

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

Laurette Bukasa

Integrated Screening Outcomes Surveillance Service (ISOSS), UK

# 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, <10<sup>th</sup> 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)

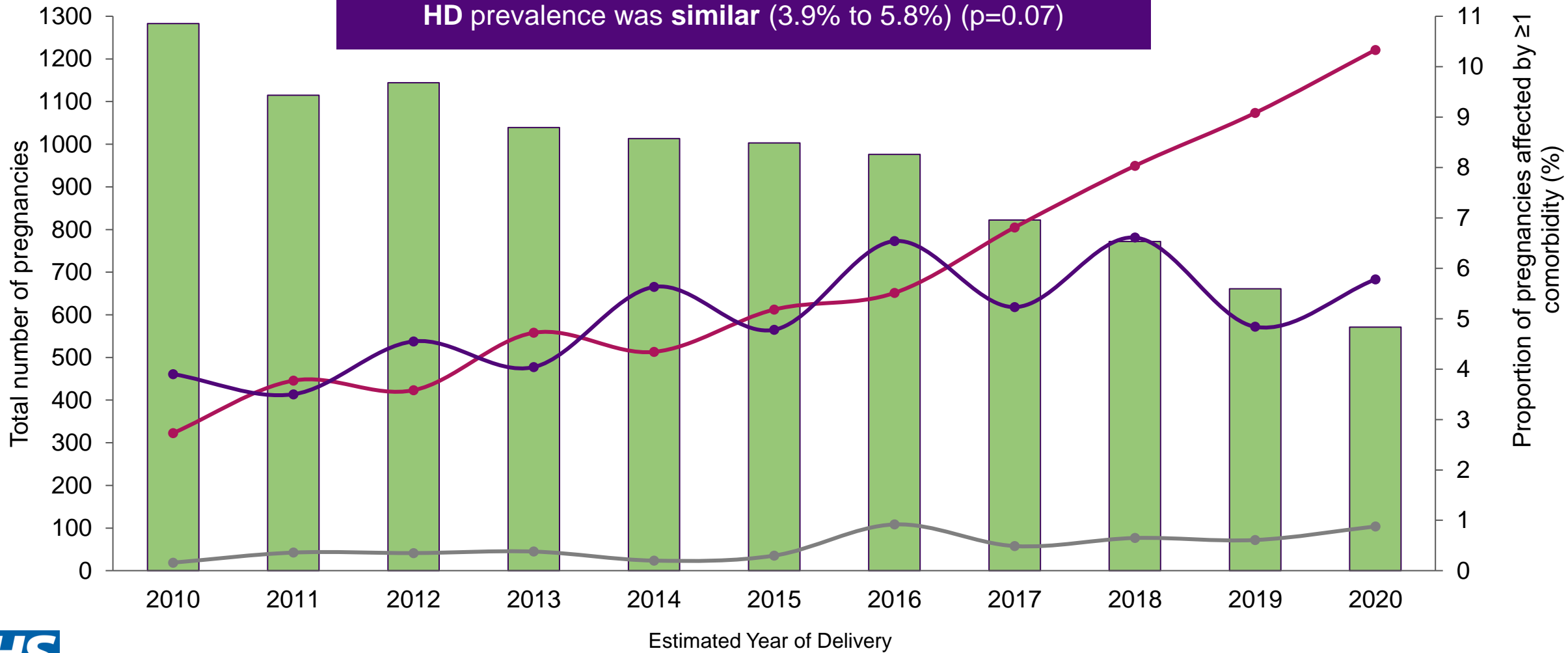
**Comparison group**  
(N=8232 pregnancies to 5937 women)

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%) ( $p = 0.07$ )**

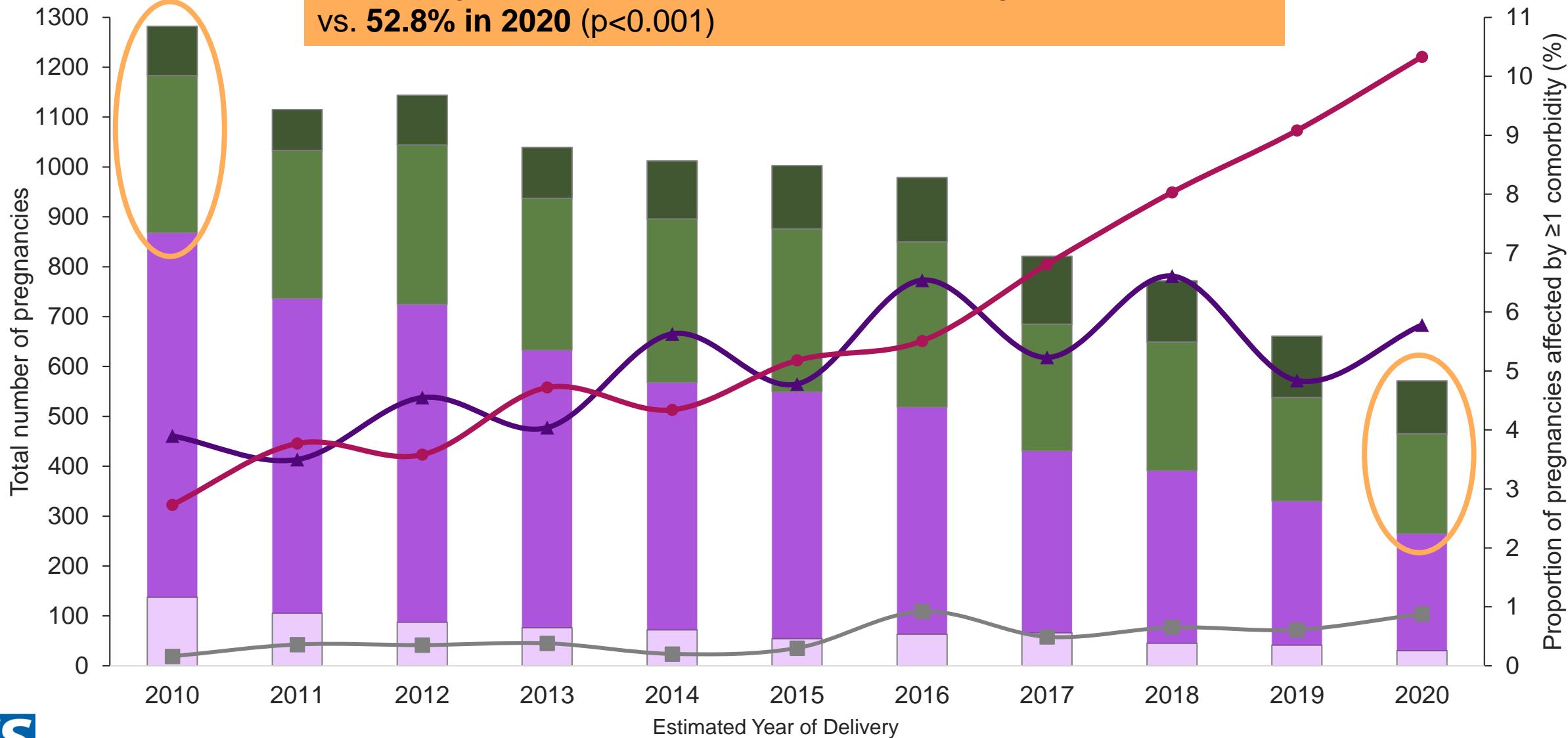


# Characteristics of women with diabetes and HD

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 <sup>st</sup> 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  $\geq 35$  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

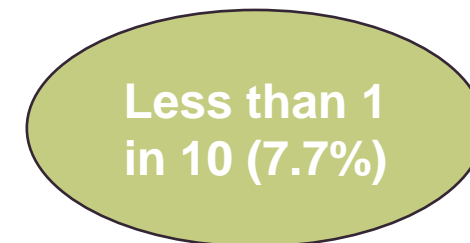
*Diabetes*



*Hypertensive disorders*



*Comparison group*



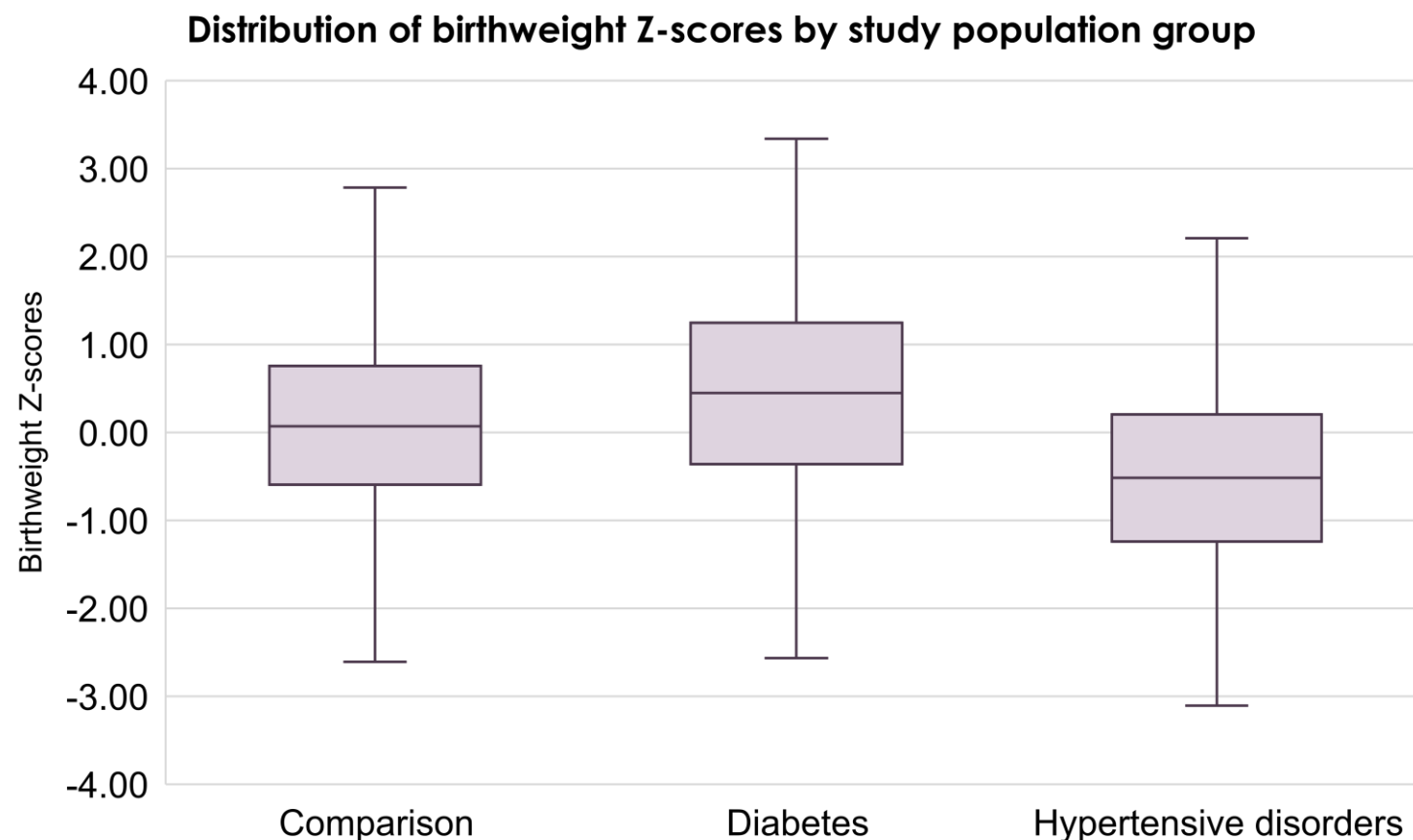
# Newborn size

## 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



# 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>

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- 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](mailto:l.bukasa@ucl.ac.uk)

More information on ISOSS can be found here: [www.ucl.ac.uk/isoss](http://www.ucl.ac.uk/isoss)