

National Study of HIV in
NSHPC
Pregnancy and Childhood

Unit variation in mode of delivery for HIV-positive women delivering in the UK

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Background

- Anecdotal reports from the UK suggest that some women believe they are less likely to be offered vaginal delivery at some hospitals than at others
- The French perinatal cohort found that women with a viral load (VL) <400 copies/ml delivering in Paris hospitals were significantly more likely to have a vaginal delivery than women delivering elsewhere (Briand et al, 2013)

Background

Guidelines for mode of delivery

- Pre-cART era: CS significantly decreased the risk of MTCT
- Since 2005 BHIVA pregnancy management guidelines have included planned vaginal delivery for HIV-positive women in UK with suppressed VL at term as an **option**
- 2012 BHIVA guidelines **recommended** vaginal delivery in women with suppressed VL
- International guidelines differ:
 - European: Vaginal delivery with varying VL thresholds (<50,<400)
 - US: Vaginal delivery if VL<1000copies/ml

Aim

To investigate the variation in mode of delivery for pregnant women living with HIV in the UK



National Study of HIV in Pregnancy and Childhood

Comprehensive observational surveillance in UK and Ireland since 1990

Complementary reporting schemes

- Obstetric reports
- Paediatric reports following up exposed children

No interventions, no enrolment, surveillance only

Substantial feedback to clinicians and HIV networks maximises coverage and case ascertainment (>95%)

Methods

- All deliveries to diagnosed HIV-positive women between 2009 and 2014, reported to NSHPC by end of 2015
- Excluded multiple birth pregnancies and those with missing mode of delivery or unit of delivery
- Population for analysis:
5248 women delivering in 198 UK units

Methods

Mode of delivery classified as:

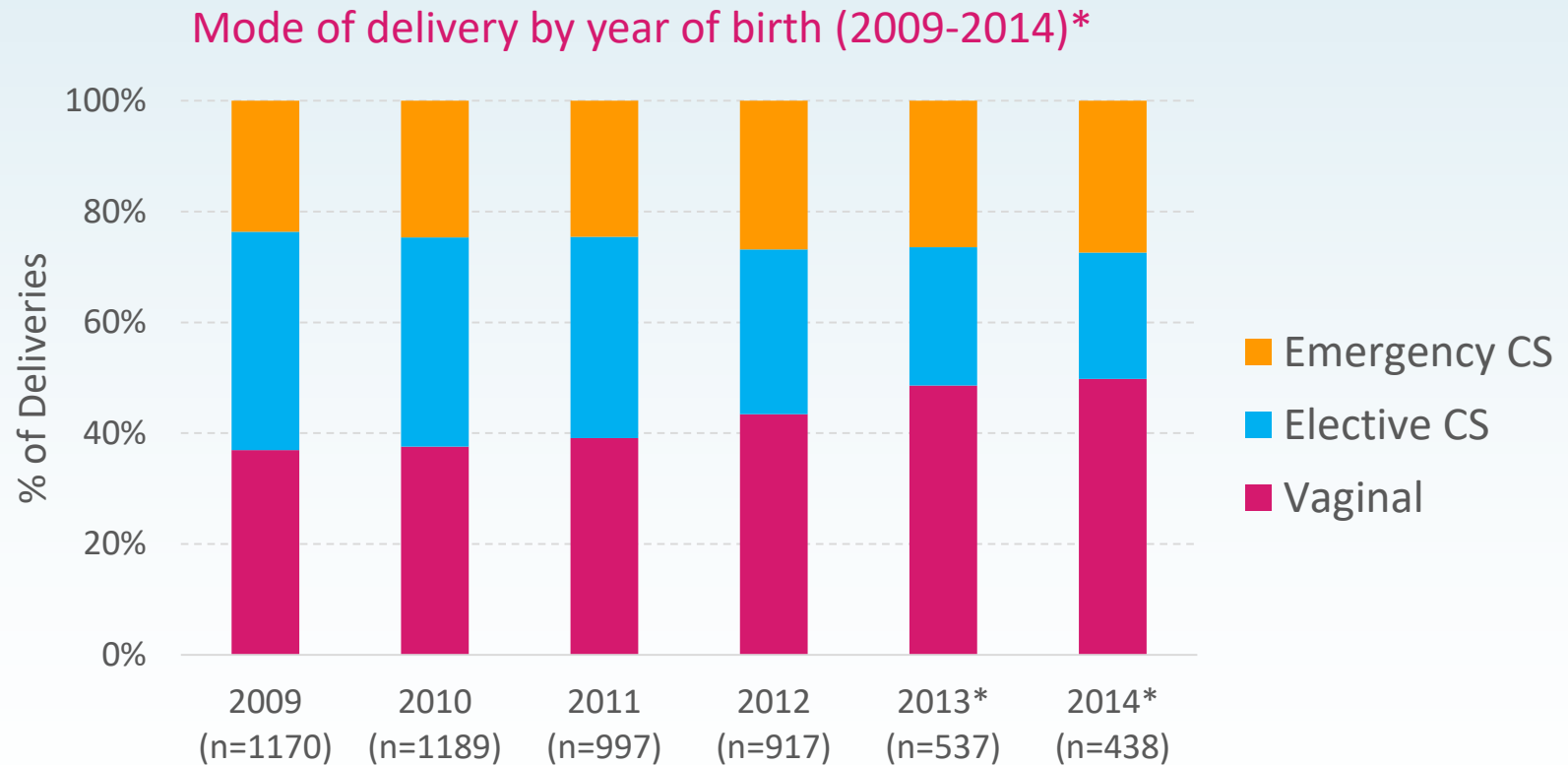
- Vaginal delivery, emergency caesarean and elective caesarean

Logistic regression was used to assess whether variation in vaginal delivery rates related to:

- Caseload (number of deliveries: <20, 20-49, 50-99, ≥ 100)
- Region (by strategic health authority)
- Pre-term delivery (<37 weeks)
- Delivery year
- Viral load closest to delivery

Results

Vaginal delivery increased by a third from 37% in 2009 to 50% in 2014 (n=5248)



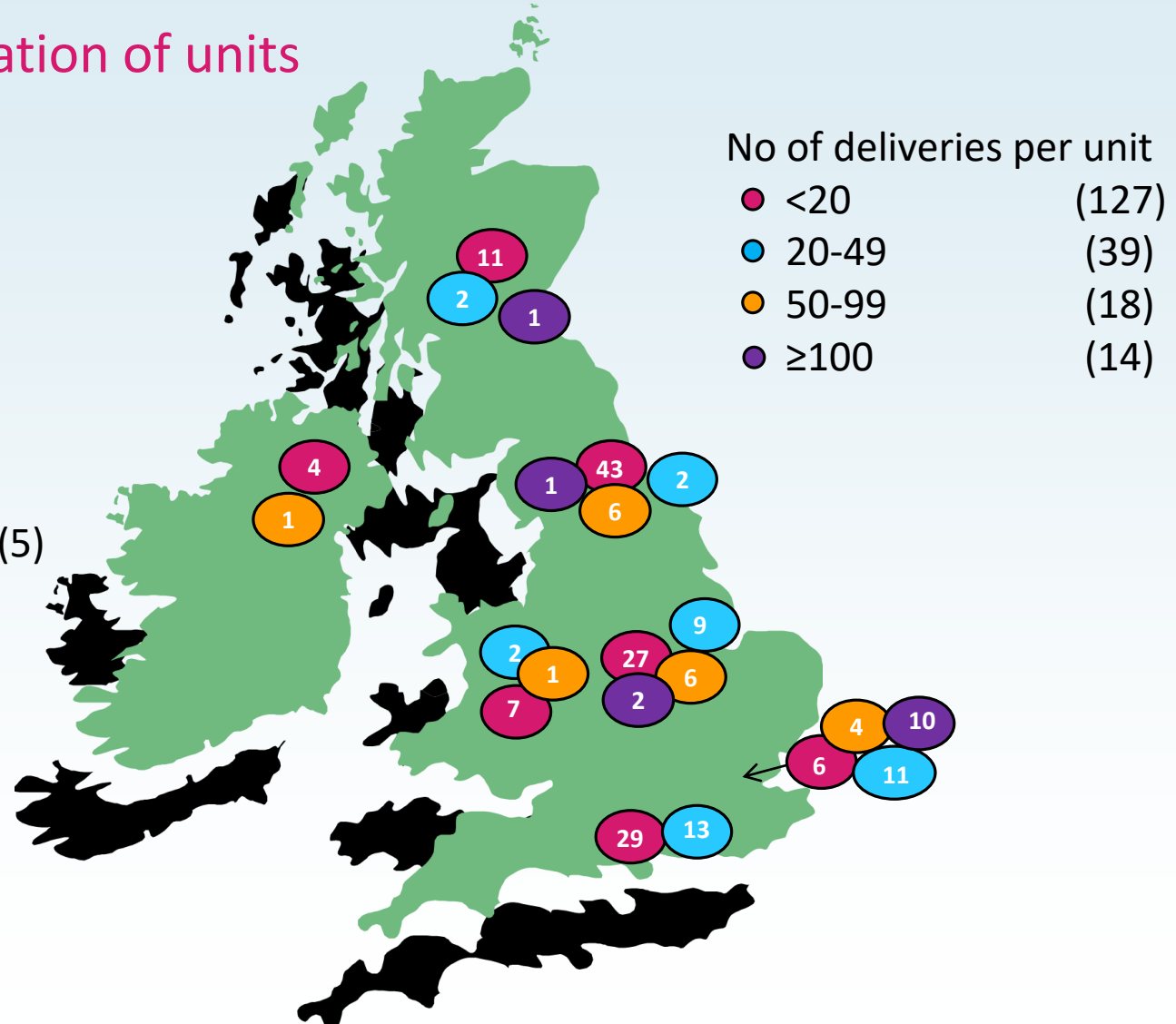
*All deliveries reported to NSHPC by end December 2015, data for 2013-14 incomplete

Results

Geographical location of units

198 units:

- North (52 units)
- South (42)
- Midlands (44)
- London (31)
- Scotland (14)
- Wales (10)
- Northern Ireland (5)



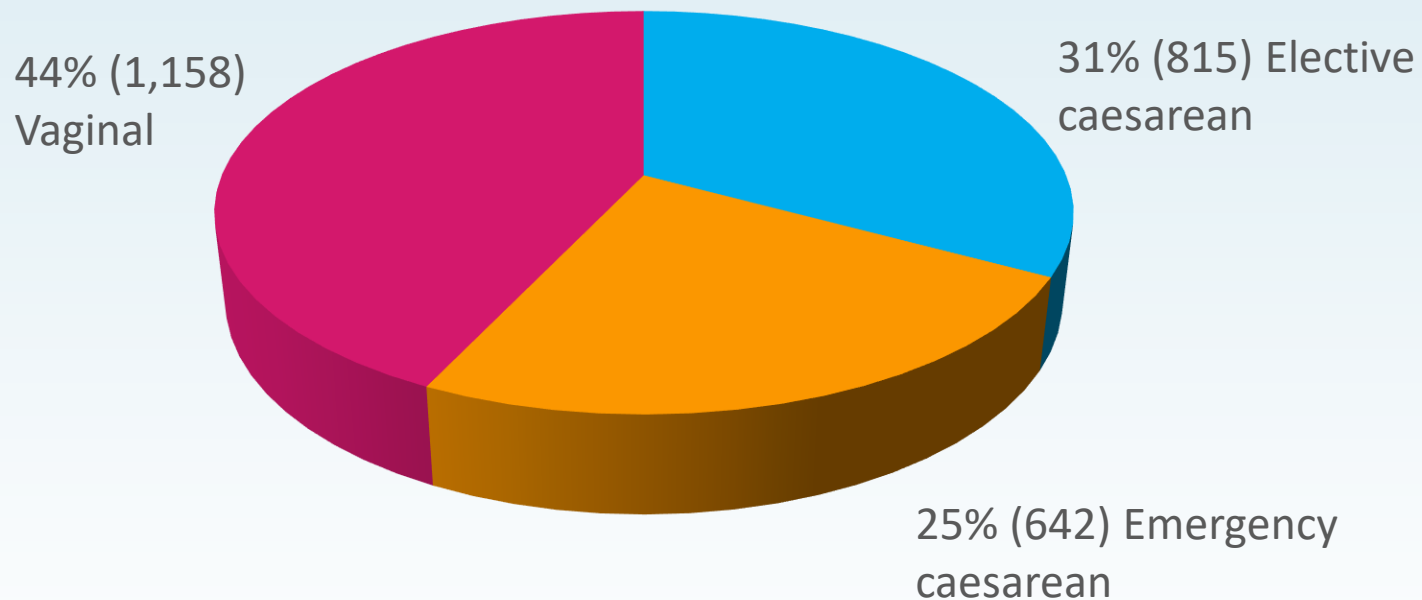
Results

Variation in mode of delivery

- Proportion of vaginal deliveries varied between units ($p < 0.001$) but no difference in emergency CS rates ($p = 0.57$)
- Vaginal delivery increased by 35% overall 2009-2014 ($p < 0.001$), although proportion of emergency CS deliveries was relatively stable over time ($p = 0.62$)
- **Significant variation between units remained among women with VL < 50c/ml ($p < 0.001$)**

Results

Women with suppressed virus (<50 copies/ml): 2009-14

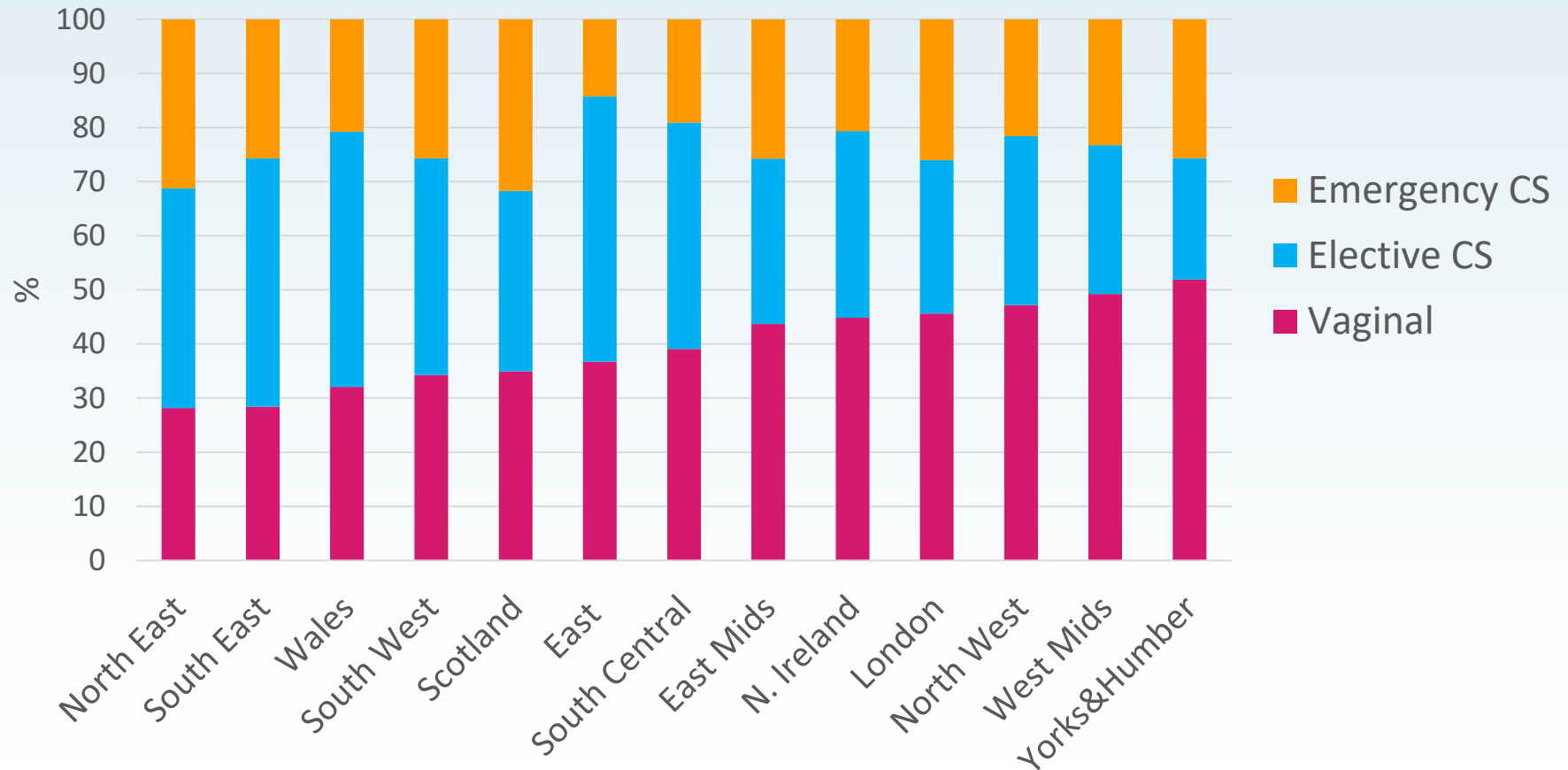


Significant variation in VD between units remained ($p < 0.001$)

- Median 39% (IQR 11%,54%)

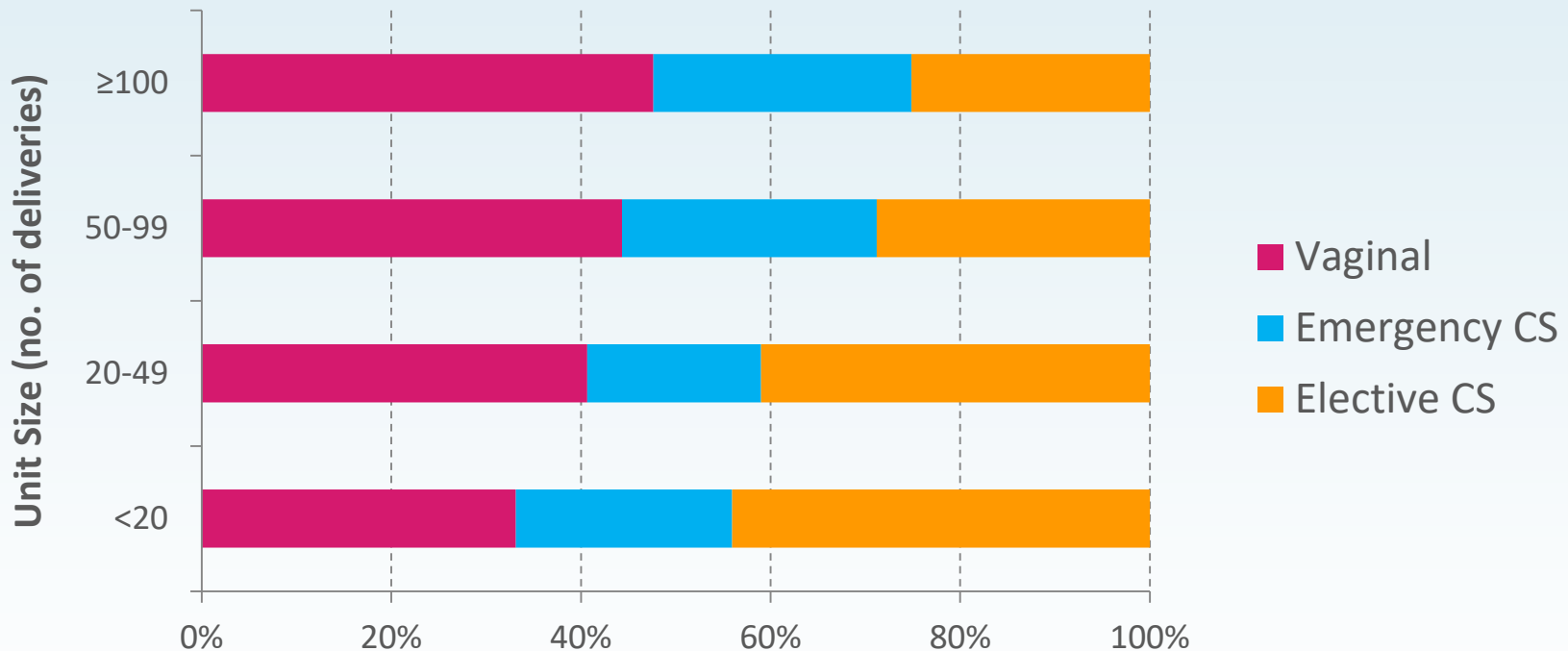
Results

Mode of delivery by region amongst women delivering with VL<50c/ml



Results

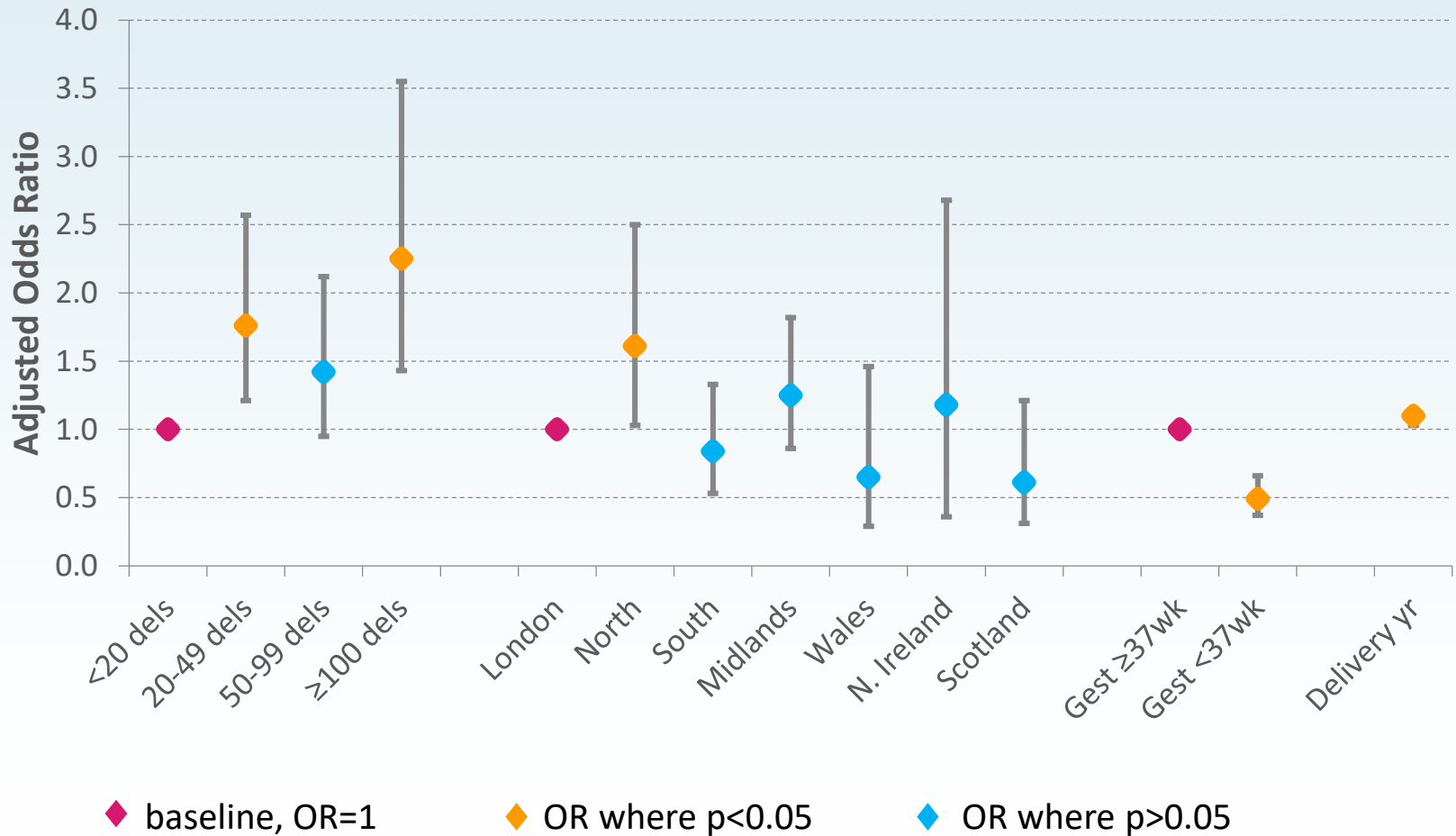
Mode of delivery by unit size to women with suppressed virus



Significant variation in mode of delivery across unit size ($p < 0.001$)

Results

Predictors of vaginal delivery among deliveries in women with VL<50c/ml



Results

Analysis repeated to allow for obstetric factors and case mix:

- Adjusting for parity and previous caesarean section produced similar results in terms of unit size and region
- Excluding smaller units (<50 deliveries) findings persisted

Comparison with national data

- Variation between units seen in HIV-population not apparent in national data (HES data)

Results

Summary of findings

- Variation in mode of delivery was explained by caseload, region, gestation
- Caseload had the greatest effect on outcome:
 - Women delivering at units with ≥ 100 deliveries significantly more likely to have a vaginal delivery, Adj OR 2.3 (95% CI 1.4, 3.6)
- Similar findings when excluding small units, and allowing for obstetric factors

Conclusions

- There appears to be wide variation in practice with respect to mode of delivery between units and regions, including among women with suppressed virus
- Possible explanations:
 - Reflection of local policy differences
 - Delay in implementing guidelines
 - Level of expertise within HIV units
- Further analysis:
 - Further exploration into medical reason for CS
 - Other factors influencing CS, e.g. socioeconomic

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