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## The impact in the UK of the Central and Eastern European HIV epidemics

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### SUMMARY

Despite increasing migration, the impact of HIV epidemics from Central and Eastern Europe (C&EE) on the UK HIV epidemic remains small. C&EE-born adults comprised 1·2% of adults newly diagnosed with HIV in the UK between 2000 and 2007. Most C&EE-born women probably acquired their infection heterosexually in C&EE. In contrast, 59% of C&EE-born men reported sex with men, half of whom probably acquired their infection in the UK. Previously undiagnosed HIV prevalence in C&EE-born sexual-health-clinic attendees was low (2007, 0·5%) as was overall HIV prevalence in C&EE-born women giving birth in England (2007, <0·1%). The high proportion of men who have sex with men (MSM) suggests under-reporting of this group in C&EE HIV statistics and/or migration of MSM to the UK. In addition to reducing HIV transmission in injecting drug users, preventative efforts aimed at C&EE-born MSM both within their country of origin and the UK are required.

**Key words:** Central Europe, Eastern Europe, HIV, migration.

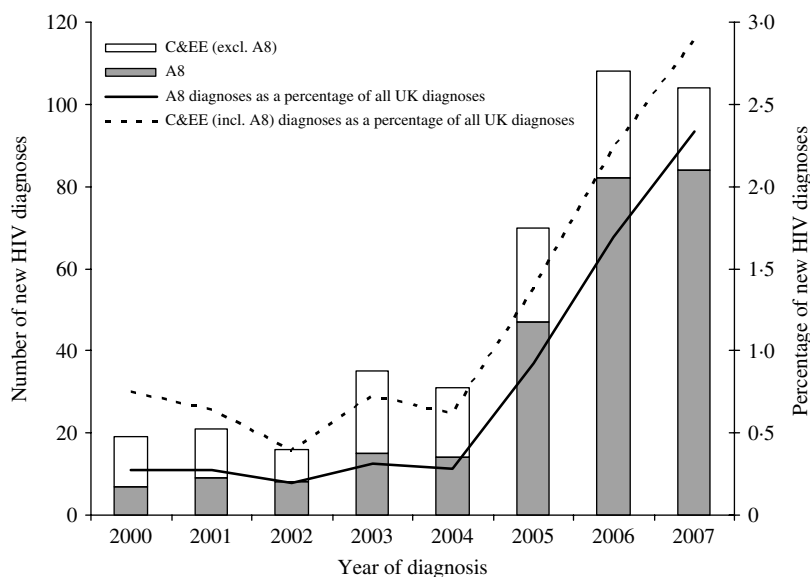
### INTRODUCTION

In the UK over the past 5 years, the annual number of new HIV diagnoses has stabilized at a high level [1, 2]. In many other European countries, new HIV diagnoses continue to rise [3, 4]. In 2007, the highest rate across the three World Health Organisation (WHO) European subregions [3] (see Appendix for subregions) was observed in the East (165 per million population), followed by the West (77 per million) and Centre (10 per million) [4]. In Eastern Europe (EE), injecting drug use (IDU) is the main transmission route although infections acquired heterosexually, mostly in sexual partners of IDU populations, have

also risen [3, 4]. Prevalence estimates of HIV in Georgia, Belarus, Ukraine, Latvia and Estonia in injecting drug users exceed 10% [3]. In Central Europe (CE), HIV prevalence remains low and stable with an increasing number of HIV cases acquired through sexual transmission [4].

There is evidence that population movement facilitates the spread of HIV [5–9]. In 2007, an estimated 831 026 Central and Eastern Europe (C&EE)-born adults were living in England, Wales and Northern Ireland (E,W&NI) whereas, in 2000 the figure was 303 957 [10]. Two thirds of C&EE migrants in 2007 (65%, 539 017/831 026) were from the eight accession countries (A8) that joined the EU in 2004 (Poland, Czech Republic, Slovakia, Hungary, Slovenia, Estonia, Latvia, Lithuania) [10–12]. This recent rise in migration to the UK has generated some concern and media speculation of potential adverse health and

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**Fig. 1.** New HIV diagnoses among individuals born in Central and Eastern Europe (C&EE): England, Wales and Northern Ireland, 2000–2007. A8, The eight accession countries that joined the EU in 2004.

economic impact [13–17]. In this study, we assess the impact of HIV epidemics in C&EE on the HIV epidemic in the UK.

## METHODS

We analysed HIV data in adults ( $\geq 15$  years) in E,W&NI (data for Scotland was omitted as country of birth was not available) from three HIV surveillance systems held at the Health Protection Agency, Centre for Infections, including: (1) new HIV diagnoses, which collects detailed demographic, epidemiological information and CD4 count at diagnosis; (2) unlinked anonymous genitourinary medicine (GUM) clinic survey, which measures the prevalence of previously undiagnosed HIV by using residual serum leftover syphilis blood samples from individuals attending 15 sentinel GUM clinics; (3) unlinked anonymous HIV seroprevalence survey of neonatal dried blood spots (conducted in England only), which measures overall HIV prevalence in woman giving birth [2]. Data are reported for the period 2000–2007 or 2007 alone.

The WHO European subregion definitions for CE and EE were used [3]. To calculate rates of new HIV diagnoses, migration data from the quarterly household-based Labour Force Survey (July–September 2000–2007) were used [10]. Population estimates of people living in E,W&NI were obtained from the Office for National Statistics [18]. Proportions were

calculated among all individuals for whom the relevant information was available. Numbers may rise as further reports are received, particularly for recent years.

## RESULTS

### New HIV diagnoses

Between 2000 and 2007, 48 400 adults were newly diagnosed with HIV in E,W&NI, of whom 33 223 (69%) had probable country of birth reported. The percentage of newly diagnosed individuals born in C&EE was 1.2% (404/33 223), increasing from 0.8% (19/2521) in 2000 to 2.9% (104/3602) in 2007 (Fig. 1). In 2007, the rate of new HIV diagnoses in C&EE-born adults was 125 per million population (104/831 026), compared to an overall rate of 142 (5988/42 092 800) in E,W&NI. In adults born in CE, the rate was 106 per million (74/697 706) and 225 (30/133 320) in those born in EE. In 2007, A8 countries accounted for 81% (84/104) of the C&EE-born adults and 2.3% (84/3602) of all new diagnoses reported in E,W&NI (Fig. 1), presenting a rate of 156 (84/539 017) new diagnosis per million population.

Men accounted for almost two-thirds (64%, 258/404) of C&EE-born adults diagnosed between 2000 and 2007, of whom 59% (149/252) reported sex between men (SBM). Median age at diagnosis was

Table 1. *New HIV diagnoses in individuals born in Central and Eastern Europe (C&EE), by route of infection and probable world region of infection: England, Wales and Northern Ireland, 2000–2007*

Probable world region of infection	Route of infection					Total (100%)*
	Heterosexual contact		SBM (%)	IDU (%)	Others (%)	
	Male (%)	Female (%)				
C&EE	37 (17)	73 (33)	56 (26)	48 (22)	4 (1.8)	220
UK	10 (9.9)	35 (31)	65 (58)	2 (1.7)	0 (0)	112
Others	7 (23)	10 (33)	9 (30)	3 (10)	1 (3.3)	30
Not known	1 (2.9)	4 (11)	19 (45)	11 (26)	0 (0)	42
Total	55 (14)	122 (31)	149 (37)	64 (16)	5 (1.3)	404

SBM, Sex between men; IDU, injecting drug use.

\* Percentages are as a proportion of probable world region of infection subtotals. Total includes persons for whom route of infection were not reported.

slightly higher for men than women (30 vs. 26 years respectively). Sixty-one per cent (220/362) of C&EE-born adults probably acquired their infection in C&EE (212 in their country of birth), of whom half (110/218) were infected heterosexually, a quarter (56/218) through SBM and one-fifth (48/218) through IDU (Table 1). One hundred and twelve (31%) C&EE-born adults probably acquired their HIV infection in the UK over the period. Of the men, 86% (65/76) were probably infected through SBM and all with the exception of one of the women (35/36) through heterosexual contact (Table 1). In UK-born adults, only 0.2% (15/8522) probably acquired their HIV infection in C&EE over the 8-year period.

Of C&EE-born adults diagnosed in 2000–2007 and who were probably infected heterosexually in the UK, 78% (31/40) reported a partner infected in sub-Saharan Africa. In UK-born adults probably infected heterosexually in the UK, 0.5% (6/1205) reported a sexual partner infected in C&EE, 24% (295) a partner infected in the UK and 44% (530) a partner infected in sub-Saharan Africa.

CD4 count at diagnosis is an important determinant of HIV-related morbidity and mortality in the UK. Of the 404 C&EE-born adults, 72% (292) had a CD4 count at diagnosis, of whom 25% (74/292) were diagnosed with a CD4 count < 200 cells/mm<sup>3</sup> (within 3 months of diagnosis), at a point after which therapy should have begun. This proportion was similar to UK-born adults diagnosed in 2000–2007 (26%, 2144/8283) and lower than sub-Saharan African-born adults (38%, 5305/13 798).

### Undiagnosed HIV infection in GUM attendees

In 2007, C&EE-born adults accounted for 4.3% (4612/107 664) of attendees at sentinel GUM clinics across E,W&NI, an increase from 2.6% (1722/65 979) in 2000. The prevalence of previously undiagnosed HIV in C&EE-born adults was 0.46% (95% CI 0.30–0.70, 23/4612) in 2007, similar to that in UK-born adults (0.47%; 95% CI 0.42–0.52, 358/75 379). In 2007, the proportion of C&EE-born GUM attendees who reported having ever injected drugs was 0.63% (95% CI 0.40–0.86, 29/4612), the same as UK-born attendees (0.63%, 95% CI 0.57–0.69; 478/75 737).

### HIV prevalence in women giving birth

In 2007, HIV prevalence in C&EE-born women giving birth in England was 0.08% (11/13 621), compared to a prevalence of 0.05% (76/165 654) in UK-born women. There have been no important trends since 2000.

## DISCUSSION

Our study indicates that to date there has been little impact of the C&EE HIV epidemics on the UK epidemic despite recent European political expansion. Although a rise in reports of new diagnoses (from 19 in 2000 to 104 in 2007) was noted, C&EE-born adults represented only 2.9% of new diagnoses in 2007 and 1.2% of all HIV-diagnosed adults over the 8-year period. About one third of newly diagnosed C&EE-born individuals probably acquired their infection

in the UK. The rate of new HIV diagnoses in C&EE-born adults was lower than the overall rate of HIV diagnoses in adults in E,W&NI. The prevalence of HIV in GUM clinic attendees and pregnant women remains very low in this group. Late presentation (CD4 count <200 cells/mm<sup>3</sup> within 3 months of diagnosis) of HIV remains a concern in C&EE-born adults newly diagnosed in the UK. Individuals diagnosed late are at greater risk of early death [19, 20].

Several factors help explain the limited impact of the C&EE HIV epidemics on the UK. First, migration data indicate that most C&EE migrants to the UK in recent years have been predominately from low HIV prevalence areas (Poland, Slovakia, Lithuania) [10, 21], where some prevalence rates of HIV are lower than in the UK [4]. Second, HIV epidemics in many C&EE countries are driven by a very high prevalence in injecting drug users [3, 4], and there is evidence that these individuals may have less opportunities or motivation to migrate to other countries given often difficult socioeconomic, legal and medical circumstance [9, 22–24]. Furthermore, better access to free needle-exchange services in the UK [23, 25, 26] may have reduced the likelihood of C&EE-born individuals becoming infected through IDU after their arrival. Offering voluntary and confidential HIV testing to injecting drug users and scaling up measures to reduce onward transmission in this group and their sexual partners remains a priority in C&EE countries [3].

Stigma, discrimination and the lack of confidentiality (in some countries) are also major barriers to HIV testing and access to care in men who have sex with men (MSM) [27–30]. MSM were over-represented (58%) in C&EE-born men diagnosed in the UK. This is in contrast to national HIV figures from CE and EE countries where MSM accounted for 17% and 0.5%, respectively, of new diagnoses in men in recent years [31]. Our findings are likely to reflect under-reporting of MSM in these countries and/or selective migration of MSM to the UK as a result of stigma and discrimination.

The results show a small number of UK-born individuals having acquired their infection in C&EE. This highlights the ongoing need for awareness of safer sex in travellers to high-prevalence areas.

The study has several limitations. Data for Scotland had to be omitted as country of birth is not available. Probable route of infection and place of infection were missing for a quarter of new diagnoses and CD4 count for a third of cases. However, there is

no evidence to suggest a bias in data collection or follow-up. Misreported or missing information may also influence prevalence estimates based on unlinked anonymous surveillance. Previously undiagnosed HIV infection reported in GUM clinic attendees is likely to be higher than the general population as these individuals are known to have substantially higher risk than the general population [2]. Rates of diagnoses rely on migration estimates from the Labour Force Survey which are subject to both sampling and non-sampling errors [32].

## CONCLUSION

National HIV surveillance systems indicate little impact of the C&EE HIV epidemics on the UK epidemic. C&EE-born adults accounted for only 1.2% of newly diagnosed adults in E,W&NI for 2000–2007 and the HIV prevalence in GUM clinic attendees and pregnant woman born in C&EE is very low. In addition to targeted interventions for IDU, HIV prevention efforts should particularly focus on C&EE-born MSM, both in their country of origin and within the UK.

## APPENDIX. WHO European subregions

**The West** (23 countries): Andorra, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Luxembourg, Malta, Monaco, Netherlands, Norway, Portugal, San Marino, Spain, Sweden, Switzerland, United Kingdom. **The Centre** (15 countries): Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Hungary, the Former Yugoslav Republic of Macedonia, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia, Turkey. **The East** (15 countries): Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Republic of Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine, Uzbekistan.

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## DECLARATION OF INTEREST

None.

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