

Reauthorise PEPFAR to Prevent Death, Orphanhood, and Suffering for Millions of Children

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As researchers on HIV, AIDS, and paediatric health, nothing is more central to our work than preserving children's lives. Considering the current challenge to the 5-year reauthorisation of the US President's Emergency Plan for AIDS Relief (PEPFAR), we used 2023 UNAIDS estimates on the prevalence of children orphaned by AIDS, infant and young child HIV-infections, and incidence of adult and child AIDS deaths to estimate PEPFAR's effect on child survival and health. We focused on sub-Saharan Africa: the region receiving more than 90% of PEPFAR funds and containing two-thirds of all people with HIV. We note that PEPFAR provides support through and in partnership with the Global Fund to Fight AIDS, Tuberculosis and Malaria (to which PEPFAR is the largest donor), national governments, UNAIDS, and other UN agencies.

PEPFAR has substantially reversed the devastating effects of HIV and

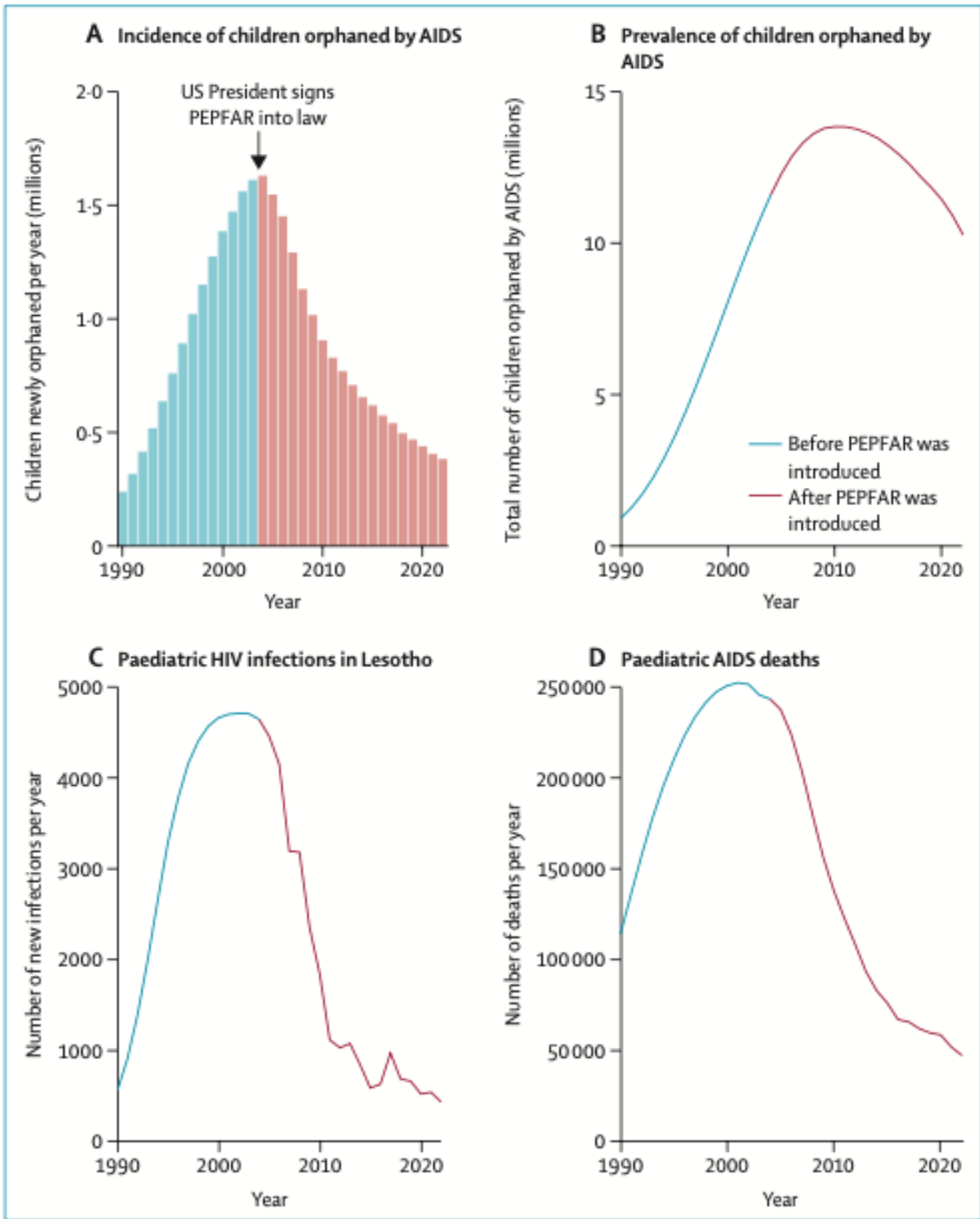


Figure: AIDS orphanhood, infant and young child HIV infections, and infant and young child AIDS deaths in sub-Saharan Africa
(A) Incidence of orphanhood caused by AIDS in sub-Saharan Africa (children aged <18 years who are newly orphaned per year). Regression model estimates were based on linear regression with no intercept term, 1-year lagged orphanhood prevalence, and new AIDS deaths for individuals aged 15–49 years, based on UNAIDS data. (B) Prevalence of orphanhood caused by AIDS in sub-Saharan Africa (living children

[aged <18 years] who were orphaned by the loss of at least one parent). Replication code is available at <https://github.com/MLGlobalHealth/PEPFAR-letter>. (C) New HIV infections due to vertical transmission (infants and young children aged <36 months) in Lesotho, 1990–2022, based on UNAIDS data. (D) Paediatric AIDS deaths in sub-Saharan Africa, based on UNAIDS data (infants and young children aged <36 months).

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Further Information

For **PEPFAR's legislative background** see <https://sgp.fas.org/crs/misc/IF12463.pdf>

For **2023 UNAIDS estimates** see <https://aidsinfo.unaids.org>

For more on **global resources for the HIV/AIDS epidemic** see <https://www.kff.org/global-health-policy/fact-sheet/the-global-hiv-aids-epidemic>

For more on **what PEPFAR has supported** see <https://www.state.gov/wp-content/uploads/2022/05/PEPFAR2022.pdf>

For **further results attributed to PEPFAR** see <http://www.miriamzoll.net/documents/USAID-PEPFAR%20VC%20Eval.pdf>

Recognition

LC declares research grants to her institutions from UK Research and Innovation, UNICEF, European Research Council, Wellspring Philanthropic Fund, the LEGO Foundation, the Global Fund to Fight AIDS, Tuberculosis and Malaria, a private family foundation that wishes to remain anonymous, and UK Medical Research Foundation; LC also received a consultancy from the Unified Budget, Results and Accountability Framework. JWI-E declares research grants to his institutions from UK Research and Innovation, the National Institutes of Health, Bill & Melinda Gates Foundation, UNAIDS, and WHO; and received a consultancy from Oxford Policy Management and a

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For any requests for data, please contact aidsinfo@unaids.org.

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Footnotes

1 Diamond D. Lifesaving HIV program faces a new threat: US abortion politics. 2023. <https://www.washingtonpost.com/health/2023/07/29/pepfar-aids-hiv-abortion-congress/> (accessed July 30, 2023).

2 Operario D, Underhill K, Chuong C, Cluver L. HIV infection and sexual risk behaviour among youth who have experienced orphanhood: systematic review and meta-analysis. *J Int AIDS Soc* 2011; 14: 25.

3 Hillis S, N'konzi JN, Msemburi W, et al. Orphanhood and caregiver loss among children based on new global excess COVID-19 death estimates. *JAMA Pediatr* 2022;176: 1145–48.

4 Newell M-L, Coovadia H, Cortina-Borja M, Rollins N, Gaillard P, Dabis F. Mortality of infected and uninfected infants born to HIV- infected mothers in Africa: a pooled analysis. *Lancet* 2004; 364: 1236–43.

5 Holtzman CW, Godfrey C, Ismail L, et al. PEPFAR's role in protecting and leveraging HIV services in the COVID-19 response in Africa. *Curr HIV/AIDS Rep* 2022; 19: 26–36.

6 Huffstetler HE, Bandara S, Bharali I, et al. The impacts of donor transitions on health systems in middle-income countries: a scoping review. *Health Policy Plan* 2022; 37: 1188–202.

7 Stover J, Glaubius R, Teng Y, et al. Modeling the epidemiological impact of the UNAIDS 2025 targets to end AIDS as a public health threat by 2030. *PLoS Med* 2021; 18: e1003831.

8 Chun HM, Dirlikov E, Cox MH, et al. Vital signs: progress toward eliminating HIV as a global public health threat through scale-up of antiretroviral therapy and health system strengthening supported by the US President's Emergency Plan for AIDs Relief–worldwide, 2004–2022. *MMWR Morb Mortal Wkly Rep* 2023; 72: 317–24.

9 Flanagan CF, McCann N, Stover J, Freedberg KA, Ciaranello AL. Do not forget the children: a model-based analysis on the potential impact of COVID-19-associated interruptions in paediatric HIV prevention and care. *J Int AIDS Soc* 2022; 25: e25864.