

Research and Evaluation Agenda for Maternal Health and HIV In sub-Saharan Africa

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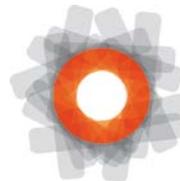
Washington DC



HARVARD

SCHOOL OF PUBLIC HEALTH

Women and Health Initiative



Maternal Health **Task Force**



CENTERS FOR DISEASE
CONTROL AND PREVENTION



Context: Maternal Mortality and HIV

- HIV and complications of childbearing are the leading causes of death among women of reproductive age around the world.*
- 17.7 million women globally are living with HIV. Most are of reproductive age and reside in sub-Saharan Africa.**
- In sub-Saharan Africa, approximately a quarter of deaths among pregnant and postpartum women are due to HIV.***
- Women living with HIV are seven to eight times more likely to die during pregnancy and the postpartum period than their HIV-negative peers.***
- While estimated global maternal mortality ratios have been cut almost in half over the past twenty years, maternal mortality increased during this period in eight countries in sub-Saharan Africa with high HIV prevalence.****

*WHO. *Women and health: today's evidence tomorrow's agenda*. Geneva: WHO; 2009.

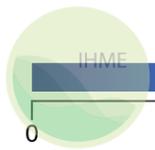
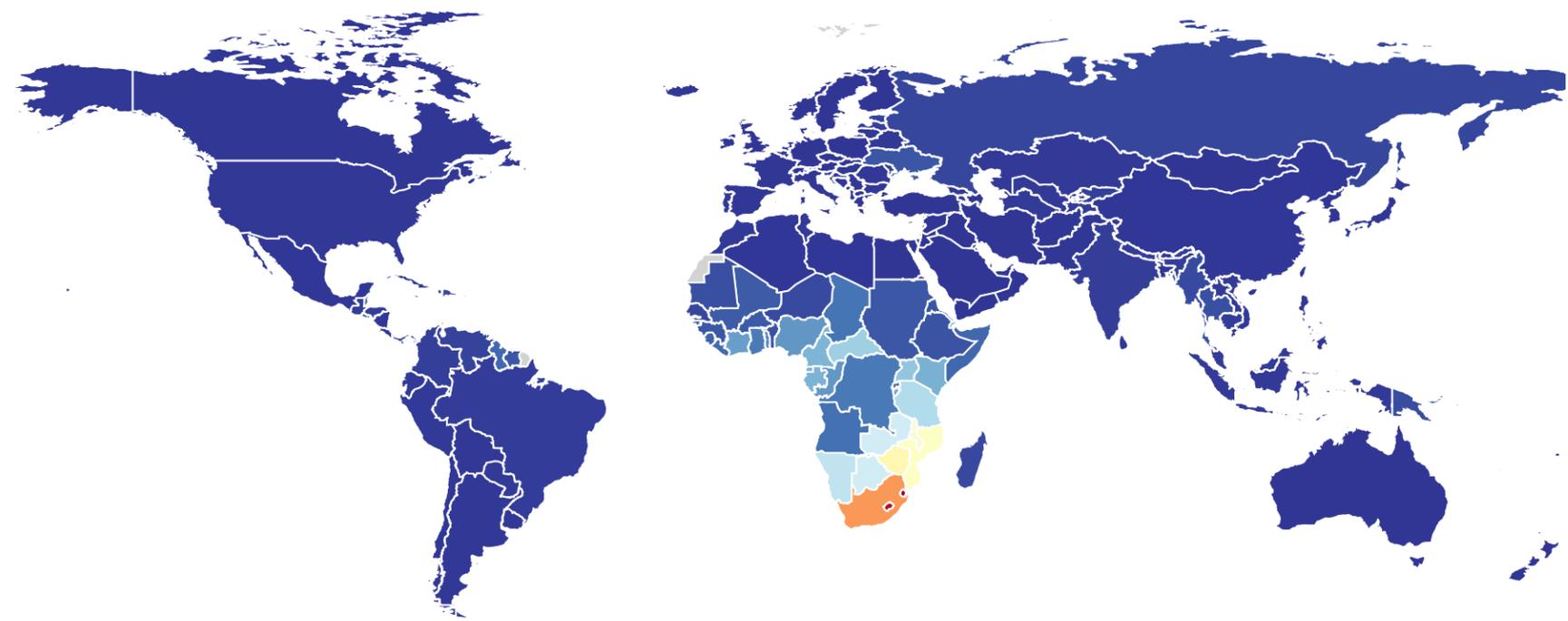
**UNAIDS. *Global report: UNAIDS report on the global AIDS epidemic 2013*. Geneva: WHO; 2013.; UNAIDS. *Regional Fact Sheet 2012 Sub-Saharan Africa*. Geneva: UNAIDS; 2012.

***Calvert C, Ronsmans C. *The contribution of HIV to pregnancy-related mortality: a systematic review and meta-analysis*. *AIDS*. 2013 Jun. 27(10):1631-9; Zaba B, Calvert C, Marston M, Isingo R, Nakiyingi-Miiri J, Lutalo T, et al. *Effect of HIV infection on pregnancy-related mortality in sub-Saharan Africa: secondary analyses of pooled community-based data from the network for Analysing Longitudinal Population-based HIV/AIDS data on Africa (ALPHA)*. *Lancet*. 2013; 381(9879), 1763-1771.

****WHO, UNICEF. *Accountability for maternal, newborn and child survival: The 2013 Update*. Geneva: WHO; 2013.

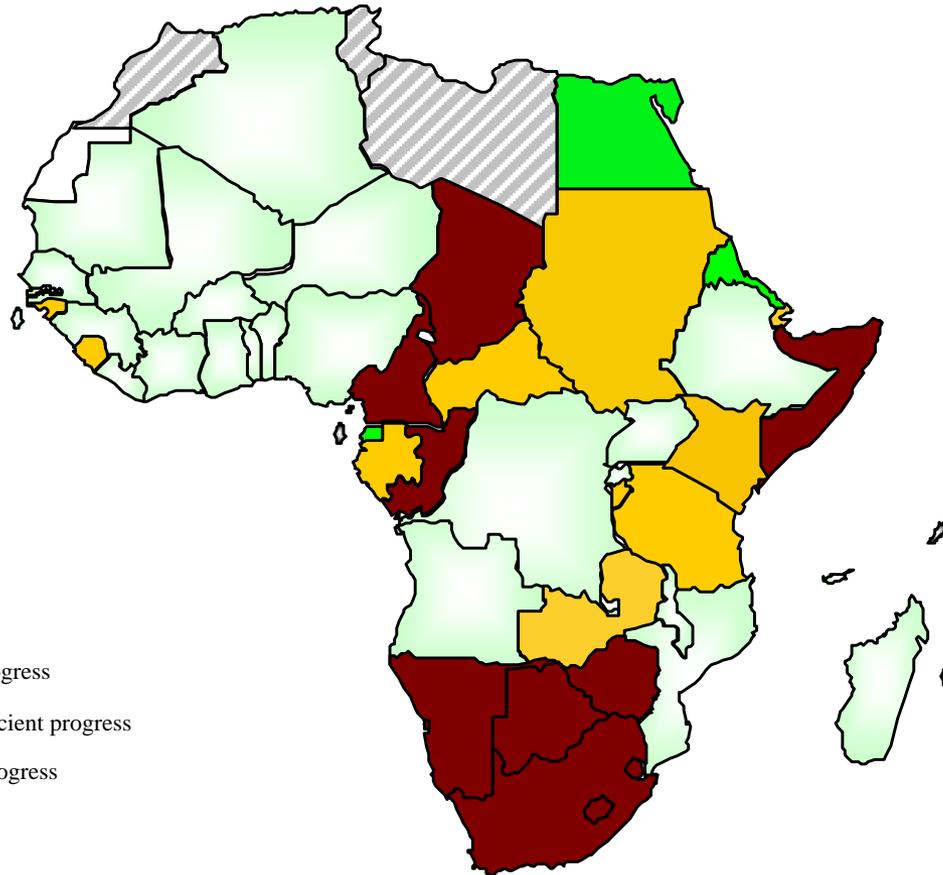


HIV/AIDS
Females, 15-49 years, 2010
DALYs per 100,000



Status of MDG 5 Achievement in the African Region by 2010

Few countries have made progress in MDG5 by 2010.



Source: Trends in Maternal Mortality:1990 to 2010 Estimates developed by WHO, UNICEF, UNFPA and the World Bank, 2010



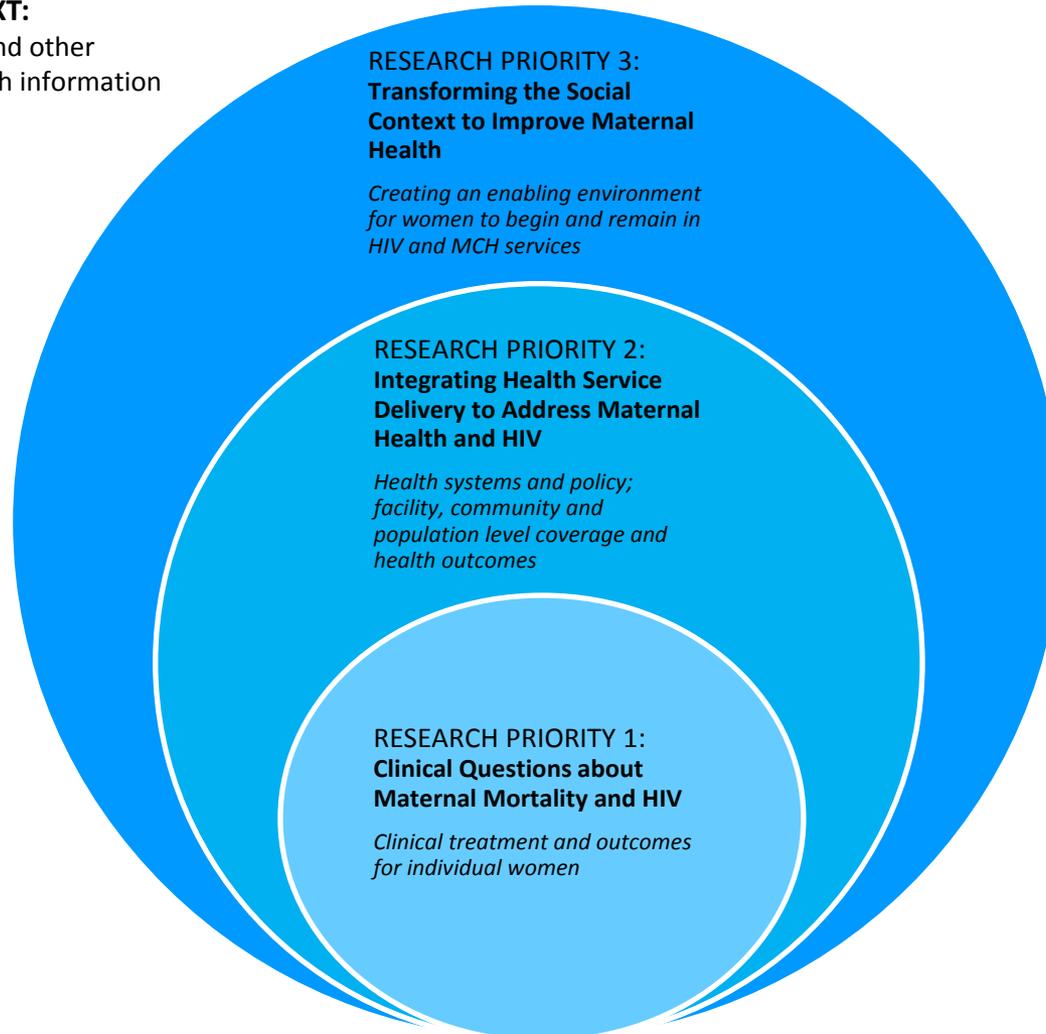
Process: Research and Evaluation Agenda for Maternal Health and HIV in sub-Saharan Africa

- June 2013: Maternal Health, HIV& AIDS: Examining Research Through a Programmatic Lens
- July-August 2013: Comprehensive literature review and drafting of research and evaluation agenda
- September 2013: Review by Advisory Group
- November-December 2013: Review by Advisory Group and External Peer Reviewers

Conceptual Framework: Research and Evaluation Priorities

COUNTRY CONTEXT:

Prevalence of HIV and other comorbidities, health information systems

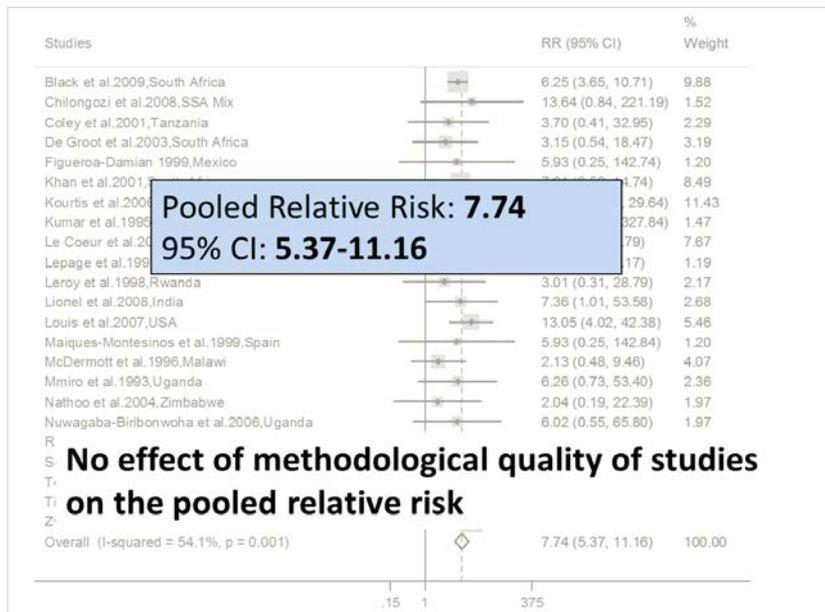


Significant investments in strengthening health systems, new treatment guidelines

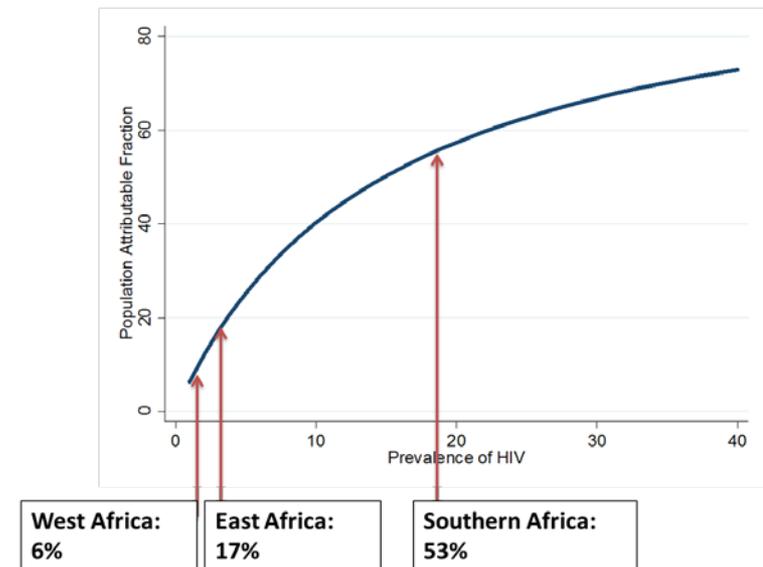
Research Priority 1: Clinical Questions about Maternal Mortality and HIV

Contribution of HIV to pregnancy-related mortality: A systematic review and meta-analysis

Excess mortality review Results



Excess mortality review Results



This 2013 systematic review of the literature found that:

- Women with HIV were 7-8 times more likely to die during pregnancy and post-partum than women who did not have HIV
- The percent of maternal deaths that is attributable to HIV in Sub-Saharan Africa varied depending on prevalence. In southern Africa 53% were attributable to HIV

Interaction of HIV and pregnancy

- Does pregnancy affect HIV progression
 - No evidence but questions remain
- Does HIV affect maternal morbidity and mortality?
 - Yes, women with HIV who are not on ART are 7-8 times more likely to die during pregnancy and post-partum
 - A major question is the impact of ART on maternal morbidity and mortality among women with HIV

Research and evaluation priorities: Overall maternal mortality and ART

- How does ART, including provision of lifelong ART, affect rates and causes of maternal morbidity and mortality
 - How do timing of initiation (before or during pregnancy) and duration of treatment affect the risk of mortality?
 - Are there adverse effects of longer duration / preconception ART on mother or infant?
- What is relationship between HIV infection and rates and causes of maternal morbidity and mortality?
- Does pregnancy influence the progression of HIV disease in low resource settings?
 - What is the best way to adjust for the 'healthy pregnancy' effect?

Major causes of maternal morbidity and mortality among women with HIV

- Sepsis
 - Three times more likely to develop puerperal sepsis particularly after C-section (six-fold increase); two to three times more likely to develop endometritis
- Non-pregnancy Related Infections
 - Tuberculosis
 - leading cause of death among people with HIV
 - post-partum women more likely to develop TB; and pregnant women with HIV and TB disease have a two to three-fold higher risk of dying compared to pregnant women without HIV
 - Pneumonia
 - leading cause of death; higher mortality rates among pregnant for pneumocystis pneumonia
 - microbial cause of the majority of pneumonia cases is undetermined
 - Malaria
 - more febrile illness, adverse birth outcomes and more likely to die
 - standard malaria prophylaxis less effective; questions about drug interactions
- Anemia
 - more likely to be anemic - a risk factor for mortality if obstetric hemorrhage occurs
 - Iron supplementation in women without anemia may stimulate viral replication
- Hypertension and Obstetric Hemorrhage
 - conflicting findings

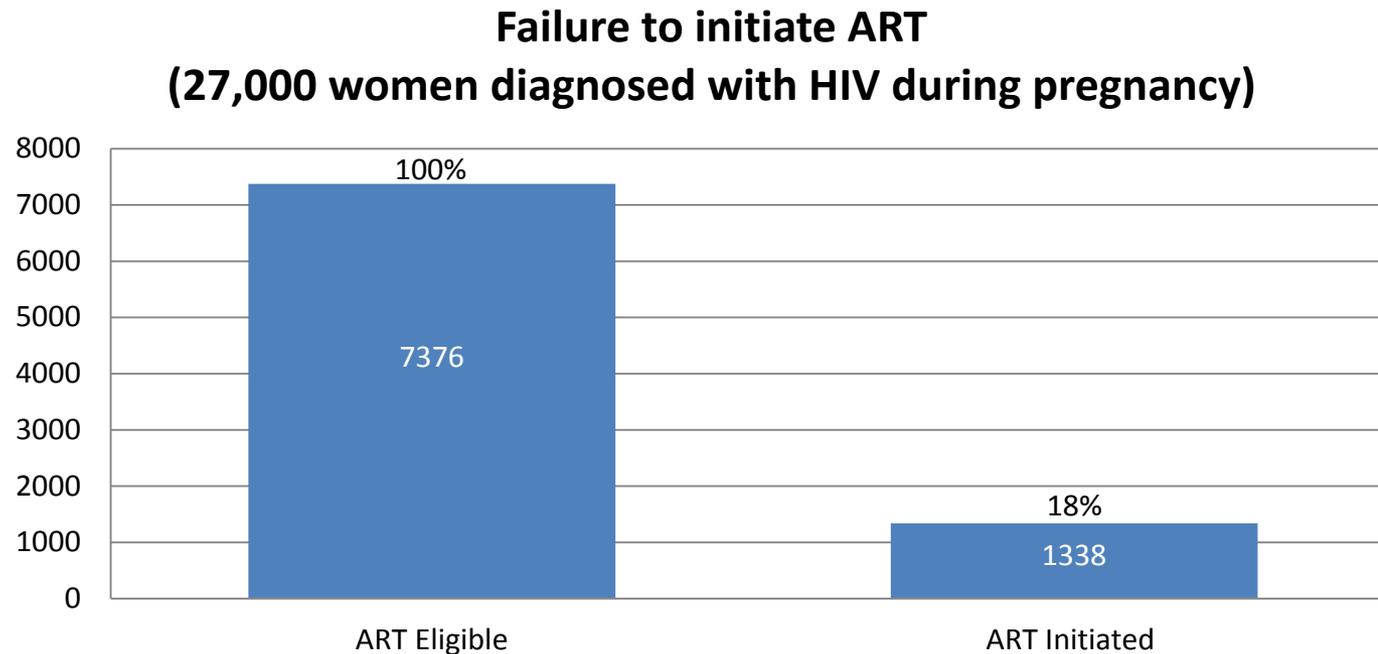
Research and evaluation priorities

- Will earlier initiation of ART eradicate differences in morbidity and mortality for specific causes of death?
- What are the interactions between HIV, ART, pregnancy and specific medical complications?
- How can we improve prevention and treatment of maternal complications
- What treatment regimens are safe and effective?

Moving forward

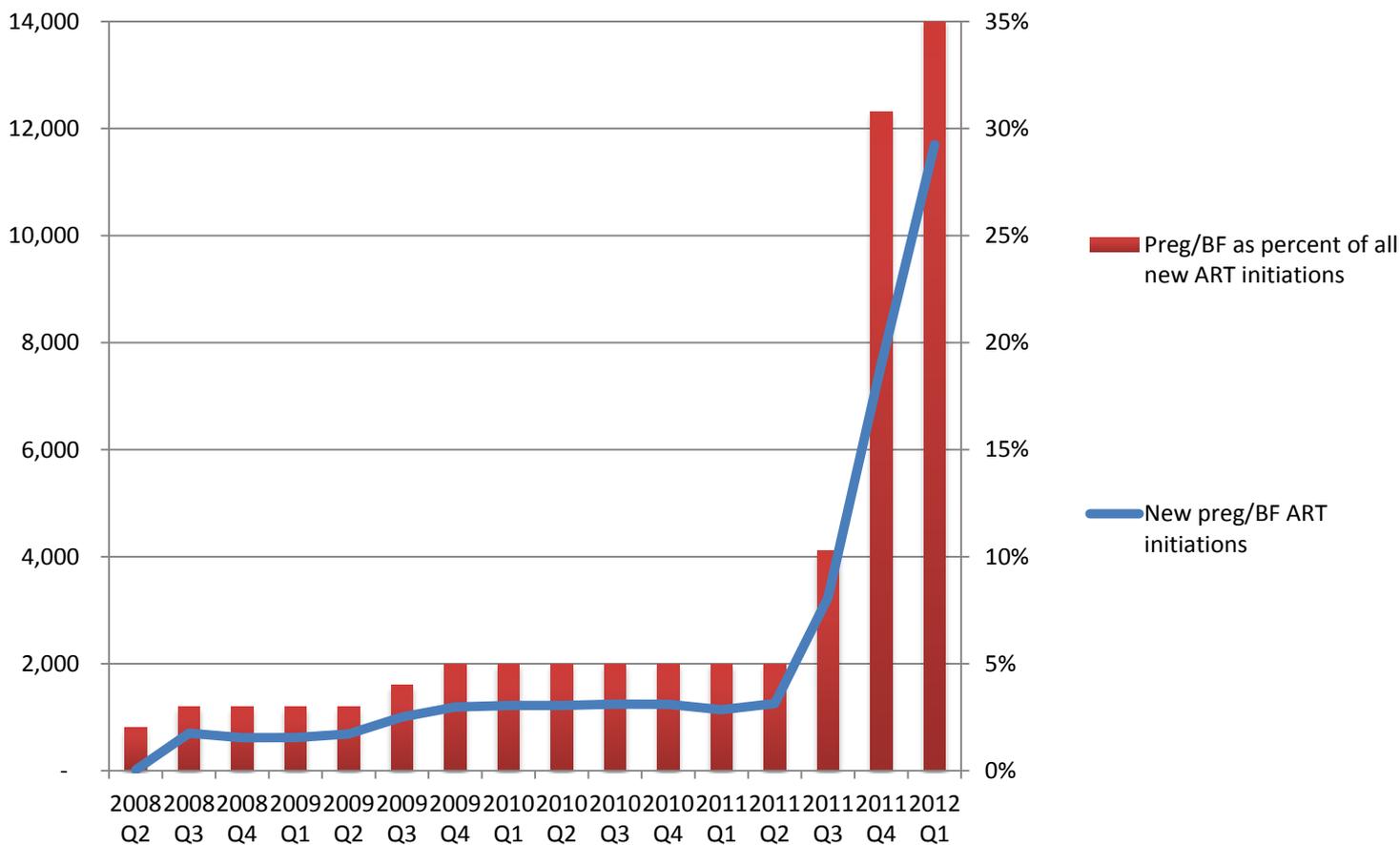
- Secondary analyses
 - Observational Treatment Cohorts
 - Household and community based surveys
 - District / facility data especially death reviews
- Advocate for indicators related to pregnancy in routine and periodic monitoring (both HIV and MCH)
- WHO Pregnancy Registry
- Improve and validate verbal autopsy tools
- Nested studies within large scale intervention studies
- Advocate for new research studies

Research Priority 2: Integrating Health Service Delivery to Address Maternal Health and HIV



Ferguson, L., A. D. Grant, D. Watson-Jones, T. Kahawita, J. O. Ong'ech and D. A. Ross (2012). "Linking women who test HIV-positive in pregnancy-related services to long-term HIV care and treatment services: a systematic review." *Tropical Medicine & International Health* 17(5): 564-580.

Malawi: Impact of Option B+ on ART initiation in pregnant and breastfeeding women



Integrating Health Service Delivery to Address Maternal Health and HIV

- Important areas of focus include integration of the following within MCH or HIV services:
 - ART within antenatal and postpartum care
 - Screening and treatment for malaria
 - Screening and treatment for tuberculosis
 - Post-partum family planning
 - Preconception counseling

Evidence for Integrated HIV and MCH Service Delivery

- Systematic review: integrating HIV services into MNCH, nutrition and family planning generally improved health outcomes, coverage and quality of services
- Systematic review: implementation / intensification of PMTCT programs had generally positive results on other MCH services

Key Research and Evaluation Questions: Integrating Services

- What are benefits / detriments of integrating services:
 - Quality of care, clinical effectiveness, coverage
 - Optimal time to deliver each service
 - Uptake, linkage and retention of HIV and MCH services
 - Human resource needs to safely and effectively deliver more services
 - Impact of integrated services on morbidity and mortality, unintended pregnancy, HIV transmission
 - Costs and cost-effectiveness of integrated services; efficiency gains

Research and Evaluation Priorities: Malaria and TB

- Coverage of screening/recommended prophylaxis in MCH services improving but still relatively low
- Malaria
 - Is monthly malaria prophylaxis or cotrimoxazole more effective and safer for pregnant women with HIV?
 - What are the most effective models for harmonizing policy and programmatic guidelines to integrate HIV and malaria prevention, diagnosis and treatment in antenatal care?
- TB
 - What is the best way to increase TB screening in antenatal clinics and excluding active TB?
 - What are the barriers to uptake of prophylaxis and treatment among pregnant women with HIV?

Research and Evaluation Priorities:

Preconception counseling and Postpartum family planning

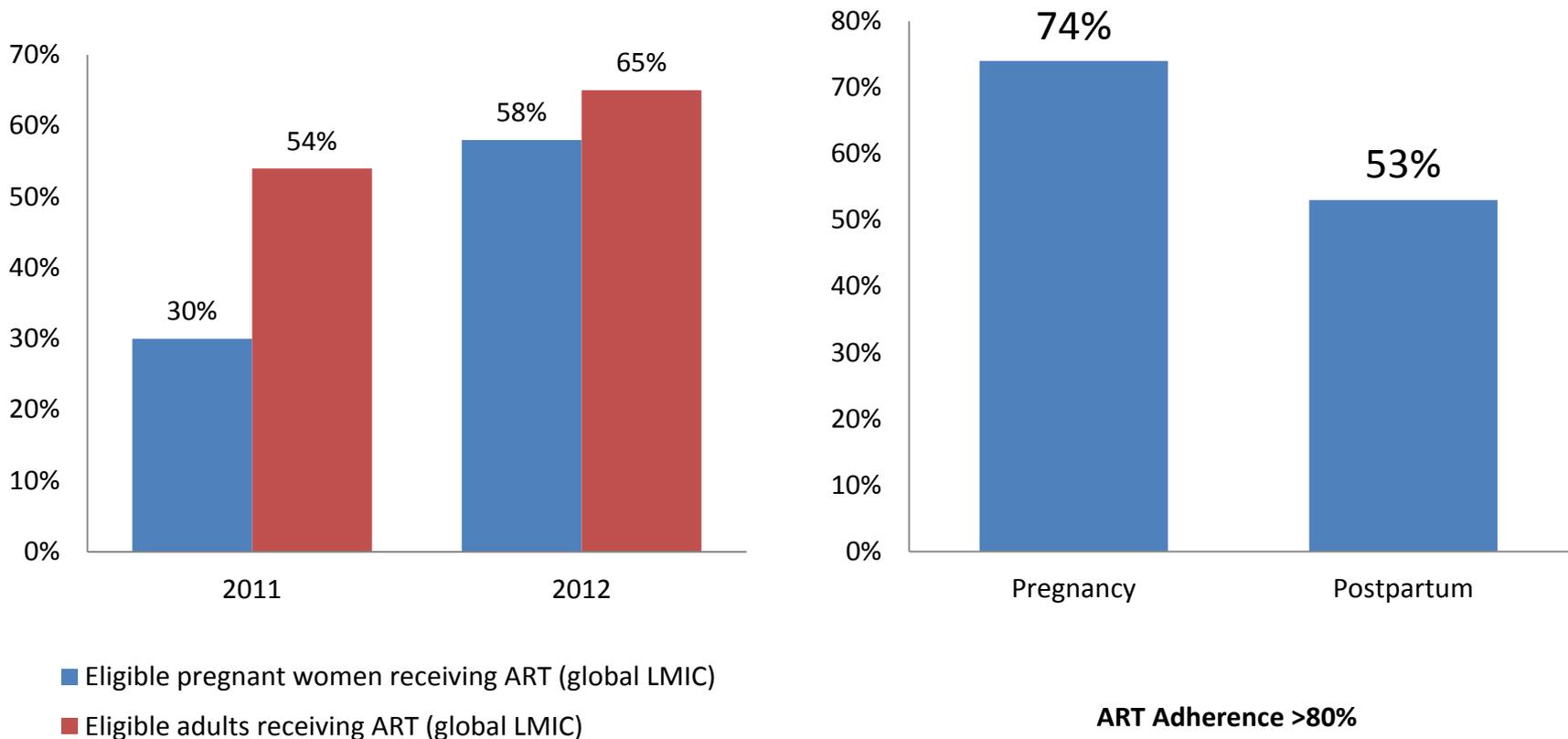
- Preconception counseling
 - What is the efficacy and acceptability of biomedically safer conception methods? What is feasible?
 - What is the best mix of providers and program models for providing preconception counseling; how will knowledge about treatment as prevention, pre-exposure prophylaxis and preconception counseling affect reproductive desires, intentions and behaviors?
- Postpartum family planning
 - What models of counseling and service delivery increase postpartum and post-abortion contraceptive uptake and retention by women living with HIV?
 - How can dual method use be increased among women living with HIV and their partners?

Moving forward

- Secondary analyses
 - Retrospective or prospective analysis where integrated services are being delivered
 - What integration has occurred? at what levels of the health system? what models are successful?
- Incorporate key pregnancy/post-partum indicators in routine monitoring of relevant programs (eg TB)
- Incorporate HIV and ART treatment status in periodic large-scale surveys
- Design implementation research studies to assess impact of integration

Research Priority 3: Transforming the Social Context to Improve Maternal Health

Access and adherence to ART among pregnant and postpartum women



UNAIDS (2012a). "Global report: UNAIDS report on the global AIDS epidemic 2012." Geneva, Switzerland: UNAIDS, WHO.

UNAIDS (2013). "Global report: UNAIDS report on the global AIDS epidemic 2013." Geneva, Switzerland, UNAIDS, WHO

Nachega, J. B., O. A. Uthman, J. Anderson, K. Peltzer, S. Wampold, M. F. Cotton, E. J. Mills, Y. S. Ho, J. S. Stringer, J. A. McIntyre and L. M. Mofenson (2012). "Adherence to antiretroviral therapy during and after pregnancy in low-income, middle-income, and high-income countries: a systematic review and meta-analysis." *AIDS* 26(16): 2039-2052.



Transforming the Social Context to Improve Maternal Health

FOCUS: Addressing gender and HIV discrimination, promoting rights, and increasing social support for pregnant and postpartum women

- Reduce violence against women
 - Engage men in HIV and MCH services
 - Reduce HIV-related stigma and promote respectful maternity care
 - Increase community and peer support for pregnant and postpartum women
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- Impact of interventions on proximate outcomes and maternal health outcomes



Successful Interventions

- Reduce violence against women and HIV-related stigma
 - Community-based participatory processes: IMAGE, Stepping Stones
- Engaging men in HIV and MCH Services
 - Family centered care
 - Participation without need to disclose HIV status
- Awareness, action, monitoring
 - Policy framework: Rights-based instruments
 - Institutional practices and individual behavior: Participatory training, monitoring and quality improvement
 - Community mobilization and peer support to improve maternal health and PMTCT

Research and Evaluation Priorities

- Which community mobilization, peer support, and male engagement interventions improve maternal health outcomes in the context of high HIV prevalence?
- Do interventions which reduce violence against women, HIV-related stigma and discrimination, and disrespect and abuse in maternity care reduce maternal morbidity and mortality?
- Do these interventions affect proximate outcomes like uptake of HIV and MCH services, linkage from diagnosis to ART, retention in care, adherence to ART or disclosure of HIV-status? Do they reduce postpartum depression?



Moving the Research Agenda Forward

- Conduct retrospective, prospective or ecological analysis in areas where promising interventions have sufficient coverage
- Include indicators of D&A and stigma and discrimination in quality improvement
- Promote and evaluate community engagement in data collection
- Intervention research: before & after, community cluster trials

In conclusion

- Reducing maternal mortality and improving maternal health in SSA requires:
 - better understanding of interactions between HIV and maternal mortality and morbidity
 - further health system strengthening and integration
 - social context which promotes high quality care and encourages use
- Research and evaluation can increase collaboration, guide policy and programs, and strengthen political constituencies to accelerate progress towards goals in both HIV and maternal health

Acknowledgements

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External Reviewers

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