

Diabetes and hypertensive disorders in pregnant women living with HIV in the UK and Ireland

Laurette Bukasa, Helen Peters, Claire Thorne

On behalf of the Integrated Screening Outcomes Surveillance Service (ISOSS) a part of the Infectious Diseases in Pregnancy Screening (IDPS) programme, which is commissioned by NHS England, and based at UCL Great Ormond Street Institute of Child Health

Conflicts of Interest

In relation to this presentation, I declare that I have no conflict of interest

Background & Aims



- There is a higher burden of diabetes and conflicting evidence on risk of hypertension among adults living with HIV compared to adults without HIV
- Women may be disproportionately affected
- Diabetes and hypertensive disorders (HD) in pregnancy are associated with adverse birth outcomes, including in women living with HIV (WLWH)

Aims

- To estimate prevalence of these comorbidities among pregnant WLWH in the UK and Ireland
- To compare characteristics of women with and without diabetes and HD, and to describe their birth outcomes

Methods



Integrated Screening Outcomes Surveillance Service

- Collects population-level surveillance data on all pregnant women living with HIV in the UK and Ireland*
- Reported data from maternity units include HIV infection history, test results, complicating conditions in pregnancy and birth outcomes

*Ireland until 2019 and England only from 2020

Definitions - comorbidities

- Diabetes = pre-existing diabetes, gestational diabetes
- Hypertensive Disorders (HD) = pre-eclampsia, hypertension, pregnancy-induced hypertension
- Comparison group = no pregnancy complications

Definitions – birth outcomes

- preterm birth (PTB, <37 weeks),
- low birthweight (LBW, <2500g),
- small-for-gestational age (SGA, <10th percentile, INTERGROWTH-21)
- birthweight z-scores (INTERGROWTH-21).

10,401 pregnancies to 8998 women

- Diagnosed with HIV-1 prior to delivery
- Delivered ≥ 24 gestational weeks
- Between Jan 2010 – Dec 2020 in UK or Ireland

1104 pregnancies excluded

Diabetes
(N=554 pregnancies to 503 women)

Hypertensive disorders (HD)
(N=511 pregnancies to 458 women)

Both Diabetes & HD
(N=46 pregnancies to 43 women)

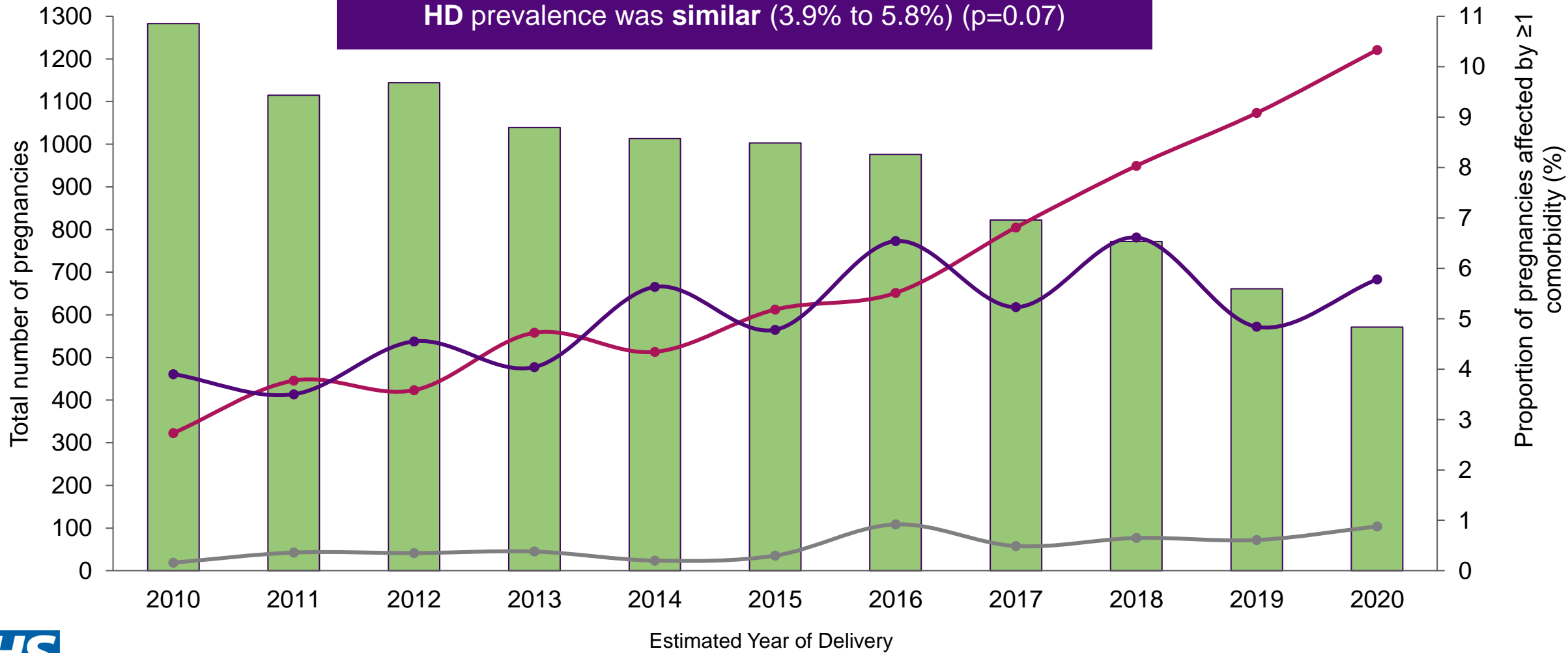
Comparison group
(N=8232 pregnancies to 5937 women)

Complication	N	%
Gestational diabetes	511	92.2

Complication	N	%
Pre-eclampsia	383	75.0

Diabetes prevalence increased from 2.7% to 10.3% ($p < 0.001$)

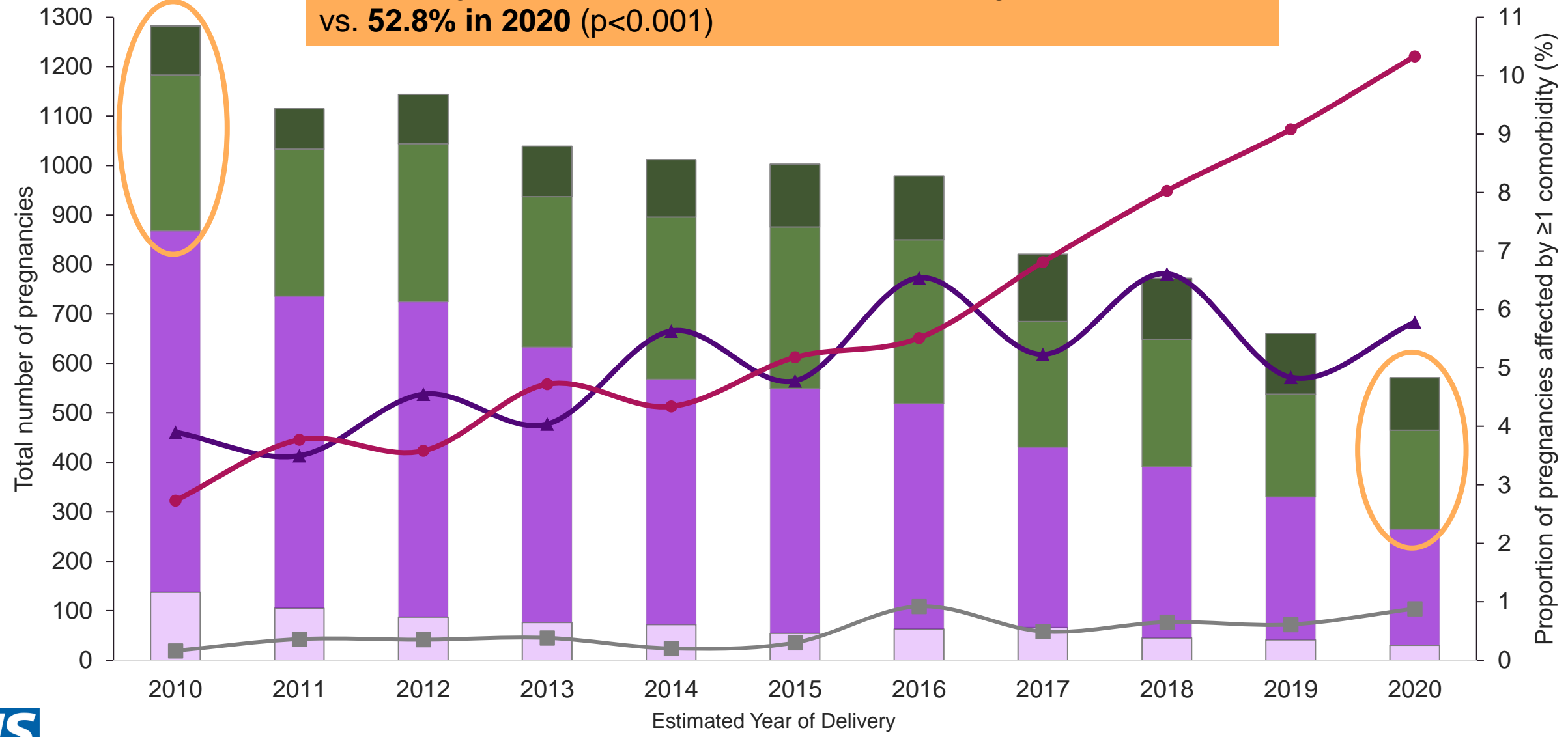
HD prevalence was similar (3.9% to 5.8%) ($p = 0.07$)



Characteristics of women with diabetes and HD

Risk factor	Diabetes N=554 (%)	HD N=511 (%)	Both N=46 (%)	Comparison group N=8231 (%)
≥35 years	347 (62.6)	292 (57.2)	32 (69.6)	3252 (39.5)
Black African / Caribbean	433 (79.4)	419 (83.6)	37 (82.2)	6054 (74.5)
Asian	27 (5.0)	10 (2.0)	2 (4.4)	239 (2.9)
1 st pregnancy	315 (56.9)	288 (56.4)	27 (58.7)	4026 (48.9)
Treatment at conception	403 (72.9)	346 (68.0)	33 (71.7)	5232 (64.0)

Women aged ≥ 35 in **2010** were **32.4%** of the pregnant population vs. **52.8%** in **2020** ($p < 0.001$)



Pregnancy & birth outcomes

Emergency Caesarean Section

Diabetes



Hypertensive disorders



Comparison group



Stillbirth prevalence

Diabetes



Hypertensive disorders



Comparison group



Preterm birth

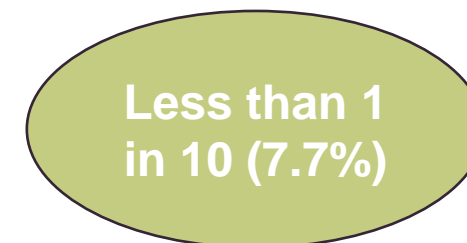
Diabetes



Hypertensive disorders



Comparison group



Newborn size

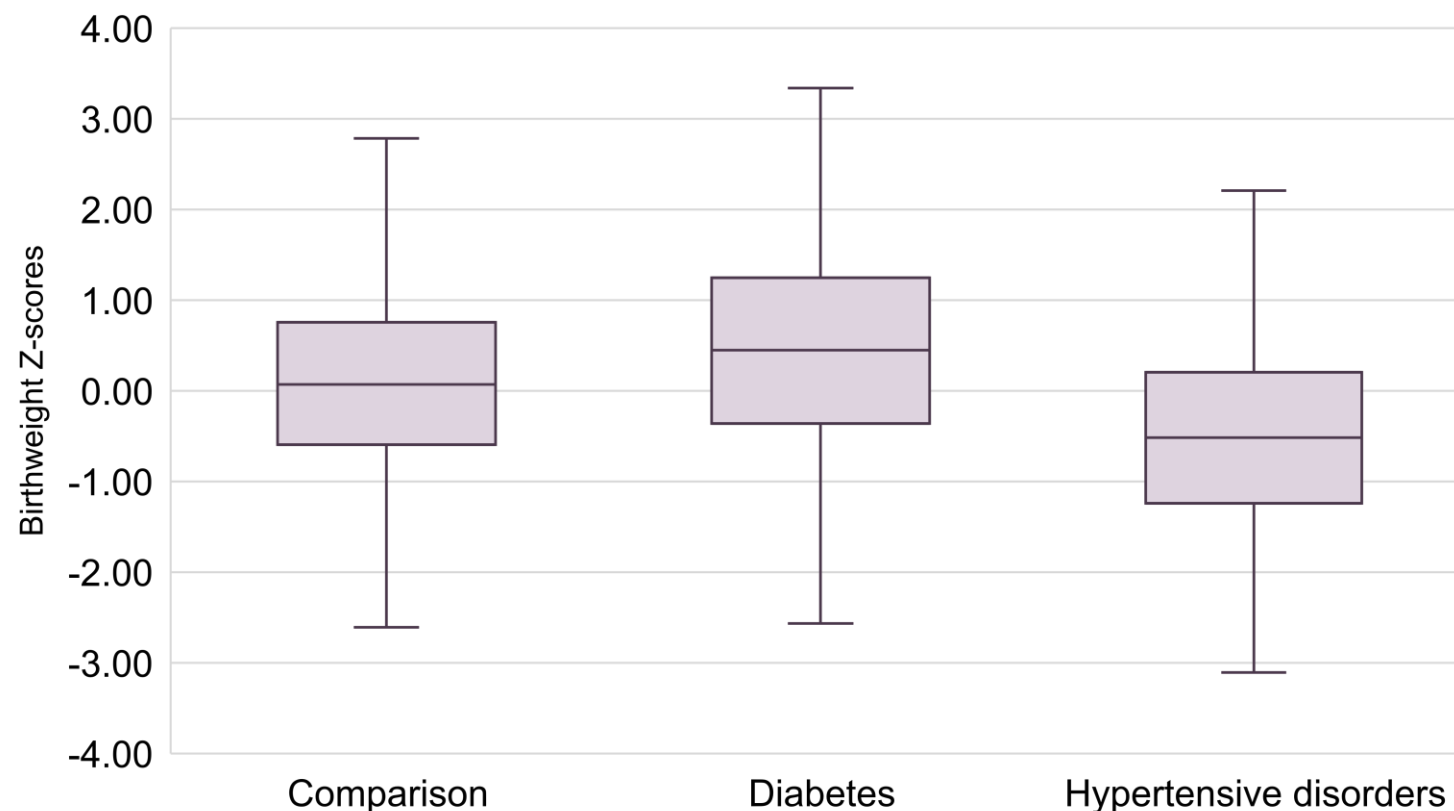
Low birthweight (LBW)

- Almost half (46%) of infants born to women with HD were LBW
- This compares with 8.8% in comparison group and 13.4% among infants born to women with diabetes

Small for gestational age (SGA)

- 1 in 5 (21.1%) infants born to women with HD were SGA
- Compared to 8.2% in comparison group and 6% of infants born to women with diabetes

Distribution of birthweight Z-scores by study population group



Conclusions

- **Most women** with diabetes or hypertensive disorders had **gestational diabetes or pre-eclampsia**
- **Diabetes prevalence is increasing** in line with estimates from the general population, whilst HD prevalence is remaining relatively static
- **Maternal age may be a driver for increases in diabetes prevalence**, although weight could be a mediator that we were unable to assess
- Women with **comorbidities were more likely to have an adverse birth outcome** than women without pregnancy complications
- **Limitations** include missing data on BMI or other weight indices; screening for gestational diabetes and detection of pre-eclampsia

Further resources:

Bukasa, L.L., Cortina-Borja, M., Peters, H., Taylor, G.P. and Thorne, C. (2023), *Gestational diabetes in women living with HIV in the UK and Ireland: insights from population-based surveillance data*. J Int AIDS Soc., 26: e26078. <https://doi.org/10.1002/jia2.26078>

Acknowledgements

- Thank you to all the women living with HIV, the respondents who report to ISOSS and the ISOSS team for their contributions to this project
- UCL are the commissioned data processors for NHS England's Infectious Diseases in Pregnancy Screening (IDPS) Programme who are the data controllers and owners
- For any queries, please get in touch: l.bukasa@ucl.ac.uk

More information on ISOSS can be found here: www.ucl.ac.uk/isoss