

# Caesarean section trends among 48 688 women living with and without HIV in Brazil: a cohort study

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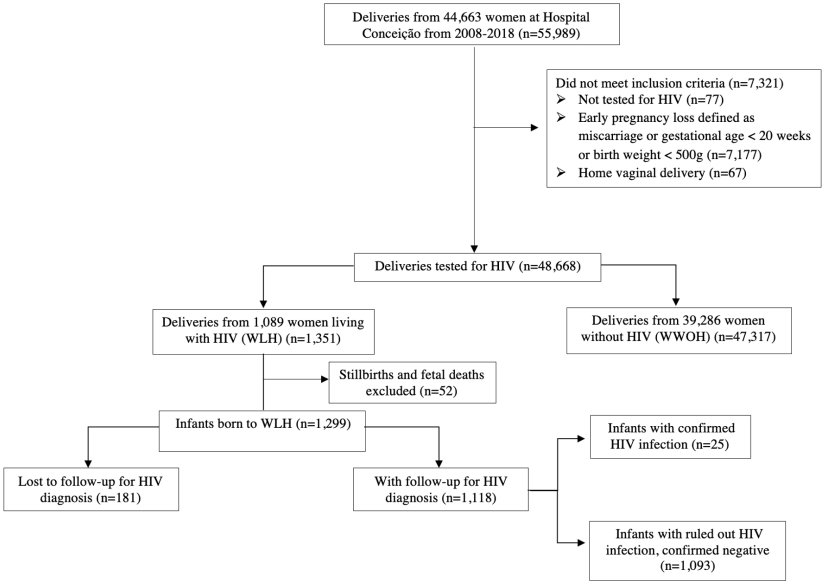
## Abstract

Objective: To evaluate caesarean section (CS) rates in women with and without HIV and frequency of mother-to-child HIV transmission. Design: Retrospective cohort study. Setting: Tertiary hospital in south Brazil, epicenter of the country's HIV epidemic. Population or Sample: Women-infant pairs delivering at one institution between 1/1/2008 to 12/31/2018 Methods: Data was extracted from hospital records CS frequencies were compared using Pearson's chi-squared test. CS predictors were evaluated by multivariate log-linear Poisson regression using a generalized estimating equations approach. HIV viral suppression (VS) was defined as virus load (VL) of <1000 copies/ml at delivery. HIV MTCT was determined according to national guidelines. Main Outcome Measures: C-section, HIV mother-to-child transmission (MTCT). Results: Over 11 years, 48,688 pregnancies occurred in 40,375 women; HIV seroprevalence was 2.7%; 18,886 (38.8%) CS were performed; 47.7% of WLH and 38.6% of women without HIV (WVOH) had CS,  $p < 0.001$ . Although HIV was a risk factor for CS (aRR: 1.17 [1.05-1.29]), WLH with VS achieved similar CS rates (36.7%) as WVOH (39.8%) by 2018. CS in WLH with unknown VL at delivery (42.6%) did not increase over time. HIV MTCT rate was 2.2%, highest in WLH with unknown VL (8.4%) versus WLH without VS (4.1%) and WLH with VS (0.5%;  $p < 0.001$ ). Conclusion: In the HIV epicenter of Brazil, WLH with VS had less surgical deliveries, likely due to potent combination antiretroviral use. Nearly half of WLH with unknown VL, did not undergo CS, a potential missed opportunity for HIV PMTCT.

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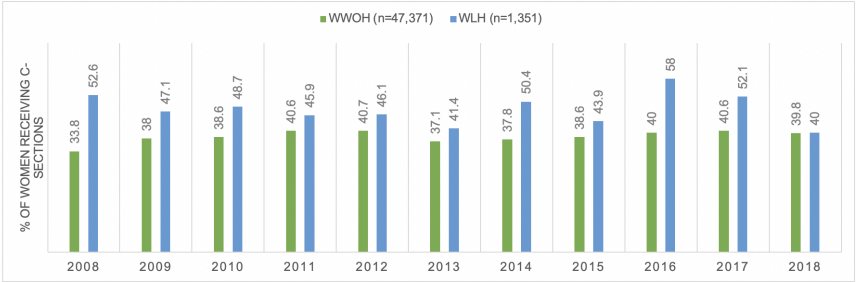
Yang\_Csection\_Main Document HTML proof.docx available at <https://authorea.com/users/509600/articles/586947-caesarean-section-trends-among-48-688-women-living-with-and-without-hiv-in-brazil-a-cohort-study>

**Figure 1.** Flow diagram of cohort selection and exclusion criteria.

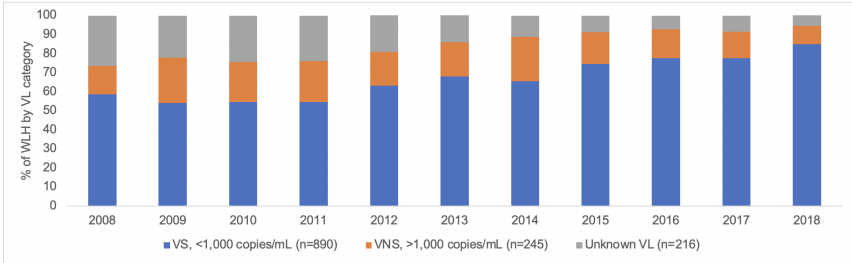


**Figure 2.** C-section rates (CS) between women living with HIV (WLH) and women without HIV (WVOH) and viral suppression trends among WLH, 2008-2018.

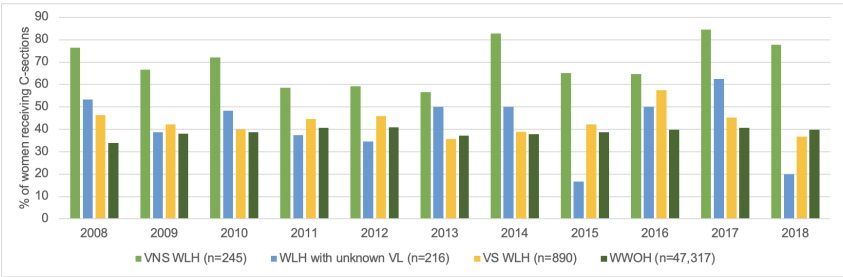
**Figure 2A.** Overall CS rates between WLH and WVOH stratified by year of delivery (n=48,668).



**Figure 2B.** Trends in viral suppression and viral load status at delivery among WLH stratified by year of delivery (n=1,351).

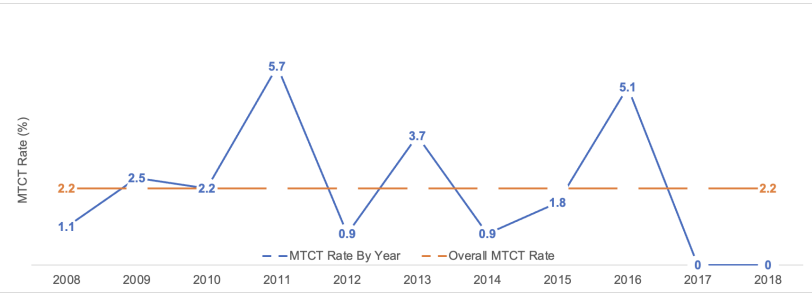


**Figure 2C.** CS rates between WLH with VS, without VS, unknown VL and WWOH stratified by year of delivery (n=48,668).



**Figure 3.** Mother-to-child transmission (MTCT) rates stratified by viral load (VL) status at delivery among infants with diagnostic follow-up, 2008-2018 (n=1,118).

**Figure 3A.** Overall HIV MTCT rate stratified by year of delivery.



**Figure 3B.** HIV MTCT rate stratified by VL status at delivery and year of delivery.

