

# United States global health policy: HIV/AIDS, maternal and child health, and The President's Emergency Plan for AIDS Relief (PEPFAR)

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The Obama administration has unveiled a new 6-year, \$63 billion Global Health Initiative. In addition to the reauthorization of the President's Emergency Plan for AIDS Relief (PEPFAR) to fund HIV/AIDS, tuberculosis, and malaria, the plan also supports maternal and child health (MCH) initiatives that are rooted in a proposal known as the Mother and Child Campaign. The architects of the Obama administration's Global Health Initiative recommend funding the Mother and Child Campaign at the expense of future funding increases for PEPFAR. The idea that differing global health initiatives must compete with each other lacks not only ethical legitimacy but also scientific merit. We believe that MCH need not to be framed in opposition to PEPFAR. Confronting illness in isolation – whether by funding PEPFAR at the expense of programs that target MCH or vice versa – cannot be our way forward. Given the intimate connection between HIV/AIDS and MCH, we affirm supporting PEPFAR and MCH programs together. We argue that policies that de-emphasize PEPFAR threaten to undermine, rather than support, MCH in countries with high HIV/AIDS prevalence. PEPFAR has directly and indirectly supported the care and treatment of other milieu specific diseases, including those afflicting mothers and children, bringing about broad benefits to the primary healthcare systems of recipient countries. We advocate the vertical integration of MCH initiatives into PEPFAR in order to create a comprehensive approach to addressing MCH against the global backdrop of HIV/AIDS.

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Global Health Policy

In May 2009, the Obama administration unveiled a 6-year, \$63 billion global health strategy [1]. The initiative provides \$51 billion toward the reauthorization of the President's Emergency Plan for AIDS Relief (PEPFAR) and \$12 billion for other global health priorities including interventions that focus on maternal

and child health (MCH). The emphasis on MCH is based on an innovative proposal by Colleen Denny and Ezekiel Emanuel [2] (a healthcare advisor to President Obama) known as the Mother and Child Campaign. This initiative would focus on MCH diseases including: diarrheal diseases, respiratory infections, tuberculosis

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(TB), malaria, vaccine-preventable diseases, neonatal conditions, and obstetric and maternal health problems' [2].

The architects of the Mother and Child Campaign have proposed funding MCH at the expense of future funding increases for PEPFAR [2]. The authors claim that PEPFAR 'is not the best use of international health funding' and 'fails to address many of the developing world's most serious health issues' [2]. Among the arguments presented by Denny and Emanuel for diverting funding away from PEPFAR include the contention that PEPFAR fails to focus on children based on the premise that 'Levels of attention and effort directed at preventing the small proportion of child deaths owing to AIDS with a new, complex, and expensive intervention seem... to be outstripping the efforts to save millions of children every year' [2,3].

Although we welcome the Mother and Child Campaign in a diverse portfolio of global health strategies funded by the United States, we are troubled by the 'either/or' mentality that places HIV/AIDS funding in direct opposition to initiatives to improve MCH. We do not accept the premise by Denny and Emanuel that the proportion of child deaths owing to AIDS is 'small,' nor do we support the characterization of HAART as 'new, complex, and expensive' [2,3]. We would argue that policies based on misrepresentations such as these threaten to undermine rather than support MCH worldwide.

## HIV affects children, mothers, families, and healthcare workers

In the five countries with the highest adult HIV prevalence worldwide, HIV is the single leading cause of under-five mortality and responsible for 41–56% of deaths (Table 1) [4]. In many other countries in Sub-Saharan Africa, death certificate misclassifications underestimate mortality attributed to HIV/AIDS by as much as 53.1%

[5,6] because the cause of death is often classified as the AIDS-related opportunistic infection without reference to HIV [5].

Despite the potential inaccuracies in HIV/AIDS statistics that underestimate prevalence and mortality, absolute HIV numbers are not decreasing. One thousand children were born with HIV everyday in 2007, due in part to the fact that less than 25% of all HIV-positive women worldwide have access to prevention of mother-to-child transmission [7]. Of children born with HIV today in Africa, only 20% are expected to survive until their second birthday without HAART [8].

HIV-positive children are not the only victims of this epidemic. All children born to HIV-positive mothers (who, in some regions of Africa, constitute 25% of childbearing women) are at a higher risk for morbidity and mortality if maternal-HIV is not treated effectively [7]. Longitudinal data on 3468 children of HIV-positive mothers in Africa found that uninfected children whose HIV-positive mothers gave birth 'at an advanced disease stage' were at significantly higher risk of death [8]. This may be attributable in part to the fact that children with HIV-positive caregivers reside in food-insecure households more often than their unaffected peers [9–11], putting them at higher risk for malnutrition and death from diarrhea and acute respiratory infection [12]. Caregiver death from HIV is also associated with poor outcomes for HIV-uninfected children, resulting in a (3–4X) fold increase in mortality [8,13].

Even more broadly, the AIDS epidemic impacts the healthcare systems in areas where children live. In Southern Africa, where HIV prevalence is the highest worldwide, HIV-related diseases monopolize more than half of all hospital beds [14,15]. Healthcare workers are not exempt from the epidemic. A study in Zambia found that 40% of midwives were HIV-positive [16] and estimates place seroprevalence rates for all healthcare workers in South Africa at approximately 16% [17]. Far from endangering MCH, devoting resources to untreated

**Table 1. Mortality statistics in the 10 countries with the highest HIV/AIDS prevalence worldwide based on the 2006 WHO mortality statistics [4].**

Rank	Country	Adult HIV prevalence (15–49 year) (%)	Under-5 mortality		All ages mortality	
			Deaths owing to HIV (%)	Mortality rank among other causes	Deaths owing to HIV (%)	Mortality rank among other causes
1	Swaziland	33.4	47	1st	64	1st
2	Botswana	24.1	54	1st	80	1st
3	Lesotho	23.2	56	1st	63	1st
4	Zimbabwe	20.1	41	1st	67	1st
5	Namibia	19.6	53	1st	51	1st
6	South Africa	18.8	57	1st	52	1st
7	Zambia	17.0	16	5th	43	1st
8	Mozambique	16.1	13	5th	28	1st
9	Malawi	14.1	14	4th	34	1st
10	Central African Republic	10.7	12	5th	32	1st

HIV will also necessarily improve the quality of care available to all mothers and children.

## HAART saves lives and money

Two reviews of HAART among HIV-infected children in Sub-Saharan Africa demonstrate that good immunologic, virologic, and clinical outcomes can be achieved despite the limitations of resource-limited settings [18,19]. Nutritional status improved, hospital admissions decreased by 58–71%, incidence of diarrhea decreased by 64%, and incidence of pneumonia decreased by 56% [18]. Twenty-eight studies reported ‘significant immunological reconstitution’ and probability of survival after 1 year of therapy was 84–97% [18].

Treating HIV-positive adults has been shown to positively impact the family as a whole, even those members who are not HIV-positive themselves. When HIV-positive adults were provided with cotrimoxazole prophylaxis alone, mortality among HIV-negative household members of 10 years or less decreased by 63% [13]. Malaria, diarrhea, and hospitalizations also decreased [13]. Parental HAART access provides even more dramatic results: HAART implementation resulted in ‘sharp improvements in (child) nutritional status,’ [20] and HAART and cotrimoxazole were associated with an 81% reduction in mortality in their uninfected children less than 10 years [13].

There is also an intimate link between HIV and maternal health. A study by Hogan *et al.* [21] estimated that in the absence of HIV, there would have been a 17.9% reduction in maternal mortality in 2008. Dr Murray, the senior author of the study, states: ‘It means, to us, that if you want to tackle maternal mortality in those regions, you need to pay attention to the management of HIV in pregnant women. It is not about emergency obstetrical care, but about access to antiretrovirals’ [22].

Unfortunately, only one-third of patients who qualify for HAART in resource-limited settings are able to access it [7,23]. Recently, the WHO revised guidelines for HAART initiation; an estimated five million HIV-infected patients would now qualify for treatment with the new guidelines [24]. Flat-lining PEPFAR funding increases would, in essence, constitute ‘treatment rationing’ for the millions of patients dying of this entirely treatable illness [23].

Recent literature has suggested that the cost of inaction is substantially greater than the cost of HAART. The cost-effectiveness arguments asserted by Denny and Emanuel [2] in favor of MCH initiatives over HIV treatment are misleading. Hogan *et al.* [25] conclude that HAART provides ‘good value for money...in terms of broad

measures of population health outcomes.’ Several studies show that failure to use HAART is even more expensive than HAART itself; the Brazilian Ministry of Health, having implemented a program of universal HAART access, reported savings of more than 2.2 billion US dollars between 1997 and 2001 alone [26]. A study from Côte d’Ivoire [27] noted that starting treatment earlier shows even more financial benefit, providing a savings of \$1180 for every year of life saved.

The indirect value of HAART is difficult to quantify, but no less important. It has been theorized that HAART may serve an important role in preventing HIV, both by lowering viral loads in HIV-positive persons [28] and by encouraging people to present for voluntary counseling and testing. Furthermore, numerous studies have demonstrated that access to HAART has been pivotal in helping communities overcome denial, stigma, and discrimination [25]. HAART may support healthcare infrastructure by allowing healthcare personnel to report more regularly to work [25,29]. HAART has contributed to the reduction in absenteeism in the workplace and to greater economic growth and development [30,31] in addition to reducing the financial burden that orphanhood places on communities and governments.

## The President’s Emergency Plan for AIDS Relief and primary healthcare systems: synergies and opportunities

We and others propose that HIV/AIDS Global Health Initiatives (GHIs) such as PEPFAR can advance and synergistically reinforce MCH and the overall healthcare infrastructure of the recipient country [24,32,33,35]. The WHO Maximizing Positive Synergies Collaborative Group has studied the interactions between GHIs and country health systems in detail, and report many positive associations between HIV/AIDS GHIs and their effects on strengthening primary healthcare systems [32].

In addition to improving outcomes for families infected and affected by HIV, PEPFAR has supported the care and treatment for milieu-specific diseases other than HIV/AIDS. Funding from PEPFAR has revitalized health facilities, increased the availability of qualified healthcare personnel, and enabled the expansion of ancillary support services such as pharmacies and diagnostic laboratories. TB and malaria have received funding (\$4 billion and \$5 billion, respectively) and infrastructure support from PEPFAR as well [34,35].

Two concrete examples of synergy between PEPFAR and MCH are Rwanda and Haiti. The original PEPFAR authorization of 2003 included HIV scale-up funding for countries such as Rwanda and Haiti where adult HIV prevalence was less than 3% [4]. According to the WHO,

the highest causes of morbidity and mortality in both Rwanda and Haiti were attributed to diarrheal diseases, respiratory infections, and/or maternal/obstetric/neonatal complications and not HIV/AIDS [4]. In fact, clinical outcome studies have demonstrated that PEPFAR has directly and indirectly led to better MCH health outcomes in both countries.

A study in Rwanda demonstrated that PEPFAR dollars 'contributed to broader health services, including reproductive health, prenatal, and pediatric services' [35–38]. Two months after HAART was provided at seven Rwandan PEPFAR sites, the average number of new hospital admissions dropped by 21%, allowing those healthcare facilities to focus on the other disease burdens of the community [37,38].

In Haiti, HIV-specific GHIs have led to an increase in primary healthcare services including vaccinations, family planning, and TB [32,39]. A severe limitation in the resource-limited setting is the availability of trained healthcare workers [32], but an innovative model pioneered in Haiti recruited and trained lay community health workers (CHWs) to assist patients with HIV/TB disease management including medication adherence [39]. Results were impressive; HIV prenatal seroprevalence decreased from 5 to 2.7% over 5 years with a treatment attrition rate of 2% [39]. Jerome and Evers [39] report that the recruitment of CHWs initially to support HIV/TB treatment has resulted in the 'diagonal expansion of the health workforce at a community level' toward other diseases including MCH.

Despite the evidence that disease-specific GHIs can reinforce MCH and the overall primary healthcare of recipient countries, several challenges remain. GHIs must aspire for better integration, resource-allocation, and accountability within the host country's healthcare system; too often duplication of health objectives owing to lack of communication between providers of health aid have contributed to a proliferation of parallel systems [32].

## Conclusion

HIV/AIDS is a significant threat to the health of families worldwide. It is a major cause of under-5 mortality and is intimately connected with MCH. The impact of PEPFAR on this epidemic goes well beyond treating the HIV positive individual and to limit PEPFAR funding would be a threat to the well being of families and communities in resource-limited settings.

In a speech to the parliament of Ghana, President Obama described US global health strategy in this way: 'We will carry forward the fight against HIV/AIDS. We will pursue the goal of ending deaths from malaria and tuberculo-

sis... and we won't confront illnesses in isolation – we will invest in public health systems that promote wellness and focus on [MCH]' [40]. We urge President Obama to reaffirm his presidential campaign promise of expanding PEPFAR by \$1 billion/year in new money over the next 5 years while also supporting MCH.

Confronting illness in isolation – whether by funding PEPFAR at the expense of programs that target MCH or vice versa – cannot be our way forward. Integrated health service delivery models that address the well being of both HIV-positive and HIV-negative families, without prioritizing one at the expense of the other must be developed, funded, and implemented. Similarly, family-centered models should be expanded to protect the integrity of caregiving structures by preventing the decline in health or death of primary caregivers while also improving pediatric health outcomes [41–43]. The complex and interrelated challenges of MCH against the devastating global backdrop of HIV require comprehensive models of care that combine HIV/AIDS and MCH initiatives.

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