

Trends in maternal characteristics of pregnancies in women living with HIV in the UK & Ireland: 2000-2015

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BACKGROUND

Since antenatal HIV screening became routine in the UK and Ireland, there have been major shifts in HIV presentation and management in pregnancy.

With improved treatment with antiretroviral therapy (ART) and high uptake of interventions, the rate of mother-to-child transmission (MTCT) has reached a record low of 0.27% in this context.

We describe trends in maternal demographic and clinical characteristics for pregnancies in diagnosed HIV-infected women in the UK and Ireland in 2000-2015.

METHODS

The National Study of HIV in Pregnancy and Childhood (NSHPC) undertakes **comprehensive, population-based surveillance of pregnancies in women living with HIV** in the UK and Ireland. Analyses were based on pregnancies in women diagnosed with HIV before delivery with estimated date of delivery (EDD) in 2000-2015 and reported to the NSHPC by December 2016.

Trends in medians were assessed using Cuzick's nonparametric test for trend. P-values for trends in categorical variables were obtained using logistic regression models and were adjusted for multiple comparisons using a Bonferroni correction. Chi-squared tests were also used to compare proportions across time groups.

RESULTS

There were 18762 pregnancies reported among 12732 women. Trends in maternal demographic characteristics are described in Table 1.

Median age at EDD increased from 29 (IQR 26-33) years in 2000-03 to 34 (30-37) in 2013-15 ($p < 0.001$).

Table 1. Trends in maternal demographic characteristics, 2000-2015

	2000-2003, n (%)	2004-2006, n (%)	2007-2009, n (%)	2010-2012, n (%)	2013-2015, n (%)	Total	p-value
Maternal age at EDD (n=18760)							
14-24 ↓	504 (18.4)	672 (17.6)	569 (12.7)	394 (9.3)	226 (6.5)	2365	<0.003
25-34 ↓	1760 (64.1)	2353 (61.7)	2682 (59.6)	2308 (54.7)	1720 (49.4)	10823	<0.003
≥35 ↑	483 (17.6)	792 (20.8)	1247 (27.7)	1517 (36.0)	1533 (44.1)	5572	<0.003
Ethnic origin (n=18712)							
White ↑	371 (13.6)	471 (12.4)	604 (13.5)	677 (16.1)	616 (17.8)	2739	<0.003
Black African ↓	2142 (78.2)	3015 (79.3)	3513 (78.2)	3182 (75.6)	2543 (73.3)	14395	<0.003
Other	225 (8.2)	317 (8.3)	375 (8.3)	350 (8.3)	311 (9.0)	1578	1.04
Region of birth (n=18513)							
UK/Ireland	398 (14.6)	469 (12.4)	591 (13.3)	609 (14.7)	516 (15.2)	2583	0.112
Europe (excluding UK/Ireland) ↑	64 (2.3)	111 (2.9)	144 (3.2)	195 (4.7)	230 (6.8)	744	<0.004
Sub-Saharan Africa ↓	2103 (77.0)	2983 (78.8)	3469 (78.1)	3103 (74.8)	2462 (72.3)	14120	<0.004
Elsewhere	167 (6.1)	221 (5.8)	238 (5.4)	243 (5.9)	197 (5.8)	1066	2.77
Maternal risk (n=17829)							
Heterosexual ↑	2534 (93.2)	3551 (94.6)	4087 (95.4)	3707 (95.8)	3034 (94.6)	16913	0.006
Injecting drug use ↓	99 (3.6)	94 (2.5)	83 (1.9)	61 (1.6)	54 (1.7)	391	<0.003
Other	86 (3.2)	107 (2.9)	113 (2.6)	101 (2.6)	118 (3.7)	525	1.16

There were no pregnancies in mothers with perinatal HIV in 2000-03 compared to 51 (2%) in 2013-15.

The proportion of pregnancies in women born in Sub-Saharan Africa declined while that in women born in Europe but outside UK/Ireland increased (Figure 1).

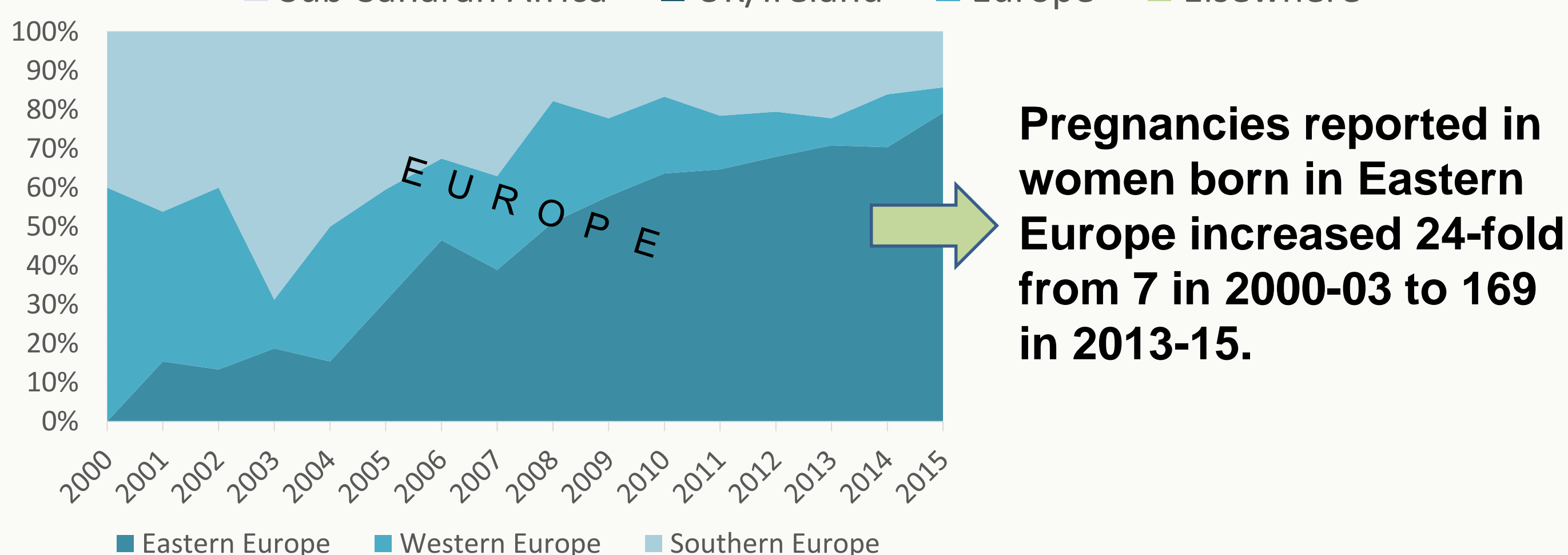
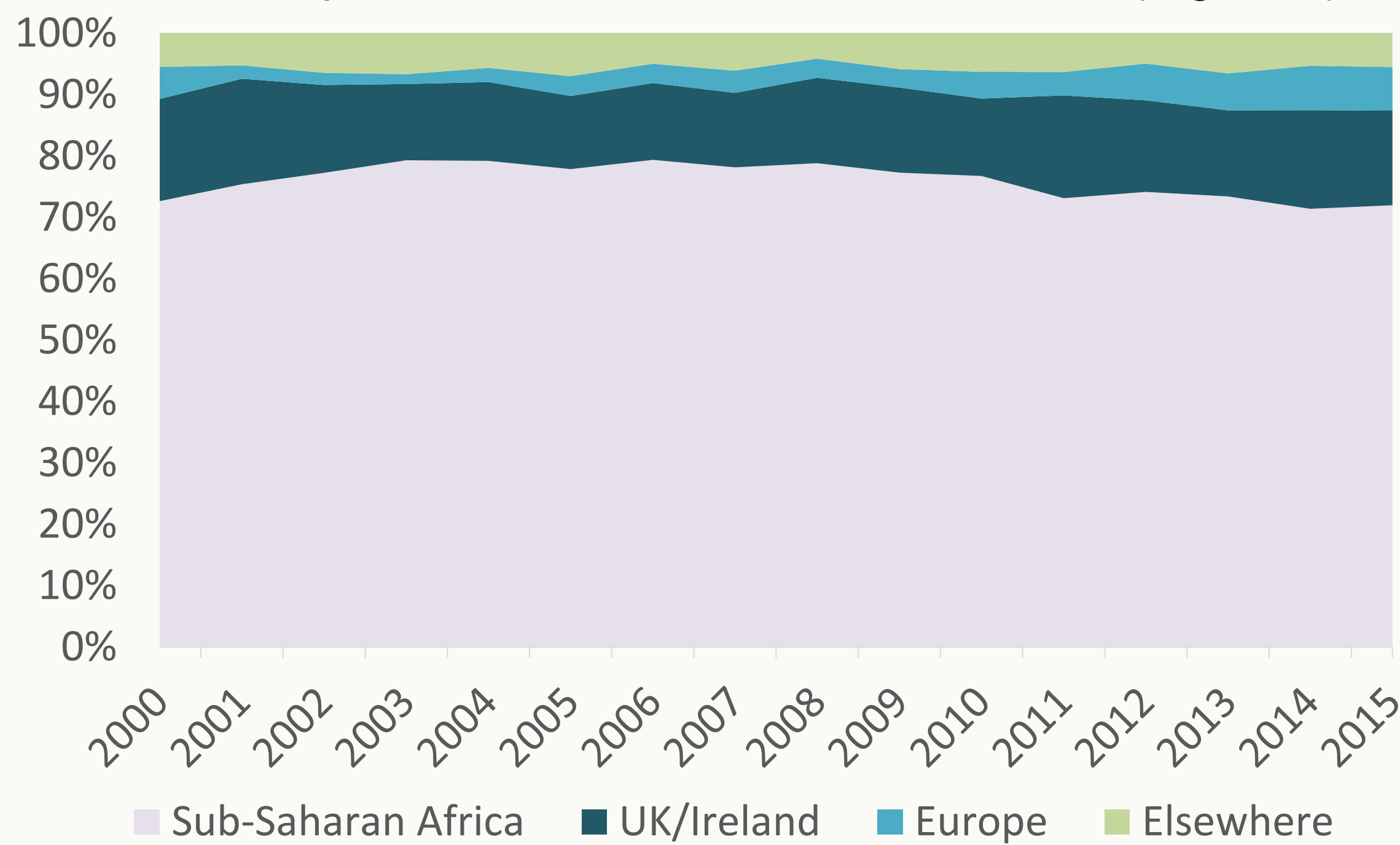


Figure 1. Maternal region of birth of pregnancies over time, 2000-2015

RESULTS

The annual number of pregnancies increased 3-fold from 385 in 2000 to 1116 in 2015 and peaked at 1532 in 2010. The proportion of pregnancies in women diagnosed before pregnancy increased from 41% (1120/2747) in 2000-03 to 86% (2990/3466) in 2013-15 ($p < 0.001$) (Figure 2).



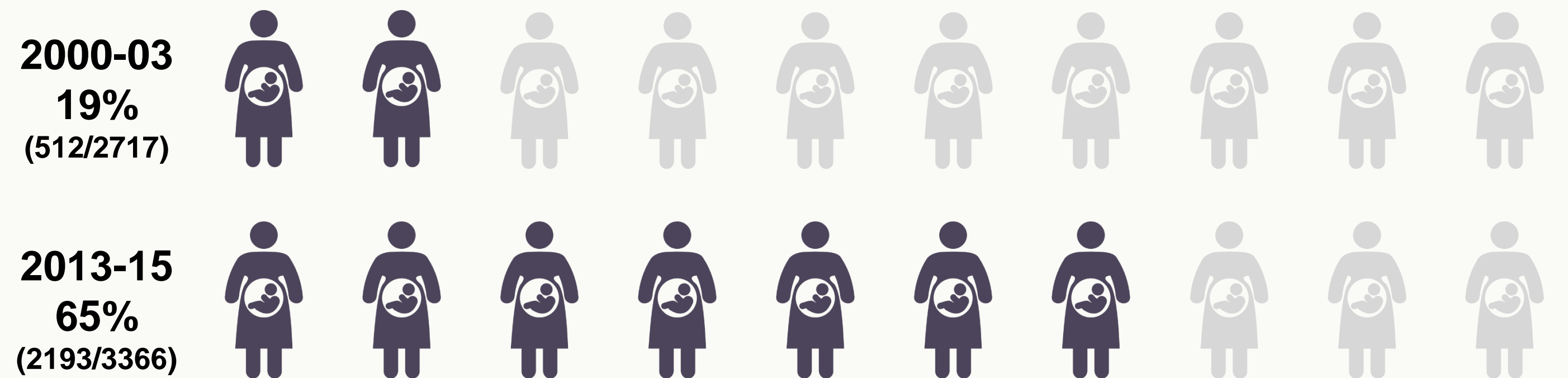
Figure 2. Pregnancies* among women diagnosed by delivery, 2000-2015

*excludes 53 pregnancies for which timing of diagnosis was unknown

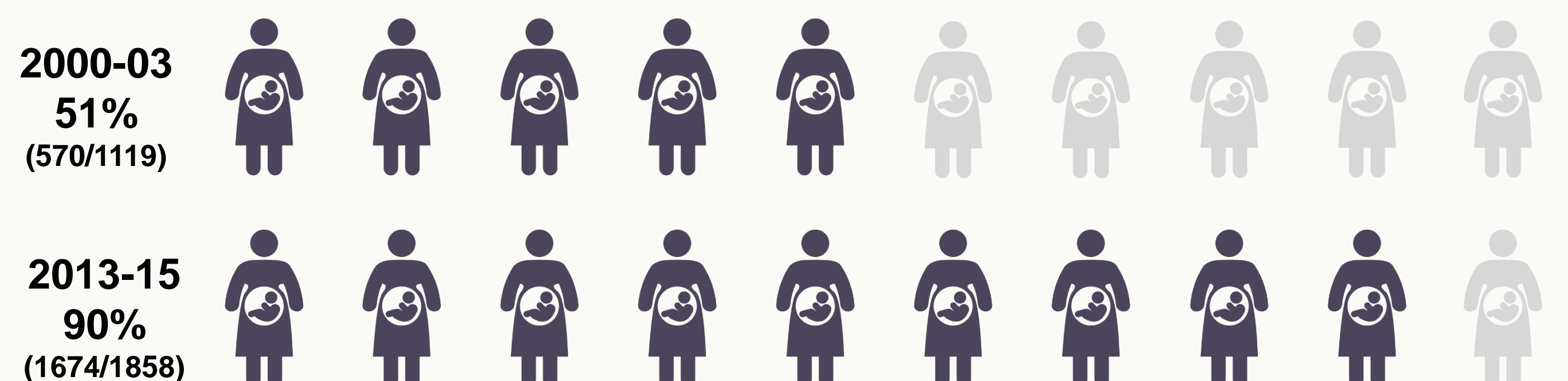
Median first antenatal CD4 count increased from 370 (IQR 245-528) cells/mm³ in 2000-03 to 490 (342-648) cells/mm³ in 2013-15, with pregnancies with CD4 < 200 decreasing from 16% (330/2066) to 8% (223/2871).

In contrast to earlier years, most pregnancies in 2013-15 were conceived on ART and most women achieved viral suppression by delivery (Figure 3).

Pregnancies conceived on ART ($p < 0.001$)



Pregnancies* with viral load <50 copies/ml within 30 days of delivery ($p < 0.001$)



*pregnancies ending in livebirth or stillbirth

Figure 3. Maternal clinical characteristics, 2000-03 vs 2013-15

The proportion of pregnancies reported by London units decreased from 60% in 2000-03 to 37% in 2013-15.

CONCLUSION

Most pregnancies continue to be in women born in Sub-Saharan Africa, but the **increase in pregnancies in women from Eastern Europe** is noteworthy and reflects the growing epidemic in Eastern Europe and migration trends.

Increasing maternal age reflects an **aging population of women living with HIV** as well as the impact of sequential pregnancies, driven by effective HIV treatment and prevention interventions. Appropriate obstetric management for older mothers to mitigate increased risk of pregnancy complications is needed.

The emergence of a **new population of young pregnant women with perinatal HIV** signals potential new challenges in pregnancy management and prevention of second generation vertical transmission.

Previous HIV diagnosis, conception on ART, improved immune status, and delivery with viral load <50 copies/ml are now the norm, reflecting over 97% coverage of antenatal screening of HIV in the UK, improving HIV testing coverage outside pregnancy, and use of more effective and less toxic antiretroviral drugs.

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