Maternal health in the era of antiretroviral therapy (ART):
A review of the literature

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Maternal Health and HIV: Examining Research through a Programmatic Lens

Boston, MA

June 10, 2013

USAID
FROM THE AMERICAN PEOPLE

African Strategies for Health

Why does this matter to USAID?

- Significant investments in HIV/AIDS and maternal health programs worldwide
- Growing evidence on increasing contribution of HIV/AIDS to maternal mortality
- Questions from USAID Missions on evidence-based strategies to address the maternal health needs of HIV-infected women
- Revision of USAID Maternal Health Strategic Vision and priorities for programs
- Need to strategically work on integration

Background of Review

- March 2012: USAID colleagues from AFR, OHA and MCH formed an ad hoc committee to look at the integration of MH and HIV issues
- April – Sept: Reviewed other efforts supporting this work outside of the agency to determine what role would be best for USAID to take
- Oct – Jan 2013: Worked with implementing partner, the African Strategies for Health project, to finalize 3 research questions to answer operations issues affecting our programs which seemed not to have been addressed yet
- February – May: Systematic review carried out, draft findings prepared

Review Questions

Q1: WHAT ARE THE MOST EFFECTIVE INTERVENTIONS FOR REDUCING MORTALITY AMONG HIV-INFECTED WOMEN DURING PREGNANCY AND UP TO ONE YEAR POSTPARTUM?

Sub-questions and considerations

- Identify causes of death among HIV-infected pregnant and postpartum women and then identify the proven high impact interventions for addressing them
- Identify all clinical and non-clinical interventions that have been implemented to reduce mortality in HIV-infected pregnant and postpartum women and their outcomes
- Record all interventions identified and the outcomes

Q2: What are the demand side factors and how do they influence women's initiation and adherence to ART during pregnancy and up to one year postpartum?

Q3: WHAT ARE THE OPERATIONAL/HEALTH SYSTEM FACTORS AND HOW DO THEY AFFECT WOMEN'S INITIATION AND ADHERENCE TO ART DURING PREGNANCY AND UP TO ONE YEAR POSTPARTUM?

Sub-questions

- What *health system factors* affect ART *initiation among HIV-infected pregnant women?*
- What *interventions* have proven effective in increasing ART *initiation among pregnant HIV-infected women*?
- What *health system factors* affect ART *retention/adherence*?
- What *interventions* have proven effective in increasing ART *retention/adherence* among pregnant HIV-infected women?
- What health system factors might account for the higher rates of ART retention and adherence among HIV-infected women who give birth in facilities?

Methodology

A systematic review

- **Databases for peer reviewed literature**
  - PubMed, Google Scholar, Social Science Citation Index
- **Websites for grey literature**
  - NGO, USG, UNAIDS, WHO, Ministry of Health and other websites of PEPFAR priority countries, multi-lateral and bi-lateral agencies, conferences

Inclusion Criteria

Date parameters

- Interventions to reduce mortality: January 2003-April 2013
- Demand side and System factors: January 2008-April 2013

Language

- English only

All possible clinical and non-clinical interventions were considered, and quantitative and qualitative studies

Number of studies included

- Interventions to reduce MM: 3,028 screened; 48 included
- Demand side factors: 2,159 screened; 34 included
- System factors: 2,159 screened; 42 included

Analysis

- Q1: A conceptual framework was developed to identify pathways of HIV-related maternal mortality, including co-morbidities and obstetric complications, and used to structure the analysis
- Q 2 & 3: Narrative analysis approach for data synthesis
- Quality assessments conducted for all studies included in all three questions
- Strength and generalizability of all evidence was assessed

Preliminary Findings

Q1: Effective Interventions

ART was the only intervention found to directly reduce excess risk of mortality…BUT

- There was almost no evidence available on other interventions
- Timing is essential: the effect is greatest when ART is initiated early in pregnancy and when CD4 levels are high
- ART found to reduce the risk of contracting TB but it's unclear whether the risk of death from TB is reduced

Q2: Demand Side Factors

KEY FINDINGS	STRENGTH	GENERALIZ-ABILITY
Level of Influence: Individual		
Socio-demographic factors (age, educational level, residency)	**Strong**	**Strong**
Level of knowledge about health services, ART, and/or PMTCT	**Strong**	**Strong**
Women's fears and perceptions of treatment, and the desire to maintain their roles and status within families	**Moderate**	**Strong**
Factors in a woman's daily life (household demands, lack of access to water, scheduling problems)	**Strong**	**Strong**
Beliefs (religious beliefs, feeling healthy, and having a positive outlook)	**Moderate**	**Moderate**
Behavioral factors (alcohol or drug use, forgetting to take or misplacing medicine)	**Strong**	**Strong**

Q2: Demand Side Factors

KEY FINDINGS	STRENGTH	GENERALIZA-BILITY
Level of Influence: Interpersonal		
Relationships with partners (disclosure to partner, gender dynamics)	**Strong**	**Strong**
Relationships within the family (disclosure, support)	**Moderate**	**Moderate**
Level of Influence: Community		
Stigma within a community (experienced and anticipated, disclosure)	**Strong**	**Strong**

Q2: Demand Side Factors

KEY FINDINGS	STRENGTH	GENERALIZA-BILITY
Level of Influence: Structural		
Participation in recommended health services (frequent use, co-treatment, delivery in facility)	**Moderate**	**Strong**
Logistical problems around access to services (transport problems, waiting times, cost)	**Moderate**	**Strong**
Interactions with health workers (attitudes)	**Strong**	**Moderate**

Q2: Demand Side Factors

Individual, Interpersonal, Community & Structural

Individual level

- Poor knowledge and understanding of ART is a major barrier to initiation and adherence
- Logistics: forgetting to take and misplacing medications were key barriers identified

Interpersonal level

- Influence of husbands and partners was both an enabler and a barrier
- Disclosure to other than a partner was an enabler

Q2: Demand Side Factors (cont' d)

Community level

- Stigma: actual experience and fear of were the major barrier to initiation and adherence identified
- Community misunderstandings about ART is related to stigmatization and acts as a barrier to use

Structural level

- Limited access to transportation was a major barrier
- Greater engagement with health services, e.g., PMTCT and TB treatment, increased likelihood of long term adherence

Understanding the local context is critical to designing effective interventions

Q3: Operational/Systems Factors

KEY FINDINGS	EVIDENCE	GENERALIZ-ABILITY
Theme 1: Models of Care		
Effective model of care design involves more than integration	**Strong**	**Moderate**
Maternal ART has been under-prioritized in ANC, PMTCT and HIV programs	**Weak**	**Moderate**
Services struggle to retain women and involve partners, in the postpartum period and for the ART-ineligible or those who declined ART	**Strong**	**Strong**
Gaps between ANC-PMTCT and HIV services and dropout along the maternal ART cascade persist and is widespread, even if care models are designed to overcome access barriers	**Strong**	**Strong**

Q3: Operational/Systems Factors

KEY FINDINGS	EVIDENCE	GENERALI-ZABILITY
Theme 2: Service Delivery		
Communication and coordination problems: scheduling difficulties, poor follow-up and tracing, weak information systems, and not keeping up with changing treatment protocols and referral procedures	**Strong**	**Strong**
Problems related to ANC services: poor access to and quality of HIV testing, lack of POC CD4 testing, and lengthy, rigid or complicated treatment protocols	**Moderate**	**Strong**
Weak training & supervision of healthcare workers regarding emotional support (for themselves & patients), up-to-date information on treatment protocols, referral procedures & importance of maternal HIV care	**Weak**	**Moderate**

Q3: Operational/Systems Factors

KEY FINDINGS	EVIDENCE	GENERALI-ZABILITY
Theme 3: Resource Constraints and Broader Systems Failures		
System-wide resource constraints: HR shortages and turnover, long wait times, supply shortages, supply chain problems, and user fees	**Moderate**	**Strong**
Governance challenges: centralized resource allocation, poor performance management, weak/fragmented accountability mechanisms, inconsistent payment processes & ineffective use of health information	**Weak**	**Moderate**
Theme 4: Patient/Health System Engagement		
Relationships between providers and clients: nature of confidentiality, HIV stigma, favoritism, unequal power relationships and perceptions about the healthiness of pregnant women	**Strong**	**Strong**
Directness, intensity, frequency, and extension of provider engagement with women	**Moderate**	**Weak**

Q3: Operational/Systems Factors

KEY FINDINGS	EVIDENCE	GENERALI-ZABILITY
Theme 5: Interventions to Improve Maternal ART Outcomes		
System-wide resource constraints: HR shortages and turnover, long wait times, supply shortages, supply chain problems, and user fees	**Moderate**	**Strong**
Governance challenges: centralized resource allocation, poor performance management, weak/ fragmented accountability mechanisms, inconsistent payment processes & ineffective use of health information	**Weak**	**Moderate**

Q3: Operational/System Factors

Models of Care

- Maternal ART is not prioritized in the design of services resulting in inadequate attention to HIV-infected women
- Critical drop out points are between testing to initiation of ART (including intermediate steps) and postpartum
- Programs do not have approaches or capacity to retain ART ineligible and postpartum women in care
- The lack of partner involvement by HIV services was viewed by women as a key impediment to initiation and adherence

Q3: Operational/System Factors

Service Delivery

- Poor communications, including HIS, scheduling, follow up & tracking, impedes effective service delivery
- Poor coordination between and within services for referrals and integration of new protocols into service delivery are impediments to effectiveness
- Good quality care is important for facilitating initiation and adherence, highlighting the importance of up-to-date **training** and of **supervision**

Q3: Operational/System Factors

Resources Constraints & Governance Challenges

- Supply chain problems lead to drug and test kit stock-outs
- Human resource shortages and staff turnover result in long waiting times and poor follow up
- Ineffective use of health information by managers impeded effective service delivery
- Weak performance management and fragmented lines of accountability between and within services were common problems

Q3: Operational/System Factors

Health service/provider-client interface

- Stigmatizing attitudes and behavior by providers inhibit care seeking

- Quality of client-provider relationships can facilitate or impede ART initiation and adherence
  - Providers who exhibit a human rights orientation towards clients encourages initiation and adherence
  - One-on-one counseling is an important enabler

- Ongoing engagement with the health system is an enabler

Q3: Operational/System Factors

Maternal ART interventions

- Multi-pronged, multi-level approaches are essential for designing effective interventions vs. integration per se

- There is a paucity of research on the effectiveness of various service delivery strategies and models on ART outcomes

Health system

- The organization and coordination of services is central to facilitating and supporting initiation and adherence, including:

  - Identifying and addressing bottlenecks and barriers
  - Better alignment of ANC, HIV and PMTCT services

KEY PREGNANCY-RELATED HEALTH SYSTEM BARRIERS AND ENABLERS

Challenge of coordinating HIV care for women with their movement into ANC, through the delivery and post-natal phases of care, and back into general adult primary care
Loss of focus on pregnant women's health needs in the context of PMTCT program focus on preventing vertical transmission
The blind spot of the post-natal period, when women transition out of ANC and PMTCT care but are not effectively linked to ongoing primary or HIV care
Health services not set up to accommodate the health and social needs of pregnant women (e.g., not sitting and waiting all day, not being seen (by selves and others) as 'sick enough' to warrant focused attention, need for movement across facilities during and after pregnancy to access social support, difficulty in coordinating both ANC and HIV care visits, if separate)
Poor knowledge and training of healthcare workers about the importance of maternal ART and maternal ART protocols and referral procedures
Time-bound nature of pregnancy not sufficiently accounted for in some ART protocols that required lengthy assessment and drug readiness training before initiation

Gaps and Opportunities

1. Lack of evidence about non-clinical and clinical interventions other than ART

2. Question of why women on ART continue to have increased risk of mortality from TB remains unanswered

3. Insufficient evidence about effects of ART on birth outcomes and its long term effects on women

4. Option B+ for PMTCT offers opportunities to test more women/mother-centered and integrated models of care to improve initiation, adherence and long term retention

Gaps and Opportunities

5. Lack of information about women who do not use services so insufficient information is an impediment to designing effective interventions to address their needs and support them in accessing and using services

6. No consistent definition of adherence vs. retention, nor indicators
   to measure adherence

Next Steps

1. Presentation at this meeting – discussion and feedback
2. Review findings with USAID and other stakeholders
3. Use findings and outcomes of this meeting as basis for larger meeting later this year with program implementers
4. Develop dissemination plan – publications, conferences, etc.

Acknowledgements

Review Team: ASH/MSH

- **Q1: Thomas Finkbeiner, Katharina Hermann, Sara Holtz, Manana Gagua, Erik Schouten**
- **Q2: Ian Hodgson, Mary Plummer, Sarah Konopka**
- **Q3: Christopher Colvin, Sarah Konopka, John Chalker**

USAID:

- **Jenny Albertini, Sylvia Alford, Karen Fogg, Allisyn Moran, Marta Levitt, Milly Kayongo, David Stanton, Marge Koblinsky, Mary Ellen Stanton, Claudia Morrissey Conlon, Robert Ferris, Anouk Amzel and Debbie Armbruster**