	Rural area			Moderately urban			Urban area		
	N	P	C/P	N	P	C/P	N	P	C/P
1988*	13	22177	6,0	69	90659	7,6	56	33684	6,7
1989	15	22177	6,8	99	90659	10,9	77	33684	22,9
1990	7	22727	3,1	124	85482	14,5	79	32467	24,3
1991	7	22727	3,1	122	92084	13,2	81	30421	26,6
1992	13	22085	5,9	160	91873	17,4	105	34418	30,5
1993	21	22085	9,5	150	97355	15,4	124	34418	36,0
1994	22	24304	9,0	206	96361	21,4	149	36180	41,2
1995	11	24304	4,5	143	97458	14,7	134	36180	37,0
1996	16	25883	6,2	138	99466	13,9	120	34923	34,4
1997	13	22405	5,8	126	86322	14,6	149	36432	40,9

*The registration started on 1 April 1988, so the number (N) has been multiplied by 4/3
C/P is the number of consultations per 10,000 patients

Table 2. Basic characteristics of HIV-related consultations in 3 periods (n=2229)

	1988–90 (n=505)*	1991–93 (n=783)	1994–96 (n=941)	P value
Patient characteristic				
% male	52.5	50.8	49.8	n.s.
Age (mean)	34.8 year	32.3 year	30.8 year	<0.001
Risk group				
% homo/bisexual/intravenous drug user	18.4	14.0	9.1	<0.001
% hetero/prostitutes/partner at risk	45.5	41.8	46.3	
% other risk behaviour	8.3	9.8	8.7	
% not at risk	27.7	34.4	35.9	
Subject discussed				
% request HIV test	61.4	72.7	81.8	<0.001
% worries physical complaints	33.9	26.8	18.6	<0.001
% worries regular contacts	23.0	25.4	27.4	n.s.
% worries casual contacts	28.5	23.6	21.3	<0.01
% general informative	15.2	13.0	8.9	<0.001
Action of general practitioner				
% give information	79.6	79.9	83.3	n.s.
% arrangement HIV test	53.5	65.5	77.3	<0.001
% give behavioural advice	29.7	28.6	25.7	n.s.
% physical examination	18.6	10.1	6.9	<0.001
% with referral	4.0	3.6	2.4	n.s.
% other	5.9	6.4	3.7	<0.05

*The number of consultations in this period is based on 11 quarters because the registration started on 1 April 1988
All statistical tests are χ^2 with 2df, except for risk group (is χ^2 with 6df) and age (is F-test df1=2, df2=2226)

Table 3. Multiple regression analyses of HIV-related consultations, number of test requests and regression coefficients (B) and standard error (SEB) for the number of tests performed per 10,000 patients during 1 April 1988–1 January 1997

	Consultations		Test requests		Test arrangements	
	B	(SEB)	B	(SEB)	B	(SEB)
CONSTANT	3.58	(0.194)	2.70	(0.178)	2.49	(0.178)
H-URBAN (dummy)	4.67***	(0.231)	3.36***	(0.211)	3.17***	(0.203)
RURAL (dummy)	-1.45***	(0.231)	-0.96***	(0.211)	-0.75***	(0.203)
TIME	0.05***	(0.016)	0.06***	(0.015)	0.06***	(0.014)
H-URBAN*TIME	0.12***	(0.023)	0.11***	(0.021)	0.15***	(0.020)
RURAL*TIME	-0.05*	(0.023)	-0.10**	(0.021)	-0.06**	(0.020)
TIME ²	-0.005***	(0.001)	-0.003***	(0.001)	-0.003***	(0.001)

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$

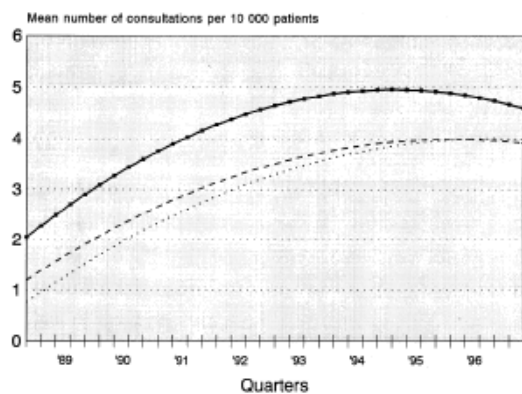


Figure 1. Trendlines of the number of HIV-related consultations, the number of test requests and the number of tests performed per 10,000 patients in the period April 1988–December 1996
 —■—Total - - -Tests requests . . .Tests performed

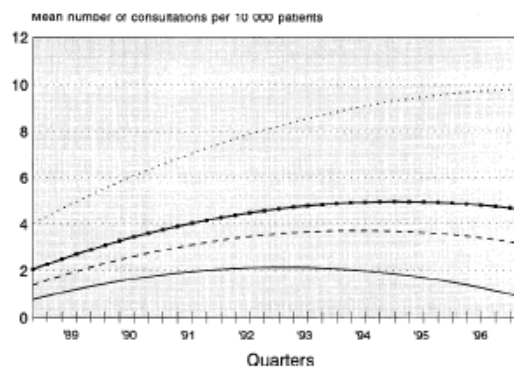


Figure 2. Trendlines of the number of HIV-related consultations per 10,000 patients by degree of urbanization in the period April 1988–December 1996
 —■—Total - - -Highly urban . . .Moderately urban —Rural