HTA for Strengthening Prong 2 Interventions of the PPTCT Program at Public Health Facilities through Provision of Linked HIV and Family Planning Services

Policy Brief

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Summary

The World Health Organization has recommended a four-prong strategy to prevent and manage HIV[1]. The second prong focuses on prevention of unintended pregnancies through strengthening linkage of HIV care with family planning services. This HTA answers the question of whether strengthening prong 2 interventions through linked HIV-FP services to prevent unintended pregnancies among WLHIV is cost-effective. Systematic review to access the effectiveness of the intervention and three cross-sectional studies to obtain the cost and quality of life parameters were conducted. A hypothetical cohort of 782107 women living with HIV was followed using a Markov decision analytical model. The intervention was found to be cost-effective and could avert 72604 unintended pregnancies, 17425 unintended live-births, 41610 induced abortions, 2752 infant infections (at 2% PPTCT transmission rate) and 8722 maternal deaths. An incremental cost of INR 11432 could avert one unintended pregnancy, INR 47247 could avert one unintended lie birth, INR 19953 could avert one induced abortion and INR 95192 could avert one maternal death.

Recommendations

- Access to all contraceptives is a matter of right of PLHIV. This will reduce burden on the pregnant women as well as health system to manage pregnancies among women living with HIV, and their outcomes
- The existing PPTCT program could be strengthened to promote dual methods among women living with HIV by holistic counseling and providing linked ART services to OBGYN department to address sexual and reproductive health needs
- Improve knowledge among health service providers during training and correct any misconceptions regarding use of contraceptives among women living with HIV
- Inform and motivate the stakeholders regarding the efficiency and effectiveness of this simple intervention that could help achieve SDG target to end epidemics like AIDS by 2030

Context and Gap Analysis

The Sustainable Development Goals (SDG) targets to end epidemics like AIDS by 2030[2]. India is also a signatory of the 90:90:90 strategy by United Nations[3]. The National Strategic Plan of the country aims to make India AIDS-free[3].

For achieving this, strengthening all the prongs is vital. However, various literature evidences show high prevalence of unmet FP needs among women living with HIV (WLHIV), thus highlighting the lack of attention on prong 1 and 2[4]. The linkage of HIV services to FP, with emphasis on dual methods (prong 2), could reduce infection transmission and prevent unintended pregnancies and HIV positive births. This could also reduce the stigma related to the condition and improve the quality of life of WLHIV.

Various African studies have demonstrated clinical and cost-effectiveness[5] of this intervention. Although evidence of its clinical-effectiveness exists in the Indian setting, there is no study on its cost-effectiveness.

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Aims and Objectives

This policy brief addresses the question of whether strengthening prong 2 interventions is a cost-effective strategy to prevent unintended pregnancies in the Indian public health settings.

Objectives

- **To collate evidence on clinical and cost-effectiveness of providing integrated HIV and FP services to reduce unintended pregnancies among WLHIV**
- **To estimate the health utility scores and out of pocket expenditure of WLHIV**
- **To estimate the health system cost for providing the integrated HIV and FP services to WLHIV**
- **To estimate the cost-effectiveness of providing integrated HIV and FP services to reduce unintended pregnancies among WLHIV**

Analysis

The cycle length was one year and the time horizon was 34 years. Analysis was undertaken using HTAIn reference manual[6].

The input parameters were obtained from primary studies, systematic and scoping reviews and data from State AIDS control Society.

Probabilistic Sensitivity Analysis was conducted to evaluate the uncertainties in the model parameters. The ICER plane, PSA plane and CEAC plane were used to present the

Methods and Approach

To answer the policy question, a 'Health Technology Assessment' (HTA) approach was adopted

A Markov decision analytical model was developed. It began with a cohort of 782107 WLHIV that met the inclusion criteria. The cohort would move through the model within their reproductive life span to progress into pregnancy and its possible outcomes or would re enter the model in a non-pregnant eligible state. They transitioned through 8 health states:

1. Not using any method of contraception
2. Using only condom
3. Using reversible method with condom
4. Using reversible method without condom
5. Using irreversible method with condom
6. Using irreversible method without condom
7. Pregnancy
8. Death

If pregnancy was attained, it could be intended/unintended and could result in live births (vaginal/C-section) or abortions. After birth, the infant would receive ARV prophylaxis and will be tested for HIV at 6 months, post which she is diagnosed.

Perspective: Disaggregated societal

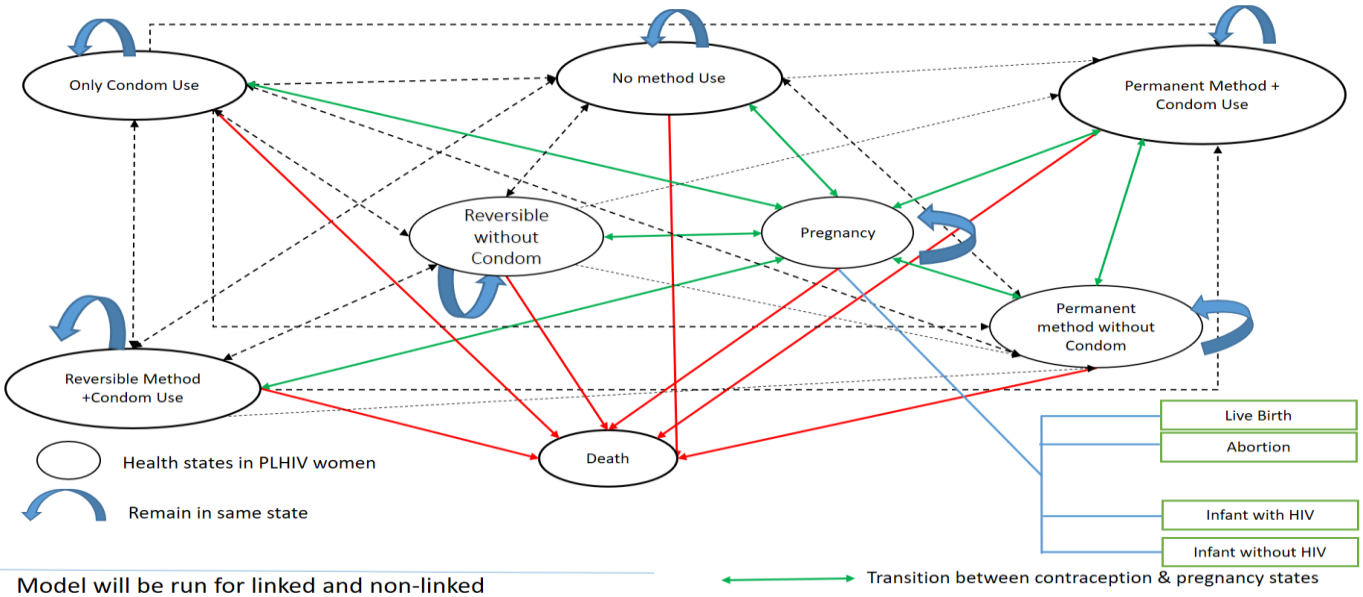
Population: Hypothetical cohort of sexually active WLHIV in the reproductive age group

Intervention: Linkage of HIV and FP services through training of healthcare providers with emphasis on dual methods, assessment of unmet FP needs, providing counselling and linked services at the health facility with timely monitoring and evaluation.

Comparator: Standard of care that focuses predominantly on condom promotion for infection control without much emphasis on dual methods and FP referral services

Outcome: Incremental Cost-effectiveness ratio (ICER) in terms of unintended pregnancies, lie births abortions, infant infections and maternal deaths averted by implementing the intervention

Diagrammatic representation



Model will be run for linked and non-linked

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Results

- Among the cohort of 782107 WLHIV, 72604 more unintended pregnancies were averted by the intervention. Similarly, 41610 induced abortions, 17425 unintended live births, 8722 maternal deaths, 2752 infant infections (assuming 2% PPTCT transmission rate in a well performing program) and 6880 infant infections (at 5% PPCT transmission rate as reported by NACO) were also averted.
- An additional amount of INR 11435 could avert one unintended pregnancy. Similarly, INR 47647, INR 19953 and INR 95192 could avert one unintended live birth, induced abortion and maternal death, respectively.
- At an incremental cost of INR 100000, one death, two unintended lie births, five abortions and nine unintended pregnancies could be avoided. Therefore, the intervention is cost-effective.

Outcomes	Number of averted cases for the cohort	Number of averted cases per person
Unintended pregnancies	74604	0.092
Unintended live births	17425	0.022
Induced abortions	41610	0.053
Infant infections (at 2% PPTCT transmission rate)	2752	0.004
Infant infections (at 5% PPTCT transmission rate)	6880	0.009
Maternal Deaths	8722	0.011

Outcomes	ICER (UD)	ICER(D)	% of cost effectiveness from PSA
Unintended pregnancies averted	27868	11435	100
Unintended live births averted	116117	47647	71.7
Induced abortions averted	48262	19953	95.7
Maternal Deaths averted	231988	95192	57.1

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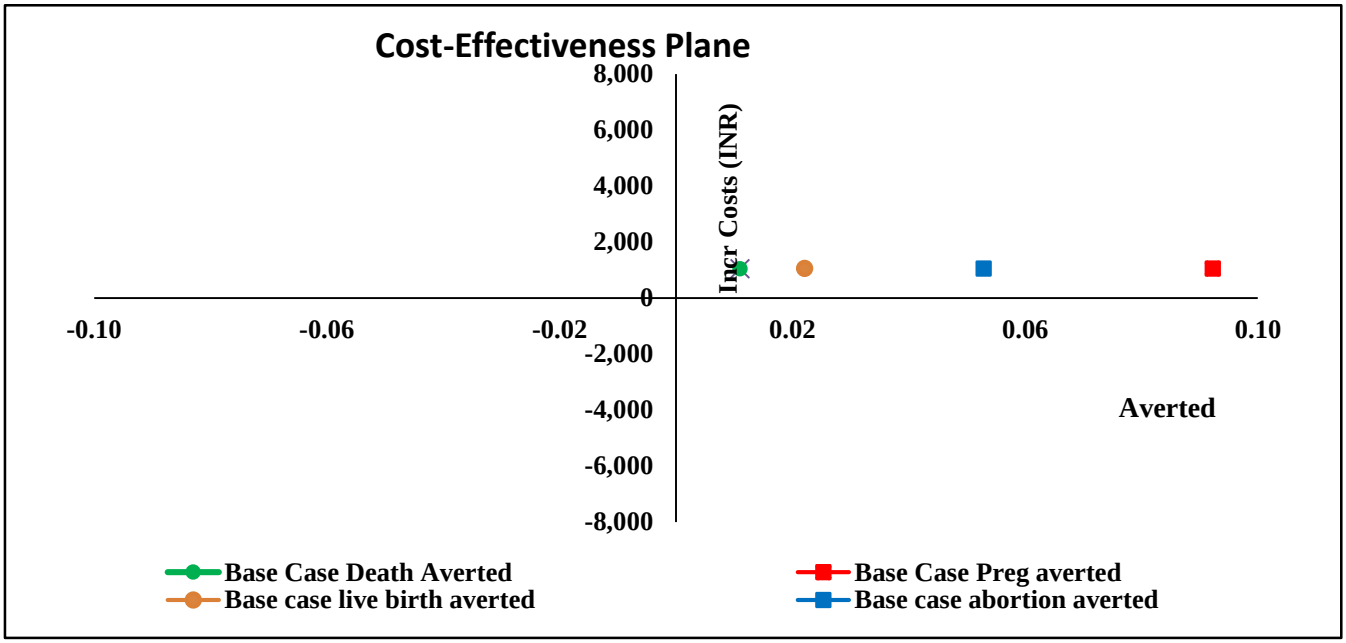
Probabilistic sensitivity analysis

Regarding PSA for each health outcome, 100% of the Monte Carlo simulations remained cost-effective in case of pregnancies averted; 95.7% for induced abortions averted; 71.1% for unintended live births averted; 57.1% for maternal deaths averted.



Conclusion

The modelling exercise found that the intervention was cost-effective in terms of unintended pregnancies, induced abortions, unintended live-births, maternal deaths and infant infections averted. These findings appeared to be robust in the sensitivity analysis. Access to contraception is a matter to right for the WLHIV, as is for the general population. This study presents evidence to promote various family planning methods among WLHIV with specific focus on dual methods. Prevention of unintended pregnancies would reduce the burden on health of WLHIV and cost burden on the health system.

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