

PMTCT Implementation in Rural Community Health Centres in Mpumalanga Province, South Africa

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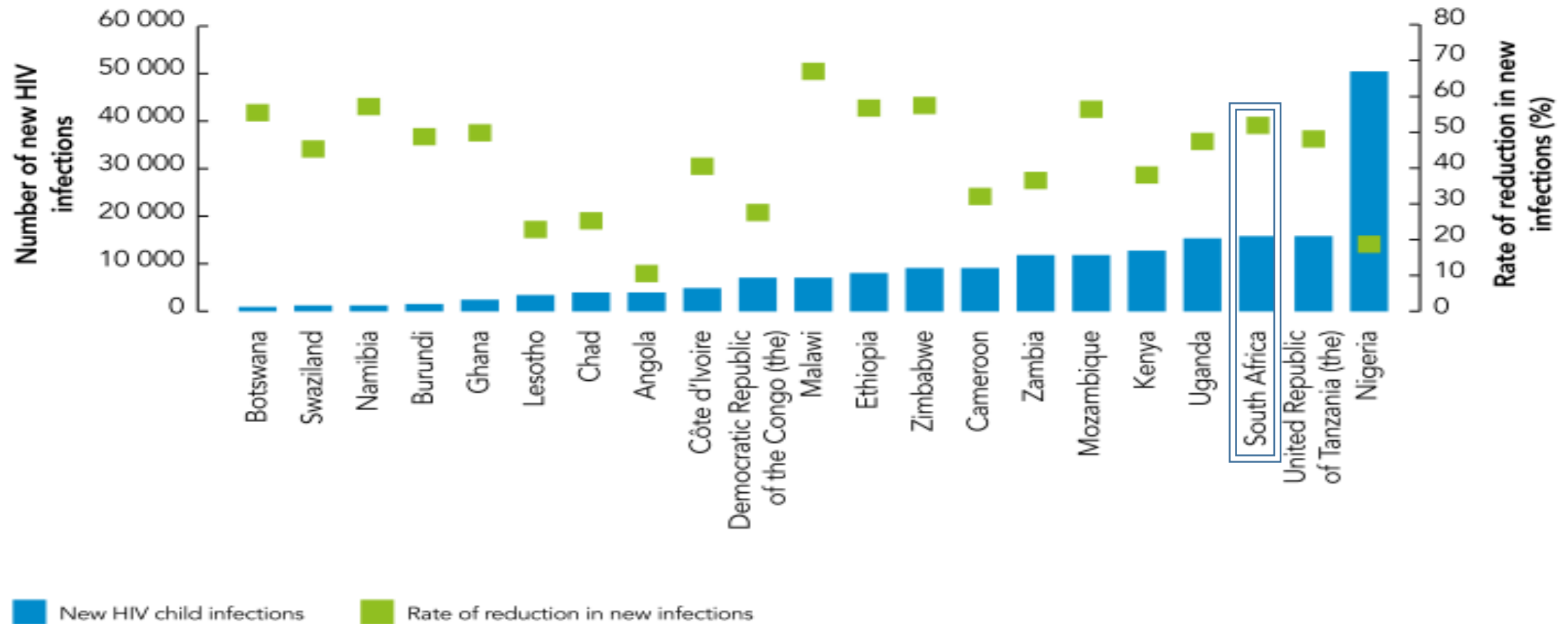
Overview

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- Challenges / Strategies for PMTCT uptake
- AIMS / Implementation Science
- Study Setting & Participants
- Measures/ Data Analysis
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- Discussion and Study Limitations

Disclosure: No conflicts of interest

Background

Number of new HIV infections among children in 2013 and rate of reduction in new infections since 2009 in the 21 Global Plan priority countries



Source: www.hiv.health.gov.mw/index.php/component/tags/tag/10-gap-report

Background

- PMTCT programs have reduced mother to child transmission of HIV (MTCT) to < 5% in many regions of South Africa
- Rural Mpumalanga, South Africa maintains high rates of MTCT due to patient, socioeconomic, cultural infrastructure barriers to PMTCT program uptake.
- Gaps in implementation and uptake of the PMTCT protocol in South Africa occur at all stages of the ante-, peri- and postnatal process
- One third of rural South African pregnant women living with HIV did not utilize available PMTCT services while attending an antenatal clinic (ANC)
- Strategies that promote fidelity and coverage of the PMTCT protocol are needed to maintain optimize program outcomes in rural community health centers

Identified challenges to PMTCT uptake

- Poor clinic documentation
- Uneven staff training and staff shortages
- Lack of on-site HIV testing/stockouts
- Delayed ART initiation before conception/stockouts
- Reluctance to test infants/children for HIV
- Low uptake of HIV testing by male partners/reliance on women's status
- Low health literacy



Proposed strategies to increase PMTCT uptake

- Peer education
 - Participating HIV-infected mothers as counsellors and mentors
- Counseling support for PMTCT retention and adherence
- Increased male partner involvement (MPI)
- Additional community care workers and clinic staff for infant follow-up
- Screening for gender based violence
- Guidance for infant feeding



Study Aims

- Use Implementation Science methodologies to -
- Identify solutions to challenges to uptake of the PMTCT protocol
- Apply solutions to implementation of the PMTCT protocol
 - Reduce vertical transmission in rural areas



Implementation Science methodologies

“Implementation Science (methodology) aims to investigate and address major bottlenecks that impede effective implementation and to test new approaches to identifying, understanding, and overcoming barriers to the adoption, adaptation, integration, scale-up, and sustainability of evidence-based interventions.”

Evidence based intervention: PMTCT Protocol



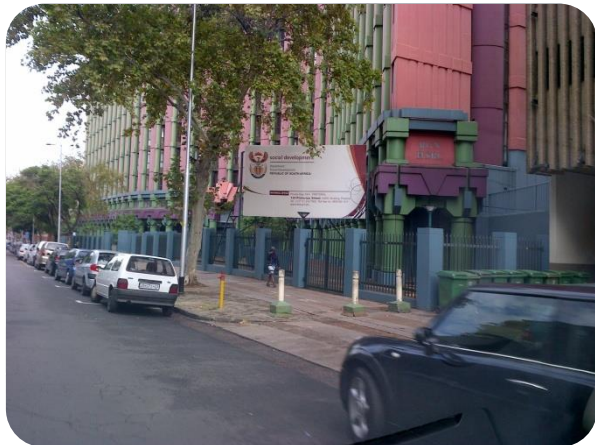
Study Hypotheses

- Staff and organizational factors would impact PMTCT uptake
- Staff, patient and organizational reports could be used to inform overall PMTCT delivery to increase its public health impact



Study Setting & Participants

- Antenatal clinics (ANCs) (n = 12) in rural communities within the Gert Sibande and Nkangala Districts in Mpumalanga Province with high rates of vertical transmission of MTCT ($\geq 13\%$)
- Participants (n=120) 10 from each clinic, represented clinic leadership, nursing and healthcare staff providing PMTCT/PEPFAR services
- Pregnant women receiving services (n = 673)



Measures – Clinic Staff

Audio computer assisted survey instrument (ACASI) was used to accommodate all levels of literacy, reduce social desirability bias, and enhance confidentiality

Demographics

Adapted Evidence-Based Practice Attitude scale

Adapted Barriers to Research Practice Scale

Adapted Practitioner Attitudes and Organizational Barriers Scale

Copenhagen Burnout Inventory

Readiness for organizational change scale



Measures – Clinic Staff, Patients & Site

- PMTCT protocol implementation - staff assessment (n = 120)
- PMTCT protocol implementation - patient assessment (n=673)
- Medical record extraction of patient data (n=301) in 6 ANCs
- District health reports on PMTCT critical indicators from 12 ANCs



Demographics

- Clinic staff (n = 103)
 - Operational managers/sisters in charge (n =10)
 - Nurses (n=56)
 - Lay counsellors (n=37)
- Staff were on average 38 ± 9 years of age); 86% women
- 55% of staff had received a diploma
- Median monthly income of 7,862 South African Rand (~506 US dollars)
- Patients (n = 673)
 - HIV seropositive
 - 46% previously diagnosed
 - 28 ± 5 years of age
 - 12% employed

Results

- Clinic staff differed by relative rank in their perception of organizational barriers
- Management was most positive about the protocol, and perceived the least barriers to implementation, followed by nurses and counsellors

Characteristic	Overall (N = 103) m(sd)	Management (n = 10)	Nurse (n = 56)	Counsellor (n = 37)	F, p
Willingness to adopt EBPs	39.74(8.1)	45.10(7.3)	39.75(7.9)	38.27(8.1)	2.92, .059
Barriers to research uptake	44.22(21.6)	32.00(10.7)	43.29(19.1)	48.95(25.8)	2.62, .078
Practitioner attitudes and organizational barriers	32.61(7.0)	27.00(8.7)	31.64(6.3)	35.59(6.2)	8.19, <.001
Burnout	45.01(10.3)	42.80(9.7)	46.32(11.1)	43.62(9.0)	1.03, .362
Readiness for Change	222.77(31.5)	233.70(26.0)	223.09(32.9)	219.32(30.9)	0.82, .443
PMTCT protocol total	84.87(8.7)	86.40(5.2)	85.34(7.0)	83.76(11.5)	0.53, .591

Results – 14 PMTCT Critical Indicators

- Staff, patient and clinic data disagreed on achievement of indicators
- Gaps in PMTCT coverage included
 - delivery at the clinic (median = 48%)
 - medication adherence (median = 66%)
 - disclosure of serostatus (median = 60%)
 - partner HIV testing (median = 37%)
 - condom use (median = 50%)
 - discussion of future pregnancies with health care providers (median = 48%)

STAFF - Perceived achievement of PMTCT protocol element	Mean(SD)	CLINIC – Actual achievement of PMTCT protocol element	Clinic Min-Max, Median
Attending >= 4 antenatal clinic visits	N/A	Proportion attending >= 4 antenatal clinic visits	38%-96%, 61%
Total PMTCT protocol implementation scale score	84.87(8.7)	Not reported	-
HIV testing for all pregnant women of unknown status	3.85(0.5)	Not reported	-
Provision of ART immediately following diagnosis or entry to ANC	3.81(0.7)	Rate of ART prescription immediately following diagnosis or entry to ANC	54%-100%, 89%
Counselling on the risk of contracting/transmitting HIV during pregnancy, adherence to HIV medication	3.84(0.5)	Proportion using condoms at last sex	38%-67%, 50%
		Proportion of women with at least one missed dose in past 7 days	27%-97%, 66%
		Rate of HIV re-testing at 32 weeks gestation	25%-100%, 81%
HIV retesting at 32 weeks for women testing negative	3.85(0.5)		
Testing of women of unknown HIV status during labour	2.96(1.4)	Not reported	-
HIV retesting every 3 months during breastfeeding	3.37(1.1)	Not reported	-
HIV retesting 1 year postpartum	2.76(1.4)	Not reported	-
Counselling on PMTCT, protecting male partners, healthy pregnancy	3.81(0.6)	Proportion discussing PMTCT with provider	51%-98%, 88%

STAFF - Perceived achievement of PMTCT protocol element	Mean(SD)	CLINIC – Actual achievement of PMTCT protocol element	Clinic Min-Max, Median
Counselling on male partner involvement	3.60(1.0)	Proportion of disclosure of serostatus to partner	40%-76%, 61%
		Proportion of male partners tested for HIV	26%-64%, 36%
Counselling on the importance of delivering the baby at the CHC	3.90(0.4)	Rate of infant delivery at the CHC	25%-100%, 57%
Provision of ART during labour/delivery, including those who deliver before arrival	3.16(1.5)	Proportion of women receiving ART during labour or immediately following	4%-100%, 66%
Provision of nevirapine (NVP) to newborns immediately following birth	3.86(0.6)	Rate of nevirapine administration to infants at birth	100%
Counselling on exclusive breast/formula feeding	3.91(0.4)	Proportion of infants exclusively breastfeeding or formula feeding	100%
Supplying mothers with 6 weeks of NVP for their newborns	3.90(0.5)	Not reported	-
Issuing all new mothers with “Road to Health” booklets	3.76(0.8)	Not reported	-
HIV PCR testing of infants at 6 weeks postpartum	3.80(0.7)	Proportion of infants with 6-week PCR test	78%-94%, 90%
Rapid HIV testing of all infants at 18 months of age	3.75(0.8)	Rate of infant 18 month rapid testing	47%-100%, 100%
Retesting infants who are symptomatic at any age	3.60(0.7)	Not reported	-
Supplying ART to all infants who test positive	3.77(0.7)	Not reported	-
Counselling on family planning and contraception	3.82(0.6)	Proportion of women discussing future pregnancy with provider	19%-75%, 48%
Counselling on safer conception practices for future pregnancies	3.50(1.1)		
Treatment for TB and other opportunistic infections	3.83(0.6)	Not reported	-
Offering nutritional support to new mothers, if needed	3.54(1.0)	Not reported	-

Comparison between Clinic Characteristics and Critical Indicators of PMTCT uptake Low and High Clinic Scores: District Data

- CHCs were divided into HIGH and LOW performance on PMTCT implementation
 - how well they implemented critical PMTCT indicators (based on District report)
- Performance on critical PMTCT indicators did not differ by Clinic Characteristics

Variable	Low clinic score (n = 32)	High clinic score (n = 63)	t value, p value
	M (SD)	M (SD)	
Willingness to adopt EBP	38.7 (7.8)	40.7 (8.0)	1.15, 0.254
Barriers	49.3 (21.0)	43.2 (21.7)	1.33, 0.188
Organizational Barriers	32.5 (7.8)	32.3 (6.9)	0.16, 0.874
Burnout	47.9 (10.8)	44.4 (9.7)	1.58, 0.116
Readiness for change	225.1 (33.1)	224.5 (29.5)	0.09, 0.932

Discussion

- Related to perceived barriers to program implementation:
 - Clinic roles
- Unrelated to PMTCT protocol uptake/implementation:
 - Staff self-reported barriers to uptake and implementation
 - Inadequate human resources (lack of employees and poor work environment)
 - Clinic staff perception of program

Discussion

- Identified Gaps in the PMTCT protocol
 - Many could be attributed to
 - lack of HIV serostatus disclosure
 - HIV stigma
- Protocols to facilitate HIV disclosure may increase willingness to use clinic & reduce gaps
- Not identified as being included in the PMTCT protocol
 - Exclusive infant feeding practices
 - Maternal intrapartum treatment

Limitations & Next Steps

- Limited sample size of managerial staff
- Sampling restricted to 12 clinics
- Unknown generalizability to other rural regions or countries
- Implementation of Recommendations
 - Summaries reviewed by Provincial Ministry of Health Offices
 - Recommendations developed by collaborative team
 - Restructuring of clinic hours & staffing
 - Restructuring of training & dissemination methods
 - Efforts to increase male involvement underway

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