ART-Related Changes in Fertility at the Population Level in rural Malawi, 2003-2013

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**BACKGROUND**

- Fertility rates are declining in rural Africa
  - Family planning
  - Increased child survival
  - HIV pandemic

In South Africa, the reduction due to HIV was thought to be small and the biggest driver was contraception.

In Zimbabwe an estimated 24% of the national decline was attributable to the HIV epidemic.
HIV AND FERTILITY

Positive association

- Sexuality active women not using condoms are most at risk of HIV acquisition and of pregnancy (if not using any other contraception)

Negative association

- Social
  - Widowhood or reduced chance of marriage
  - Choose to have fewer children
  - Societal disapproval

- Biological
  - Direct effect
  - Other STIs
  - General debilitation

- HIV+ women have longer birth intervals, more common miscarriage or birth complications and fewer children overall than HIV- women.

- Use of ART increases fertility in HIV+ women.
STUDY AREA

- Rural area of Malawi
- Child-bearing expected soon after marriage and relatively large family sizes are the norm
- HIV prevalence estimated to be 6-7%
- ART available in the district in 2005, at the local hospital in 2007 and rolled out to peripheral clinics in 2010.
- Option B+ introduce in 2011: all HIV+ pregnant or breast-feeding women eligible to start life-long ART

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- HDSS of nearly 40,000 since 2002
- Vital events captured monthly & in-/out-migrations annually
- Marital status/education/employment annually
- Four HIV serosurveys 2007-2011
- ART users identified and linked to HDSS

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ASSIGNING PERSON TIME

Age 15 OR In-migration

Self-report: HIV-

Study test: HIV+

Clinic ART start

Last known on ART

Age 50 OR 2013 OR Death OR Out-migration

NEGATIVE UNK POSTIVE

NO ART ON ART UNK
RESULTS

Total fertility rate by year and HIV status

- ART started becoming available
- HIV negative
- HIV positive
- Overall

- 2004-5: 5.0
- 2006-7: 4.4
- 2008-9: 3.7

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RESULTS

Age-specific fertility rates by HIV/ART status

ART available early (2007-2009)

- Wide CI cut-off at 500
- High rate based on only 2 births

ART not available (2003-2006)

INDEPTH Network
RESULTS

With Option B+ should be 0 births to HIV+ women not on ART. There were 18: 2 started ART but stopped before the birth, 7 started ART the same day as the birth, 7 started ART 4-12 months after the birth, 6 have no known ART start date.
LIMITATIONS

Total fertility rate by year and HIV/ART status

- HIV status unknown
- HIV negative
- HIV positive on ART
- HIV positive not on ART
- HIV positive unknown ART
- Overall
CONCLUSIONS

- Fertility rate has decreased overall and, although there has been an increase in the fertility rate in HIV positive women corresponding to the availability of ART in the area, up to 2012/13 the fertility rate was still lower in HIV+ women than HIV negative.

- Fertility rates in women on ART have increased to closer to those of HIV negative women.

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IMPLICATIONS

- With ART available can expect fertility in HIV+ women to be similar to HIV- women
- With test & treat policies coming soon more women will be on ART for longer
- May lead to more HIV-exposed infants who require more intense follow-up
- Long term effects of foetal exposure to ART are not known
THANK YOU

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