Infants exposed to HIV and coinfection in pregnancy:
the current picture using UK population level surveillance data

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BACKGROUND

- People living with HIV frequently experience acquired and blood-borne coinfections.
- Infants born to women living with HIV (WLWH) who also have coinfection during pregnancy may be at increased risk for adverse outcomes, including vertical/congenital infection requiring increased management and monitoring.
- Using observational population-level surveillance data, we describe the current picture of infants exposed to HIV and coinfection in pregnancy.

METHODS

- The Public Health England Infectious Diseases in Pregnancy programme's **Integrated Screening Outcomes Surveillance Service (ISOSS)** conducts active surveillance of all pregnancies in WLWH and their infants, along with any children diagnosed with HIV in the UK.
- In addition, data on Hepatitis B (HBV) and syphilis (screened for in pregnancy) and hepatitis C (HCV) coinfection are collected.
- Descriptive statistics **summarise infants born in 2009-2018 to WLWH with information on maternal coinfection** (8832/10675), reported to ISOSS by December 2019.

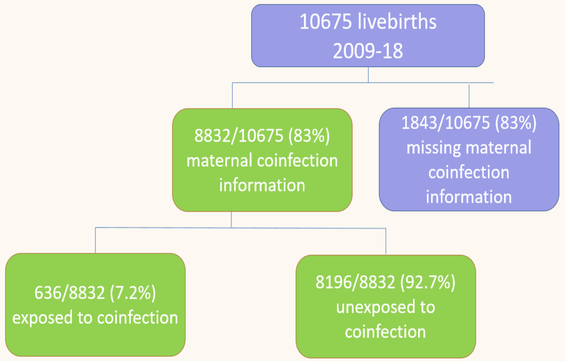

Figure: Overview of infant population in ISOSS 2009-18

RESULTS

- Overall **7% of infants were exposed to coinfection in pregnancy** (Figure): 4.7% (413/8832), 1.4% (126) and 1.4% (120) to HBV, HCV and syphilis respectively.
- Twenty were exposed to ≥1 coinfection: 4 HBV/HCV, 10 HBV/syphilis, 5 HCV/syphilis, 1 to all.

Most infants exposed to coinfections had mothers who were born abroad

Three-quarters from Sub-Saharan Africa and one in eight from Eastern Europe

Higher rate of pre-term delivery among pregnancies with coinfection

Congenital infection was reported in 0.8% infants: syphilis (3), HBV (1), HCV (1)

Table: Maternal characteristics & infant outcomes by coinfection exposure

	Non-coinfection-exposed (n=8196)	Coinfection-exposed (n=636)	p-value
Maternal timing of diagnosis			
Before pregnancy	6862 (83.7%)	516 (81.3%)	
During pregnancy	1334 (16.3%)	119 (18.7%)	0.107
Maternal median age (IQR)	33 (29,37)	33 (29,37)	0.96
Maternal region of birth			
UK	1278 (15.9%)	48 (7.6%)	
Abroad	6816 (84.1%)	584 (92.4%)	<0.001
Maternal mode of HIV acquisition			
Heterosexual	7405 (96.4%)	525 (89.1%)	
Injecting drug use (IDU)	39 (0.5%)	50 (8.5%)	
Vertical	143 (1.9%)	4 (0.7%)	
Other	91 (1.2%)	10 (1.7%)	<0.001
Maternal ethnicity			
Black African	6050 (73.9%)	463 (73.3%)	
White	1378 (16.8%)	134 (21.2%)	
Other	762 (9.3%)	35 (5.5%)	<0.001
Gestation at delivery			
<37wk	1006 (12.3%)	95 (15.0%)	
≥37wk	7190 (87.7%)	540 (85.0%)	0.048
Infant infection status			
Congenital infection	N/A	5 (0.8%)	
HIV infection	22 (0.3%)	2(0.3%)	0.88

HBV COINFECTION (4.7%, 95% CI: 4.2, 5.1%)

- **86% of infants were born to women of Black African ethnicity**
- **86%** born to women from **sub-Saharan Africa (SSA) and 4% UK**
- **96%** born to mothers with heterosexually **acquired HIV**
- Median maternal age 34 (30, 37)

SYPHILIS COINFECTION (1.4%, 95% CI: 1.1, 1.6%)

- **85%** of infants born to **Black African** women
- **79%** born to women from SSA and 7% from Eastern Europe, 6% UK
- **97%** born to mothers with heterosexually **acquired HIV**
- Median maternal age 35 (30, 37)

HCV COINFECTION (1.4%, 95% CI: 1.2, 1.7%)

- **79%** of infants were born to women of **White ethnicity**
- **46%** born to women from **Eastern Europe and 17% from SSA, 22% UK**
- **38%** born to mothers who **acquired HIV through IDU**
- Median maternal age 33 (28, 36)

CONCLUSIONS

- One in 14 infants born to WLWH in the UK are exposed to maternal co-infections, underscoring the importance of monitoring sexual health in pregnancy to allow for appropriate maternal/infant management and to reduce congenital infection risk and/or other adverse pregnancy outcomes.
- As ISOSS expands to monitor the other screened for infections in pregnancy (HBV and syphilis), greater insights will be provided into outcomes. Understanding the differences between the populations affected by these infections provides an opportunity to address vulnerabilities and barriers to care, and to further inform national guidelines and policy.

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