MSM

Does the recent increase in HIV diagnoses among men who have sex with men in the UK reflect a rise in HIV incidence or increased uptake of HIV testing?

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Additional table and references available online at http://sti.bmj.com/supplemental

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Objectives: To determine whether the increase in HIV diagnoses since 1997 among men who have sex with men (MSM) in the UK reflects a rise in HIV incidence or an increase in HIV testing.
Methods: Estimates of HIV incidence were derived using data from UK HIV surveillance systems (HIV diagnoses; CD4 surveillance; unlinked anonymous surveys) for 1997–2004. Data on HIV testing were provided by KC60 statutory returns, voluntary testing and unlinked anonymous surveys in sentinel genitourinary medicine (GUM) clinics.
Results: HIV diagnoses among MSM in the UK rose by 54% between 1997 and 2004 (from 1382 to 2124), with variation by age and geographical location. The number of HIV diagnoses among MSM <35 years of age in London showed no increase, but in all other groups it increased. Throughout the UK, uptake of HIV testing increased significantly among MSM attending GUM clinics between 1997 and 2004, including ''at-risk'' MSM ($p<0.001$). Direct incidence estimates (serological testing algorithm for recent HIV seroconversion assay) provided no evidence of a statistically significant increase or decrease in HIV incidence. Indirect estimates suggested that there may have been a rise in HIV incidence, but these estimates were influenced by the increased uptake of HIV testing.
Conclusions: The number of HIV diagnoses increased among MSM in the UK between 1997 and 2004, except among younger MSM in London, in whom there was no change. The increase in HIV diagnoses among MSM in the UK since 1997 seems to reflect an increase in HIV testing rather than a rise in HIV incidence.

The number of HIV diagnoses among men who have sex with men (MSM) in the UK has risen annually since 1999.[1] This rise may reflect increasing HIV incidence among MSM, or an increase in the uptake of HIV testing. Diagnoses may have also risen because of improved reporting and migration to the UK by HIV-infected MSM. Similar trends in increasing HIV diagnoses have been observed in The Netherlands, Australia and the USA.[2–4]

Rising HIV diagnoses among MSM in the UK have coincided with an increase in high-risk sexual behaviour and other sexually transmitted infections (STIs) that may facilitate HIV transmission.[1 5–11] However, over the same period, there have been initiatives to increase the uptake of HIV testing among genitourinary medicine (GUM) clinic attendees. The availability of effective treatment for HIV may have also encouraged more MSM to seek an HIV test.[12–14]

Although the increase in HIV diagnoses among MSM in the UK has been described before,[5] the reasons behind this increase have not been investigated. Does the increase in HIV diagnoses reflect an increase in HIV incidence or an increased uptake of HIV testing? An increase in HIV incidence would have important implications for HIV prevention and targets to reduce HIV transmission among MSM. On the other hand, increased uptake of HIV testing would highlight success in reducing the number of MSM with undiagnosed HIV.[12–14]

METHODS

National HIV surveillance data for MSM, 1997–2004, were examined to derive estimates of HIV incidence, patterns of HIV testing and changes in HIV reporting.

Data sources

We used surveillance data from the following sources:

1. Laboratory and clinical reports of HIV diagnoses in the UK;
2. CD4 surveillance providing information on CD4 cell count at diagnosis for MSM in England and Wales (70%) and Scotland (95%);
3. Unlinked anonymous surveys in 28 sentinel GUM clinics throughout the UK (16 clinics in England, Wales and Northern Ireland (E,W&NI), and 12 in Scotland), providing data on prevalence of undiagnosed HIV and uptake of voluntary confidential testing (VCT) for HIV;
4. KC60 and ISD(D)5 statutory returns on number of HIV tests from all GUM clinics in E,W&NI and Scotland, respectively;
5. Data on voluntary named HIV testing collected in all settings throughout Scotland.

Further details on the sources of surveillance data are summarised in table A (available online at http://sti.bmjjournals.com).

HIV incidence estimates

HIV diagnoses do not provide a measure of incidence, as infection may not be recent. A direct estimate of HIV incidence

Abbreviations: E,W&NI, England, Wales and Northern Ireland; GUM, genitourinary medicine; MSM, men who have sex with other men; STARHS, serological testing algorithm for recent HIV seroconversion; STI, sexually transmitted infection; VCT, voluntary confidential testing

can be obtained using a laboratory assay (serological testing algorithm for recent HIV seroconversion (STARHS)).[15] Coupled with appropriate information on the population testing negative for HIV, incidence in a defined population can be directly estimated. The technique has been applied to leftover samples from routine syphilis tests among HIV-infected MSM unaware of their HIV status who tested positive on unlinked anonymous testing in 16 sentinel GUM clinics in E,W&NI.[16 17]

Indirect methods to examine trends in HIV incidence

1. We examined the proportion and number of HIV diagnoses where CD4 cell count at diagnosis was ⩾700 cells/mm^3 (''early diagnoses''). An increase in the proportion and number of early diagnoses over time could reflect an increase in incidence, although this could also reflect an increase in HIV testing. Even if this cut-off point excluded some recent seroconverters with low CD4 cell counts, the index would still be valid if the excluded proportion remained constant over time. A cut-off of ⩾500 cells/mm^3 was also investigated.
2. We examined the proportion and number of HIV diagnoses where CD4 cell count at diagnosis was <200 cells/mm^3 (''late diagnoses''). If the proportion and number of late diagnoses remain stable or decline over time, an increase in the number of HIV diagnoses could reflect an increase in HIV incidence. Again, this measure will also be influenced by changing patterns of HIV testing.

HIV testing

1. The number of HIV tests in MSM can be obtained from KC60 statutory returns in E,W&NI and from the surveillance of voluntary named HIV testing in Scotland. Data for E,W&NI exclude 2003 and 2004, as the coding on KC60 statutory returns changed. Most HIV tests among MSM in the UK are conducted in GUM clinics.
2. The unlinked anonymous GUM survey in 28 UK clinics collects information on uptake of VCT. MSM with previously diagnosed HIV were excluded from all analyses. To determine whether there was differential testing among MSM at higher risk and lower risk of acquiring HIV, data are presented separately for all MSM, HIV-infected MSM, and MSM with an acute STI.

Reporting changes

Clinical reporting of HIV diagnoses in E,W&NI was introduced in 2000 to supplement information collected on laboratory, AIDS and death reports. Before 2000, HIV diagnoses were reported by laboratories only. The number of MSM with only a clinical report was examined in an attempt to quantify the effect of reporting changes on the increase in HIV diagnoses between 1997 and 2004. Patients with only a clinical report may reflect improved ascertainment (ie, before clinical reporting was introduced, these patients may not have been notified to the Health Protection Agency because of a lack of reporting by some laboratories). But they could also reflect ''reporting compensation'', whereby clinical reports are sent in place of laboratory reports. There were no such reporting changes in Scotland.

Data analysis

Changes between 1997 and 2004 were analysed using data from each year categorised into the following five groups: MSM <35 years diagnosed in London; MSM ⩾35 years diagnosed in London; MSM <35 years diagnosed elsewhere in E,W&NI; MSM ⩾35 years diagnosed elsewhere in E,W&NI; all MSM diagnosed in Scotland. Categories were chosen to allow comparison with an earlier analysis (with 16–24 and 25–34 years combined because of small numbers in the younger age group) and with a study from the Netherlands.[3 5] Thirty five years is also the median age of HIV diagnosis for MSM in the UK. Proportional increases over time are relative to the baseline value in 1997 when the current increase in high-risk sexual behaviour among MSM in the UK began to be documented.[18 19]

Statistical inference (χ^2 test for trend) was made only for data from sample populations (unlinked anonymous surveys). STARHS statistical analyses have been described elsewhere.[16 17] For sample populations, all years from 1997 to 2004 were included in the trend analyses, but only data for 1997 and 2004 are presented (annual data available on request). For population-based data, statistical tests were not undertaken, with comparisons made between 1997 and 2004 only.

Confidentiality and ethics

Reports of HIV diagnoses are voluntary and confidential. To maintain patient confidentiality, no names are held, and soundex codes are used to avoid duplicate reports.[20] The ethical and legal bases for the unlinked anonymous surveys have been described elsewhere.[21] These surveys comply with guidelines published by the Medical Research Council,[22] and Department of Health interim guidelines on the use of human organs and tissue, and with the 2004 Human Tissue Act.[23 24]. All data are stored on restricted and secure databases, with strict adherence to the Data Protection Act and Caldicott Guidelines.[25] Reporting systems in E,W&NI have approval under the section 60 regulations of the Health and Social Care Act 2001 (Statutory Instrument 1438–June 2002).

RESULTS

In 1997, 1382 HIV diagnoses were made among MSM in the UK, rising to 2124 in 2004 (an increase of 54%). In London, the number of HIV diagnoses did not increase appreciably between 1997 and 2004 among MSM <35 years of age (529 and 533), whereas the increase was noteworthy among MSM ⩾35 years of age (369 and 572; +55%). For MSM outside London (excluding Scotland), diagnoses increased for men <35 years (221, 463; +110%) as well as for those ⩾35 years (194 and 556; +187%). Diagnoses also increased for MSM in Scotland (79 and 131 +66%; fig 1).

Direct estimates of HIV incidence

Annual HIV incidence among MSM attending GUM clinics in E,W&NI, estimated by STARHS, was 2.4% (95% CI 1.5 to 4.0) in 1997 and 3.0% (95% CI 1.9 to 4.6) in 2004, with no significant trend over time.[16 17] Estimates of incidence points seemed to rise for MSM ⩾35 years, but there was no statistical evidence of an increase or decrease in any group (fig 2, table 1).

Indirect estimates of HIV incidence

Early diagnoses

The overall proportion of MSM diagnosed in England, Wales and Scotland with a CD4 cell count of ⩾700 cells/mm^3 increased from 12% in 1997 to 26% in 2004 (+122%) (table 2). The greatest increase was among MSM ⩾35 years of age elsewhere in England and Wales (+235%). Similar patterns were found using ⩾500 cells/mm^3 as a cut-off.

Late diagnoses

The overall proportion of MSM in England, Wales and Scotland with a CD4 cell count of <200 cells/mm^3 at diagnosis decreased from 30% in 1997 to 21% in 2004 (−29%). The smallest decrease was seen among MSM <35 years of age in London

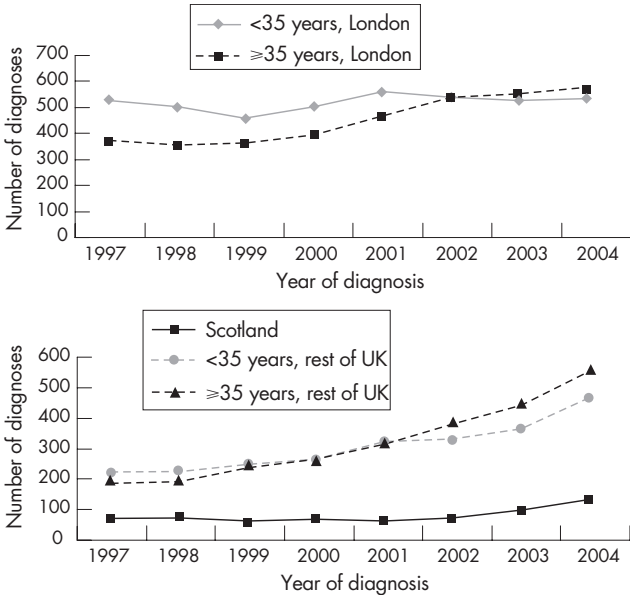

Figure 1 Number of HIV diagnoses among men who have sex with men in the UK, by age and geographical location: 1997–2004.

(−28%), whereas the largest was found among MSM in Scotland (−65%; table 2).

HIV testing

All GUM clinics

The number of HIV tests among MSM attending GUM clinics in London increased from 5114 in 1997 to 9387 in 2002 (+84%), elsewhere in E,W&NI from 5030 to 8864 (+76%), and in Scotland from 1040 in 1997 to 2513 in 2004 (+142%).

Unlinked anonymous GUM clinics

In 1997, 46% of MSM attending sentinel unlinked anonymous GUM clinics in the UK had a voluntary HIV test, rising to 80% in 2004 (+73%; $p<0.001$). The largest increase was among MSM <35 years of age in London (+92%), whereas the smallest was among those <35 years elsewhere in E,W&NI (+42%; $p<0.001$; table 3).

Among the HIV-infected MSM, uptake of VCT rose from 24% in 1997 to 57% in 2004 (+133%; $p<0.001$). The largest increase was among MSM <35 years elsewhere in E,W&NI (+171%; $p<0.001$), and the smallest among MSM ≥35 years in E,W&NI (+15%).

Uptake of VCT among MSM with an acute STI rose from 27% in 1997 to 75% in 2004 (+178%; $p<0.001$). The largest increase was among MSM ≥35 years of age in London (+294%), and the smallest among MSM <35 years in E,W&NI (+99%; $p<0.001$).

Table 4 summarises the percentage changes in the number of HIV diagnoses, direct and indirect incidence estimates and uptake of HIV testing between 1997 and 2004.

Reporting changes

The proportion of MSM with only a clinical HIV report in E,W&NI increased from 0% (2/1382) to 22% (476/2214) between 1997 and 2004. The largest changes were observed outside London: for MSM <35 years, 0% (1/221) to 37% (169/463), and for those ≥35 years, 0% (0/212) to 33% (183/556). Some of these increases can be explained by the change in methodology of the North West region from laboratory to only clinical reporting (data available on request).

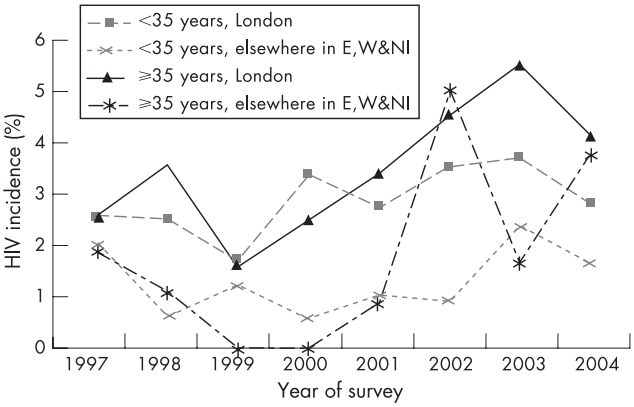

Figure 2 HIV incidence, as estimated by serological testing algorithm for recent HIV seroconversion, among previously undiagnosed men who have sex with men in the unlinked anonymous genitourinary medicine survey in London and elsewhere in England, Wales and Northern Ireland, (E,W&NI) 1997–2004.

DISCUSSION

There was a large increase in the number of HIV diagnoses among MSM across the UK between 1997 and 2004, except for younger (<35 years) MSM in London, in whom there was no change. Among all groups of MSM, a substantial increase in the uptake of HIV testing was observed, with the biggest increase being among those most at-risk of HIV infection. Increased uptake of HIV testing will have contributed substantially to the rise in HIV diagnoses. However, no evidence of a statistically significant increase or decrease in HIV incidence was observed among MSM in E,W&NI using the STARHS assay which provides a direct estimate of incidence. Indirect estimates of HIV incidence, using CD4 cell count at diagnosis, indicated an increase in incidence, as the proportion of MSM diagnosed earlier during the course of infection increased in all groups. However, this increase could also reflect a corresponding increase in the uptake of HIV testing. Outside London, in E,W&NI, improvements in the HIV diagnoses reporting system may have also contributed to the increase in the number of diagnoses among MSM.

The fact that HIV diagnoses among younger MSM in London did not increase at all is particularly interesting, given that there has been a substantial increase in HIV testing among this group. Increased uptake of HIV testing among HIV-infected MSM and those with an acute STI indicates that the increase in testing has not just been among low-risk younger MSM. Taken together, there is no evidence of an increase in HIV incidence among younger MSM in London, despite an increase in STIs and high-risk behaviour in this group.[1 5 7–9]

Methodological issues

This is the first time that changing patterns of HIV incidence and testing among MSM in the UK have been systematically investigated to explain the recent increase in HIV diagnoses. The strength of this analysis is that data on HIV diagnoses, incidence and testing are all presented in the same paper, although disentangling a rise in incidence from an increased uptake of testing is methodologically challenging.

The only direct estimate of incidence was based on data collected from 16 sentinel GUM clinics in E,W&NI participating in the unlinked anonymous survey. Clinics were not randomly selected, and so these estimates may not be generalisable to all GUM clinic attendees, particularly outside London. Estimates will also be raised, as GUM clinic attendees tend to be at higher risk of acquiring HIV than other MSM.

Table 1 HIV incidence, as estimated by serological testing algorithm for recent HIV seroconversion, among previously undiagnosed† men who have sex with men in the unlinked anonymous genitourinary medicine survey in London and elsewhere in England, Wales and Northern Ireland*, 1997 and 2004

		1997					2004				
Area	Age group (years)	Est annual incidence per 100 py	95% CI	Negative specimens	Positive specimens	Recent infections by STARHS‡	Est annual incidence per 100 py	95% CI	Negative specimens	Positive specimens	Recent infections by STARHS‡
London	<35	2.58	(1.31 to 4.85)	2750	142	22	2.80	(1.34 to 5.31)	2312	99	21
	⩾35	2.58	(1.05 to 5.66)	1497	81	11	4.16	(2.06 to 7.68)	1751	110	24
Elsewhere in E,W&NI	<35	2.04	(0.56 to 5.67)	950	31	6	1.64	(0.58 to 3.81)	1855	26	10
	⩾35	1.90	(0.28 to 7.06)	532	14	3	3.78	(1.5 to 8.17)	1034	47	13

E,W&NI, England, Wales and Northern Ireland; STARHS, serological testing algorithm for recent HIV seroconversion.
Data for other years available on request. Source: Unlinked anonymous genitourinary medicine surveys in England, Wales and Northern Ireland[16 17]
*Those who were aware of their HIV status, including men on highly active antiretroviral therapy and those with AIDS, were excluded from analyses.
†Data were not available for Scotland.
‡Missing specimens were allocated as reactive or non-reactive in STARHS by reallocation in the same proportion as known specimens by clinic and age group.

The indirect estimates of HIV incidence were based on an increase in early diagnoses, or a decrease in late diagnoses. However, these indices may also reflect an increase in HIV testing, as well as earlier presentation by MSM. The influence of reporting changes on the increase in HIV diagnoses is difficult to assess, as some centres changed their reporting patterns after the introduction of clinical HIV reporting in 2000.

Whereas increased migration to the UK by HIV-infected MSM may have also had an effect on the number of HIV diagnoses, there are as yet no discernible trends in selective migration of HIV-infected MSM to the UK.[26] Unlinked anonymous data show an increasing HIV prevalence among MSM in the UK born in other world regions, although absolute numbers are small.[27] Demographic changes within the UK MSM population itself may have also contributed to the stable number of diagnoses of HIV among younger MSM in London. However, interpreting census data on all men in relation to the changes in the MSM population is difficult and merits further examination.[28]

International trends

In Amsterdam, increasing HIV incidence (measured using STARHS) was observed among MSM >35 years of age, but not <34 years attending STI clinics (1991–2001), accompanied by an increase in STI incidence and high-risk sexual behaviour.[3 29] Similar trends in HIV incidence has been observed in Australia.[2] In E,W&NI, we did not observe an increase in HIV incidence among MSM using the STARHS assay on samples from GUM clinics participating in the unlinked anonymous GUM clinic survey. However, a similar increase was observed in STIs among MSM in the UK to The Netherlands.[1 5] The reason for the differences in HIV incidence trends between MSM in Amsterdam and London is not clear. They might be due to differences in the sample populations or changes in the E,W&NI STARHS denominator over time.[16 17]

Conclusions

Our analysis shows that the number of HIV diagnoses increased among MSM in the UK between 1997 and 2004, except among younger MSM in London, in whom there was no change. A substantial increase in the uptake of HIV testing seems to explain the rise in HIV diagnoses. Direct estimates of HIV incidence among MSM in E,W&NI provided no evidence of a statistically significant change in HIV incidence between 1997 and 2004, indicating that HIV transmission continued at a steady rate among MSM in the UK between 1997 and 2004.

Table 2 Early and late diagnoses of HIV (CD4 cell count at diagnosis) among men who have sex with men in London, elsewhere in England and Wales, and in Scotland in 1997 and 2004

				Year of HIV diagnosis						
				1997			2004			
Indirect estimate of incidence of HIV		Geographical areas	Age group (years)	n	N	%	n	N	%	Percentage change 1997–2004
Early diagnosis of HIV infection	CD4 count at diagnosis ⩾700 cells/mm^3	London	<35	47	352	13.4	77	317	24.3	82
			⩾35	22	253	8.7	61	403	15.1	74
		Elsewhere in England and Wales	<35	16	100	16.0	118	329	35.9	124
			⩾35	8	87	9.2	129	419	30.8	235
		Scotland	All ages	6	59	10.2	18	95	18.9	86
		England and Wales and Scotland	All ages	99	851	11.6	403	1563	25.8	122
Late diagnosis of HIV infection	CD4 count at diagnosis <200 cells/mm^3	London	<35	63	352	17.9	41	317	12.9	−28
			⩾35	97	252	38.5	87	331	26.3	−32
		Elsewhere in England and Wales	<35	25	100	25.0	48	329	14.6	−42
			⩾35	43	87	49.4	124	419	29.6	−40
		Scotland	All ages	25	59	42.4	14	95	14.7	−65
		England and Wales and Scotland	All ages	253	850	29.8	314	1491	21.1	−29

n, number of men who have sex with men (MSM) with CD4 cell count 200–700 cells/mm^3 at diagnosis; N, total number of MSM for whom a CD4 cell count at diagnosis was available.
Data for other years available on request. Source: CD4 surveillance schemes in England and Wales and in Scotland.

Table 3 Uptake of voluntary confidential testing (VCT) among men who sex with men (MSM) in the unlinked anonymous genitourinary medicine (GUM) surveys in London, elsewhere in England, Wales and Northern Ireland, and in Scotland in 1997 and 2004

			Year of HIV diagnosis						
			1997			2004			
	Geographical areas	Age group (years)	n	N	%	n	N	%	Percentage change 1997–2004
Uptake of VCT among all MSM GUM attendees*	London	<35	1191	2803	42.5	1458	1790	81.5	92
		⩾35	566	1533	36.9	968	1408	68.8	86
	Elsewhere in England and Wales	<35	626	982	63.7	1423	1572	90.5	42
		⩾35	285	545	52.3	689	875	78.7	51
	Scotland	All ages	451	955	47.2	1157	1533	75.5	60
	UK	All ages	3119	6818	45.7	5695	7178	79.3	73
Uptake of VCT among HIV+ MSM GUM attendees	London	<35	30	141	21.3	34	65	52.3	146
		⩾35	20	82	24.4	46	82	56.1	130
	Elsewhere in England and Wales	<35	9	32	28.1	16	21	76.2	171
		⩾35	6	13	46.2	18	34	52.9	15
	Scotland	All ages	6	23	26.1	22	37	59.5	128
	UK	All ages	71	291	24.4	136	239	56.9	133
Uptake of VCT among MSM with an acute STI*	London	<35	265	1003	26.4	449	649	69.2	162
		⩾35	77	455	16.9	269	403	66.7	294
	Elsewhere in England and Wales	<35	132	299	44.1	600	683	87.8	99
		⩾35	32	119	26.9	223	297	75.1	179
	Scotland	All ages	75	283	26.5	318	452	70.4	165
	UK	All ages	581	2159	26.9	1859	2484	74.8	178

n, number of MSM who accepted VCT; N, total number of MSM included in the unlinked anonymous GUM survey; Data for other years available on request. Source: Unlinked anonymous genito-urinary medicine surveys in England, Wales and Northern Ireland and in Scotland
*Those with previously diagnosed HIV infection are excluded.

Taken in concert with STI data, our analysis points towards a need for additional investment in targeted sexual health promotion if the goal of reducing HIV transmission among MSM is to be met.[12–14] This should be coupled with a further understanding of sexual risk behaviour among MSM.[30] In terms of surveillance, further examination of the relationship between HIV diagnoses, testing and HIV incidence data is required to explain trends among younger MSM in London and differences in trends between the UK and other countries. Finally, the substantial increase in the uptake of HIV testing among MSM in recent years highlights the recent success of sexual health promotion in reducing the number of MSM with undiagnosed HIV.

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Competing interests: None.

SD and KF conceived the idea for the paper, with significant input from JE, TRC, AEB and KR; SD provided the UK diagnoses data, AEB the unlinked anonymous GUM survey data from E,W&NI, GM the unlinked anonymous STARHS data, TRC the CD4 surveillance data from England and Wales,

Table 4 Changes between 1997 and 2004 in the number of HIV diagnoses, direct incidence estimates, indirect incidence estimates and HIV testing among men who have sex with men (MSM) in the United Kingdom

			Direct incidence estimates	Indirect incidence estimates			HIV testing		
				Early diagnoses	Late diagnoses		Uptake of VCT among MSM* attending GUM clinics in the unlinked anonymous GUM survey		
Geographical area	Age group (years)	Number of diagnoses of HIV	STARHS incidence/ 100/py	CD4 count at diagnosis ⩾700 cells/mm^3	CD4 count at diagnosis <200 cells/mm^3	Number of VCT tests at all GUM clinics*	All	HIV+	Acute STI
London	<35	+0.8%	2.58; 2.8 (NS)	+82%	−28%	+84%	+92%	+146%	+162%
	⩾35	+55%	2.58; 4.16 (NS)	+74%	−32%		+86%	+130%	+294%
Elsewhere in E,W&NI	<35	+110%	2.04; 1.64 (NS)	+124%	−42%	+76%	+42%	+171%	+99%
	⩾35	+187%	1.90; 3.78 (NS)	+235%	−40%		+51%	+15%	+179%
Scotland	All ages	+66%	NA	+86%	−35%	+142%	+60%	+128%	+128%

* Those with previously diagaosed HIV infection are excluded.
GUM, Genitourinary medicine; MSM, men who have sex with men; NA, non-applicable.

and GM and KR the Scottish data. SD undertook the main analysis and writing of the paper, with all authors, particularly JE, involved in interpretation of the results and drafting of the paper. ONG is the guarantor, who oversaw analyses at the Health Protection Agency and also commented on the drafts. SD is currently registered for a PhD at City University, London.

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COMMENTARY

The UK has one of the most extensive HIV registry systems internationally. The study by Dougan and colleagues is an impressive exercise to explore what we can learn from such registries.[1] Still, in the end it remains challenging to conclude whether increased uptake of HIV testing, a rising HIV incidence or both have contributed to the increasing number of HIV diagnoses among (older) men who have sex with men (MSM) using ecological comparisons. A useful addition that may shed more light on this issue would be to construct a mathematical model that incorporates observed data. Such models have been successfully used in the past to predict HIV spread and to assess the influence of strongly interlinked parameters.[2–4]

The data presented show a stable HIV incidence among MSM in the UK. A rise in HIV incidence is not unexpected considering ongoing high levels of risky sexual behaviour and sexually transmitted infection (STI) epidemics among MSM internationally. To measure the HIV incidence in a population, however, provides a methodological and logistical challenge. The current study uses the serologic testing algorithm for determining recent HIV seroconversion (STARHS) approach that, when incorporated in existing STI/HIV screening programmes at genitourinary medicine (GUM) clinics, is an easy tool to directly estimate HIV incidence. Its wider international (European) application, when standardised, would be of great benefit to HIV incidence surveillance, considering the puzzling discrepant incidence trends found in various countries.

The UK is like, for example, The Netherlands, a country with a historically conservative HIV testing policy. This likely resulted in the still lower testing rates than those found in MSM in, for example, the US or Australia, where testing has been promoted since the beginning of the epidemic.[5–7] After the introduction of highly active antiretroviral therapy (HAART), the UK and The Netherlands changed to an active approach followed by higher testing uptake. Recently several countries, including the UK, have adopted or are planning to implement the opting-out strategy for HIV testing. This strategy has been shown to drastically reduce the number of undiagnosed HIV infections.[8–10] Considering that a substantial proportion of patients (one in five MSM in the UK and The Netherlands, and even higher among heterosexuals) are diagnosed late in their infection, the opting-out strategy may also help to diagnose people earlier, when they have a better chance for optimal treatment.[11–13]

Finally, this study shows the importance of differentiating by age, and agrees with other reports showing an increase in the median age of MSM at HIV diagnosis and showing that HIV incidence is no longer highest in the younger age groups.[14 15] Although conventionally attention is mainly focused towards the young, older MSM should be specifically targeted in HIV and STI prevention.

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