National Study of HIV in Pregnancy and Childhood

Regional variation in mode of delivery for women delivering with suppressed virus (2009-2013)

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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

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Comprehensive observational surveillance in UK and Ireland since 1990

Complementary reporting schemes

- Paediatric reports, clinics and **BPSU orange card**
- Obstetric reports, **RCOG approved scheme**

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 2013, reported to NSHPC by end of 2014
- Excluded multiple birth pregnancies and those with missing mode of delivery or unit of delivery
- Population for analysis:

  4282 women delivering in 195 UK units

Methods

Mode of delivery classified as:

- Vaginal delivery, emergency caesarean and elective caesarean

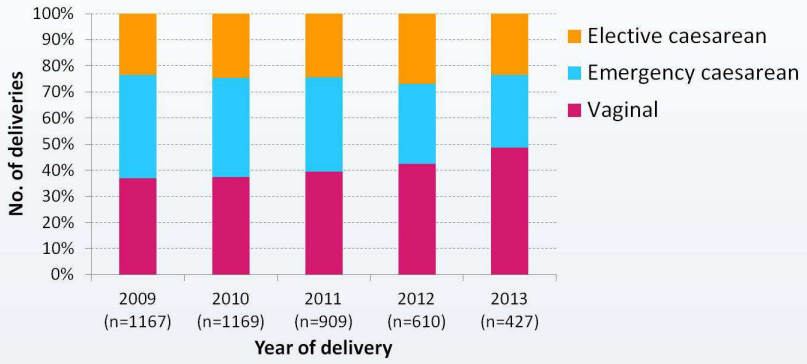
Logistic regression was used to assess whether variation in vaginal delivery rates related to:

- Caseload (number of deliveries: <20, 20-49, 50-99, 100-149, ≥150)
- 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 49% in 2013 (n=4282)

Mode of delivery by year of birth (2009-2013)*



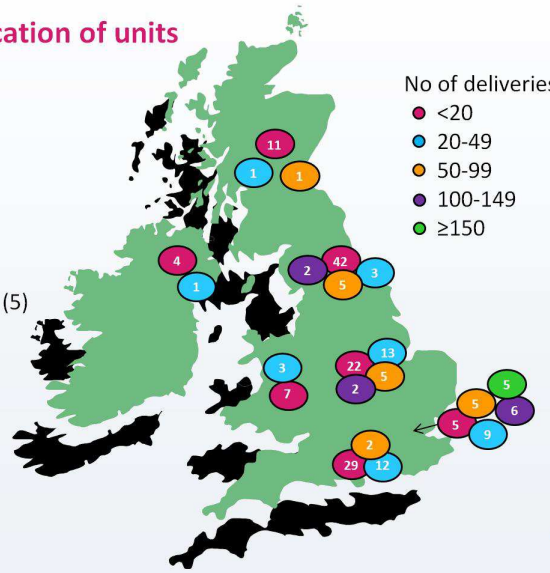
*All deliveries reported to NSHPC by end December 2014, data for 2012-13 incomplete

Results

Geographical location of units

195 units:

- North (52 units)
- South (43)
- Midlands (40)
- London (30)
- Scotland (13)
- Wales (10)
- Northern Ireland (5)



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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 33% overall 2009-2013 ($p<0.001$), although proportion of emergency CS deliveries was relatively stable over time ($p=0.62$)
- Similar pattern when excluding smallest units with <50 dels ($p<0.001$)

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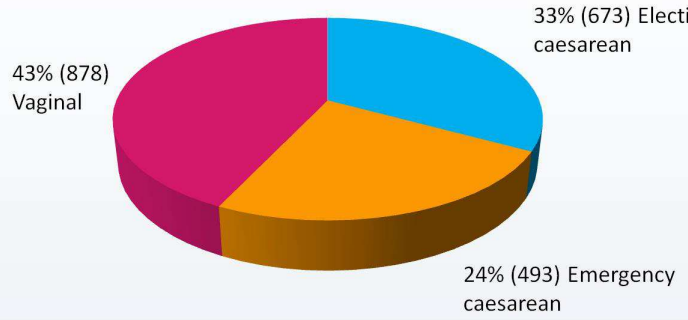
Results

Women with suppressed virus (<50 copies/ml): 2009-13

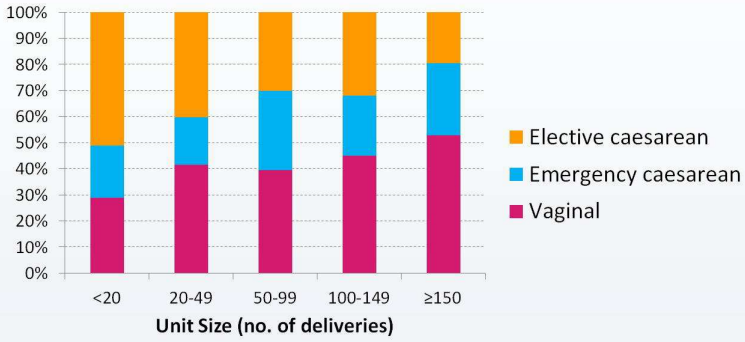


Significant variation in VD between units remained (p<0.001)

- Median 37% (IQR 0%,56%)

Results

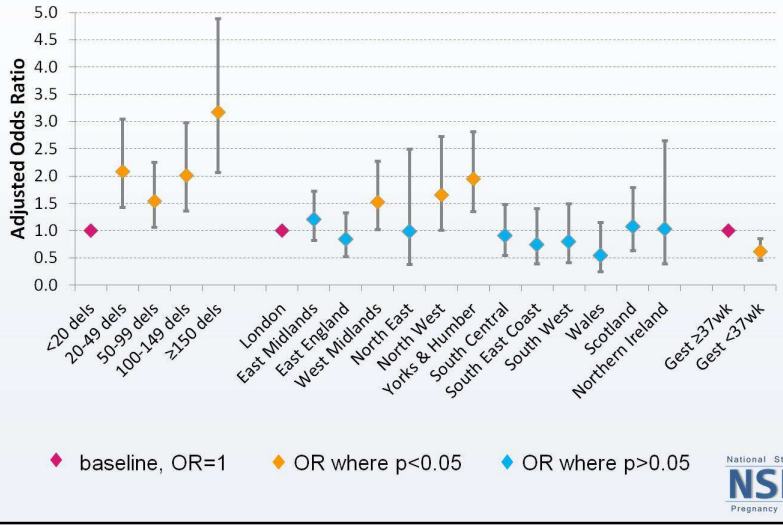
Mode of delivery by unit size to women with suppressed virus



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



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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 and <100 deliveries) findings persisted

Comparison with national data

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

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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 ≥150 deliveries significantly more likely to have a vaginal delivery, Adj OR 3.2 (95% CI 2.1, 4.9)
- Similar findings when excluding small units, and allowing for obstetric factors

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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:
  - Investigation into indication for CS (medical/obstetric)
  - Update with complete data for 2012/13

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