Impact of integration on HIV testing outcomes in FP and PNC cohorts in Kenya

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Study design

- Quasi-experimental study design in FP and PNC clinics
- Cohort studies in:
  - FP clinics (Central Province): 6 intervention & 6 comparison facilities
  - PNC clinics (Eastern Province): 6 intervention & 6 comparison facilities
- Intervention to strengthen integration took place in late 2009/early 2010
- Intervention facilities ‘pair-matched’ to comparison facilities in same province with similar socio-economic characteristics, health infrastructure, and contraceptive and HIV prevalence
Methods

- Women (15+) followed for 24 months after baseline interview:
  - r0: Baseline
  - r1: +6 months
  - r2: +18 months
  - r3: +24 months

- Women (15+) recruited and interviewed at facility at baseline, exiting from FP/PNC consultations
  - Repeat FP clients
  - Post-natal clients within 10 weeks post-partum

- Follow-up interviews at home or facility
- Consecutive sampling at exit
Research objective

- Does exposure to integrated health care impact on uptake of HIV testing over the 2 year cohort?

HIV testing uptake defined as:
- woman receives a minimum of 2 tests over the course of the 24 month cohort
OR
- one test if she becomes HIV positive during the cohort
Research questions

Is HIV testing uptake over the study period positively associated with:

1) the study intervention to strengthen integrated care (mentorship, BCS+)?
2) an individual woman’s receipt of integrated RH-HIV services at baseline (r0)
3) the level of integration at the recruitment facility at baseline?
4) whether the recruitment facility becomes more or less integrated over 2 year study period?
5) an individual woman’s exposure to integrated care across the 2 year cohort period?
5 exposure definitions:

1) Intervention/comparison (design group)

2) Individual woman’s receipt of integrated RH-HIV services at baseline (r0)
   - RH services: FP, MCH
   - HIV services: testing, HIV counselling, treatment, STI
     (excludes tests at r0 in outcome measure)

3) Baseline IMPLEMENTATION index score - (measured by client flow tool) (r0) (low/medium/high)

4) Changes in index score over 2 year study period - (always low, low to high, high to low, always high)

5) Cumulative index exposure (additive score including subsequent visits at study clinics and other facilities)
Population

- Excludes women without complete 4 rounds of data
  - FP n=842/1959, 43%
  - PNC n=595/1385, 43%

- Excludes HIV+ women diagnosed before R0
  - FP n=245/1959, 12.5%
  - PNC n=42/1385, 3.0%
Statistical analysis

- Descriptive analysis using Chi²
- Conditional logistic regression modelling to test association between integration and HIV testing:
  - account for pair-matching between facilities
  - Control for confounding in sample, including socio-demographic, geographic, SRH behaviours and status variables
  - All conceptually-related variables included in the models
HIV testing totals

- 15 FP and 4 PNC women sero-converted (reported) during cohort.
- In total, 90% FP clients and 87% PNC clients reported at least 1 test during the course of the cohort.
Receipt of recommended HIV tests by different integration exposure definitions (FP cohort)

- Individual's cumulative exposure to integrated care***
  - High
  - Medium
  - Low

- Changes in index score*
  - Always high
  - High to low
  - Low to high
  - Always low

- Baseline index score***
  - High
  - Medium
  - Low

- Individual's receipt at baseline**
  - Got intgt. services
  - No intgt. svcs

- Design group*
  - Intervention
  - Comparison

Percent of women achieving testing goals

* p<0.05  ** p<0.01  *** p≤0.001
Receipt of recommended HIV tests by different integration exposure definitions (PNC cohort)

- Individual's cumulative exposure to integrated care
  - High
  - Medium
  - Low

- Changes in index score
  - Always high
  - High to low
  - Low to high
  - Always low

- Baseline index score
  - High
  - Medium
  - Low

- Individual's receipt at baseline
  - Got intg. services
  - No intg. svcs

- Design group
  - Intervention
  - Comparison

* *p<0.05 ** *p<0.01 *** *p≤0.001
Adjusted models

- **FP cohort:**
  - Effect of cumulative index score on HIV testing
  - Effect of individual’s receipt at baseline on HIV testing

- **PNC cohort:**
  - Effect of cumulative index score on HIV testing
  - Effect of design group (intervention) on HIV testing

Models adjusted for: age, marital status, education, SES score, no. sex partners (12 mo), no. previous pregnancies, became pregnant over cohort, condom use last sex/condom user, time taken to reach clinic
Summary of adjusted analysis - FP & PNC models

**FP model:**
- Cumulative index score
- Individual’s receipt of integrated services baseline

**PNC model:**
- Cumulative index score
- Design group

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**FP model:**
- Low
- Medium (cOR 1.87, aOR 2.22)
- High (cOR 2.77, aOR 3.49)

**PNC model:**
- Low
- Medium (cOR 1.39, aOR 1.50)
- High (cOR 2.25, aOR 2.61)

**Comparison**
- Intervention (cOR, 1.46, aOR 1.45)
Limitations

- Inconsistent recording of intervening facility visits (more information captured at r1)
- Selection bias - unmatched records and loss to follow up - effect may have been underestimated as a result
- Reporting bias - people may increasingly report HIV testing the more they are asked about it
- Recall bias - people struggle to remember dates of tests
- Visits to non-study clinics not captured in cumulative index score, e.g.:
  - FP cohort: 14% FP visits round 2, 16% round 3
  - PNC cohort: 19% FP visits round 2, 25% round 3
Conclusions: does integration have an impact on HIV testing uptake?

- Evidence mixed:
  - Intervention had small effect (with weak evidence) only in PNC cohort.
  - Baseline index score or changes in index over time have no effect (facility-level integration score).
  - In both cohorts, a woman’s individual cumulative exposure to integrated care over time (measured by the index) increases testing uptake.
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