1. Background

- Health systems imperfections continue to lead to preventable HIV vertical transmission in many countries.
-South Africa is the highest HIV burden country in the world.
-Overall HIV prevalence of pregnant women in rural South Africa is ~30%

2. Methods

The MONARCH trial (NCT02626351) was a stepped-wedge cluster randomised controlled trial conducted in northern KwaZulu-Natal, South Africa, from July 2015 to January 2017. Ethical approval was obtained from the University of KwaZulu-Natal Biomedical Research Ethics Committee. A Stepped-Wedge Cluster RCT.

3. Participant flow

- HIV VL outcome: (CQI exposed and unexposed): 1027 women, including seroconverters, analysed
- Revise HIV screening outcome (CQI exposed and unexposed): 1146 women with an initial negative HIV test analysed

4. HIV prevalence by age

- Overall HIV prevalence including seroconverters was 47.5% (95% confidence interval, CI 45.4-49.6%).
- Median maternal age: 25 years (interquartile range, IQR: 21-30)
- Median gestational age at 1st antenatal booking visit: 19 weeks (IQR 15-24)

5. Outcome descriptions

- HIV-positive pregnant women (n=1027)
  - ART coverage at any stage was 92.9% (95% CI 91.9-94.3%).
  - 55.4% (95% CI 48.7-61.9%) of HIV-positive pregnant women had a VL performed ever in pregnancy.
  - 52.2% had a result documented, of which 85.5% (95% CI 78.0-90.7%) were <200 copies/mL.
  - 38.8% (95% CI 33.2-44.6%) had a VL performed within 3 months of delivery.
  - 38.0% had a result documented, of which 84.9% (95% CI 78.9-89.7%) were <200 copies/mL.
  - HIV-negative pregnant women (n=1146)
  - 17/1146 women with an initial negative HIV test seroconverted to HIV (1.5%, 95% CI 0.9-2.4%).
  - 66.9% of women (95% CI 58.9-74.1%) with an initial negative HIV test had at least 1 repeat HIV screen in pregnancy.
  - 63.4% (95% CI 55.4-70.6%) had a repeat HIV test within 3 months of delivery.

6. Impact of CQI on PMTCT processes

- VL outcome:
  - Those exposed to CQI vs. those unexposed: aRR = 1.42 (p=0.016)
  - Repeat HIV screening outcome: those exposed to CQI vs. those unexposed: aRR = 0.89 (p=0.283)

7. Conclusions

- CQI had a positive impact on increasing HIV VL testing but not repeat HIV screening after adjusting for secular trends and gestational age.
- However overall VL and repeat HIV screening rates fall well short of expected targets needed for virtual elimination of MTCT (eMTCT).
- VL suppression rates in those with documented results were encouraging, although results documentation was often incomplete.
- Poor results documentation raises concerns about missing pregnant women with virological failure.
- Achieving eMTCT in this high HIV prevalence setting is likely to require concurrent health systems improvements.
- Long term sustainability of CQI in resource-limited settings is unknown and requires further study.