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Protecting Africa's children from extreme risk: a runway of sustainability for PEPFAR programmes

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PEPFAR (President's Emergency Plan for AIDS Relief), a landmark US foreign health policy, is recognised for saving 26 million lives from HIV. PEPFAR investments have also had life-saving impacts for children across sub-Saharan Africa through childhood HIV prevention, care, and treatment, ensuring 7·8 million babies were born HIV-free, supporting 13 million orphaned and vulnerable children, and protecting 10·3 million girls from sexual abuse. In this Health Policy, we review data from UNAIDS, UNICEF, World Bank, Violence Against Children Surveys, SPECTRUM model data, and Population-based HIV Impact Assessments; synthesise PEPFAR reports; conduct in-depth interviews; search PubMed for programme effectiveness evidence; and review economic reports. PEPFAR support is associated with substantial collateral benefits for the USA and Africa, including a four-fold increase in export of US goods to Africa, and US$71·6 billion in total goods trade between the USA and Africa in 2024. PEPFAR-supported countries in Africa are committed to ownership of HIV responses by 2030—overall, PEPFAR-supported countries in sub-Saharan Africa have progressively increased their co-financing of their health systems through domestic government and private expenditure from $13·7 billion per year in 2004 to $42·6 billion per year in 2021. The feasibility of a 5-year transition to country-led sustainability is supported by evidence of innovative cost-saving models of delivery, including through faith-based and community-based organisations, and high return-on-investment for PEPFAR programmes. There are also collateral benefits of PEPFAR for US and Africa national security and health security, for example, reducing forced migration and increasing capacity to control emerging transborder infectious disease threats. Risks in sub-Saharan Africa remain acute: one in five girls (younger than 18 years) experience rape or sexual assault; one in ten children (younger than 18 years) are orphaned; and a child (younger than 15 years) is estimated to die from AIDS every 7 min. Without continued PEPFAR programmes, models predict that by 2030, an additional 1 million children will become infected with HIV, 0·5 million additional children will die of AIDS, and 2·8 million children will additionally become orphaned by AIDS. There is now an opportunity for a transformational partnership between the USA and Africa, to accelerate domestic government co-financing, private-sector investments, and charitable foundations. A 5-year progressive runway of transition can occur through continued authorisation of PEPFAR programmes, which can lead to the end of AIDS for children and families, an historic achievement.

Introduction

After 20 years, the nightmares have returned. When I (LC) fall asleep, I'm back in the early 2000's, as a social worker at Cape Town Child Welfare Society. AIDS was decimating an entire generation of parents; I found foster homes for children while their mothers lay dying on blankets in their shacks. I took trafficked girls aged 13 years for HIV testing, knowing what the results would be. I tried to explain to children aged 6 years why everyone who had ever cared for them was now dead.

In January, 2003, US President George Bush announced the US President's Emergency Plan for AIDS Relief (PEPFAR)—an act of compassion which translated into Congressional action: the US Leadership Act Against HIV/AIDS, Tuberculosis, and Malaria.[1] Focused in sub-Saharan Africa, PEPFAR has had exceptional long-term success (figure 1A),[2] including the creation of supply chains and health systems that have brought life-saving antiretroviral medication to 20·6 million people at less than 1% of the per-patient cost in 1993; rapid adoption of effective biomedical and behavioural prevention strategies, including for women who are pregnant, in response to new evidence; the scale-up of highly effective prevention of perinatal transmission to maternity services across the continent, enabling the births of 7·8 million babies without HIV-infection,[3] and a legislated allocation of 10% of PEPFAR funding that has supported more than 13 million orphaned and vulnerable children.[4]

For 20 years, PEPFAR has ensured stability and impact through strong bipartisan support, with 5-year reauthorisations in 2008, 2013, and 2018 that allowed the USA to expand its protection of children by preventing violence against girls, supporting victims of childhood sexual abuse and exploitation, providing psychosocial care in the most deprived environments, and preventing HIV-infection for orphaned and vulnerable children. PEPFAR has prevented and responded to child sexual abuse, exploitation, and trafficking for over 10 million children, adolescents, and young women aged 10–24 years, through health facilities and communities.

PEPFAR's two-decade investment has been world-changing. Our review of PEPFAR annual reports from 2005–23[5] shows provision of HIV testing, treatment, and prevention services through visits of more than 1 billion children and adults. However, PEPFAR has had three recent setbacks. First, only a 1-year reauthorisation was approved in 2023, due to concerns over whether

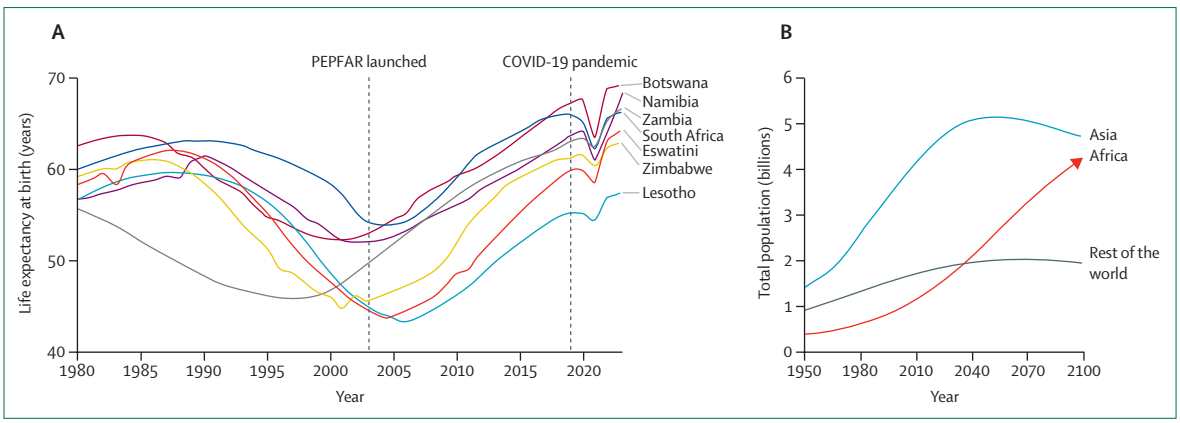


Figure 1: **Past and future demographic profiles in sub-Saharan Africa**
(A) Life expectancy at birth in seven countries in sub-Saharan Africa from 1980 to 2023, showing reductions linked to the HIV/AIDS pandemic, which rebounded following the launching of PEPFAR. Life expectancy again fell in 2019 due to the COVID-19 pandemic and rebounded. (B) Total population trends and projections from 1950 to 2100 by select global regions, with only Africa showing continued projected growth.[2] PEPFAR=President's Emergency Plan for AIDS Relief.

PEPFAR funding had been used to provide termination of pregnancy, which is legally prohibited for all USA foreign assistance.[6] Second, in January, 2025, PEPFAR's auditing of providers identified that, in Mozambique (where abortions are legal), four Ministry of Health nurses had performed 21 abortions, during a period of substantial civil violence. This violation of US law was detected through PEPFAR's strong compliance oversight, reported immediately, and corrective action was taken. New PEPFAR measures to reduce risk of future violations include: compulsory training of all PEPFAR-funded clinical staff in policies prohibiting the use of US foreign assistance funding to provide an abortion as a family planning method; individually signed annual attestations regarding compliance with US Government laws by all PEPFAR-supported partner staff that provide any PEPFAR clinical service; and expanded Country Operating Plan (COP) technical considerations and approval memos that outline US law prohibiting use of US funds for abortions. Third, the new presidential administration ordered a 90-day pause on US foreign assistance and approved a waiver allowing life-saving HIV treatment to continue, although enaction of that waiver has been severely challenged by removal of PEPFAR-supported USAID staff and frozen funding systems.[7,8]

Our Health Policy focuses on the evidence of PEPFAR's success and proposes using that success to build a 5-year runway of sustainability to protect children and families, particularly in sub-Saharan Africa. This runway will require a planned continuation of PEPFAR programme support, with progressively increasing domestic co-financing as a long-term solution for continuing to save lives. Investments should focus on communities and ensure continued access to HIV treatment; prevention of perinatal transmission; prevention of HIV and also prevention of sexual violence among orphaned and vulnerable children and girls; and increased Congressional oversight and accountability of the results of the programme. This runway to country ownership is needed to ensure and improve efficiencies, consistencies, strict enforcement of US foreign assistance legislation, and that this policy strengthens prosperity, safety, and strength for the USA.[1,7]

As the future of PEPFAR remains unclear, we examine evidence on PEPFAR's value for children, evaluate data on the effects for child health and wellbeing, examine effectiveness and reach of paediatric and adolescent prevention and treatment response, and propose crucial considerations for transitioning to country-led sustainability. The impacts for the USA and Africa of stopping PEPFAR programming are compared with those of building a runway of transition by continuing support for the US Leadership Act through another 5-year authorisation for PEPFAR programming, from 2025 to 2030. With Africa's growing population soon to account for one in four people worldwide[3] (figure 1B), we also consider research showing collateral benefits of PEPFAR programmes for the USA and Africa on health security, trade, and geopolitical stability, as well as new evidence suggesting that countries, such as China, are poised to overtake the transcontinental partnership that PEPFAR's diplomacy has built.

Approach

First, we identified risk levels for children (younger than 18 years) in sub-Saharan Africa. We reviewed data on children, orphanhood, sexual abuse, and HIV using UNAIDS, UNICEF, and Violence Against Children Survey estimates. We further report estimates of numbers and trends in orphanhood from all causes that UNAIDS produces annually using the SPECTRUM model. These data use established estimates of orphanhood based on mortality and fertility rates,[9–11] modified to include effects of treatment on parental survival and fertility-inhibiting effects of HIV infection.[12]

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Additionally, we generated pooled HIV seroprevalence estimates among children by orphanhood status based on Population-based HIV Impact Assessments from 14 high-burden countries that had taken samples from children younger than 18 years.[13,14]

Second, we described UNAIDS data from 2023, comparing distributions of HIV cases with HIV deaths in children as a share of total HIV cases and deaths globally; examined the numbers and percentages of children (aged 0–14 years) and adolescents (aged 15–19 years) living with HIV who are virally unsuppressed; and described the options for strengthening prevention of perinatal HIV transmission.

	Country	Programme	Design	Findings	Sustainability and reach
Economic strengthening					
Davis and Handa (2014)[15]	Kenya, Zambia, Zimbabwe, Malawi, Tanzania, Ghana Lesotho, and Ethiopia	Direct economic support (monetary transfers) for food and school	RCTs and quasi-experimental impact evaluations	Reduces child sexual abuse and exploitation; helps keep adolescents in school	Economic strengthening services including direct transfers, school fees, and microfinance programmes were provided for about 1·55 million girls (aged 10–24 years) in DREAMS and 4·35 million children (aged 0–17) in the OVC programme
Kim (2009)[16]	South Africa	Microfinance for mothers	Cluster RCT comparison of three randomly selected clusters: microfinance and gender norms, microfinance, and control	Microfinance and gender equity training reduce reoccurrence of intimate partner violence by 50%, reduces HIV risk, and improves household income	Scaled up as a component DREAMS programmes to adolescent girls and young women
Family strengthening					
Cluver (2018)[17]	South Africa and Tanzania	Parenting for lifelong health and ParentApp Digital	Cluster RCTs	Reduces child sexual abuse incidence by 57%; ten sessions cost of less than US$6; reduces abuse and substance use; improves parental supervision, household economic welfare, and adolescent sexual violence prevention	Over 5 years, DREAMS and OVC provided training for 448 000 people; overall, 8 million families were reached in more than 35 countries;[18] the Tanzanian Government has launched national programme
Vandenhoudt (2010)[19]	Kenya	Families Matter	Pre-design and post-design comparison of baseline measures for outcomes before programme with those after programme	Improves parent–child communication about sexual risk and abuse reduction and HIV prevention	Replicated in eight countries, reaching more than 400 000 people
Awareness, mentoring, or screening programmes					
Jewkes (2008)[20]	South Africa	Stepping Stones	Cluster RCT	Peer mentoring reduces herpes simplex virus-2 incidence (ie, sexually transmistted infections are an HIV cofactor) and intimate partner violence	DREAMS supported more than 10 000 adolescent girls and young women as mentors to deliver HIV prevention programmes to peers
Skevington (2013)[21]	India, Gambia, South Africa, Ethiopia, Angola, Tanzania, Uganda, Fiji	Stepping Stones	Systematic review	Peer mentoring reduces infection rates of herpes simplex virus-2 and stigma; improves communication about HIV risks	In 2023, DREAMS delivered HIV prevention programmes to 1·4 million girls in mentor-led safe spaces
Teaching boys and girls to use sexual violence prevention skills					
Baiocchi (2017)[22]	Kenya	No Means No Worldwide	Cluster RCT	Reduces child sexual abuse incidence by 42%	OVC and DREAMS reached more than 13 million girls in 5 years; support for programmes has transitioned to the Nigerian Government
Jones (2021)[23]	USA	Coaching Boys into Men	Cost-benefit analysis of two RCTs	Reduces perpetration of sexual violence, at cost-benefit of up to $2·4 million per 1000 participants	Tanzania National Institute of Education and Zambia Ministry of Health supports the programme; in 2023, Rwanda Ministry of Education committed to scale-up the programme over 3 years
Community protection					
Abramsky (2014)[24]	Uganda	SASA! Raising Voices and SASA! Faith	Cluster RCT	Community mobilisation of influencers reduced intimate partner violence by 52%	SASA! Raising Voices has been implemented by faith and community leaders in Uganda, Kenya, Zambia, Ethiopia, Malawi, and Tanzania
Kanagasabai (2023)[25]	Zambia	Faith Matters!	Pre-design and post-design comparison of baseline measures for outcomes before programme with those after programme	Faith leaders increased their conversations with youth about sexual abuse and HIV 3 months after the intervention, compared with baseline	Scaled within Zambia through interfaith network and expanded to Kenya, Uganda, and Zimbabwe

(Table 1 continues on next page)

	Country	Programme	Design	Findings	Sustainability and reach
(Continued from previous page)					
Accelerating HIV treatment adherence, viral load suppression, prevention for children and adolescents, and vertical transmission prevention					
Tafere et al (2023);[26] WHO (2019)[27]	Kenya and Ethiopia	Operation Triple Zero	Pre-design and post-design (Kenya) and comparison study (Ethiopia)	Kenya: VLS increased from 65% to 80% in children (aged 10–14 years) and 66% to 84% in adolescents (aged 15–19 years); Ethiopia: 92·4% in OTZ group *vs* 84·3% in VLS group	Ten countries with more than 1000 clinics serving more than 100 000 young people living with HIV
Willis et al (2019);[28] Mavhu et al (2020);[29] WHO (2019)[27]	Zimbabwe	CATS within the Zvandiri group-based support programme	Pre and post design, and RCT	Adherence to antiretrovirals increased from 42% to 72% after the CATS–Zvandiri programme; RCT shows CATS participants were 3·9 times more likely to adhere to antiretrovirals	Since 2004, Zimbabwe has scaled this programme from 51 of 63 districts, reaching 45 000 children and adolescents living with HIV; expanded to Eswatini, Mozambique, Rwanda, Uganda, Namibia, and Ghana
Makangila et al (2023)[30]	Zambia	Circle of Hope, faith-led and community-led posts	Non-randomised programme evaluation comparison	Faith-led and community-led community posts were more successful in identifying cases compared with provincial community posts in both men (32·5% *vs* 9·5%) and adolescent girls and young women (31·2% *vs* 7·3%); VLS was higher in faith and community-led community posts than in provincial community posts	Scaled in Zambia to seven of ten provinces by Zambian government; south-to-south replication in Zimbabwe, South Sudan, Kenya, Cote d'Ivoire; and adaptation into youth-friendly centres for girls (Malaika Houses) and boys (Destiny Houses)
Allison et al (2022)[31]	South Africa, Uganda, Kenya, Brazil, Thailand, and USA	Oral PrEP adherence	Systematic review of 29 studies (seven RCT, 19 cohort, and three other)	Adolescent and young adult adherence similar across countries, overall 64%	As of Dec 1, 2024, PEPFAR had newly enrolled 25 million people on PrEP (including oral or injectables)
Ford et al (2014)[32]	Included high-income, upper-middle-income, lower-middle-income, and low-income countries	HIV PEP adherence to 28-day course	Systematic review of 97 RCTs and non-randomised studies reporting PEP completion rates	PEP completion rates for were 36·6% for adolescents (95% CI 4·0–69·2), 64·0% for children (41·2–86·8), and 40·2% for sexual assault victims (31·2–49·2)	Adherence support is recommended for victims of sexual assault and adolescents as their adherence is poor; 2024 WHO Guidelines for Post-Exposure Prophylaxis of HIV[33] include regimens and considerations
Fonner et al (2023)[34]	Included countries in Africa, Asia, Latin America, and the USA	CAB-LA given every 2 months	Systematic review of safety and efficacy based on four double-blind RCTs	The pooled effect comparing CAB-LA with oral PrEP yielded a relative risk of 0·21 (0·07–0·061) showing a 79% reduction in HIV acquisition risk	WHO used Fonner et al (2023)[34] as basis for WHO guidelines on PrEP, determining CAB-LA to be safe and effective; PEPFAR has supported roll-out in Zimbabwe, Malawi, and Zambia
Johnson et al (2024)[35]	South Africa	CAB-LA given every 2 months for pregnant and breastfeeding women and their infants	Modelling study comparing CAB-LA, oral PrEP, and allowing choice between oral PrEP or CAB-LA	CAB-LA reduced risk of HIV acquisition during pregnancy and breastfeeding by 41·2% (95 CI 19·8–65·0); by 12·6% (6·0–19·4) in infants at or before birth; and by 29·5% (13·9–46·8) through breastmilk, performing substantially better than oral PrEP, but similar to the group given a choice	Increased use of CAB-LA to prevent vertical transmission during pregnancy and breastfeeding would be relevant for sub-Saharan Africa, where HIV acquisition during pregnancy and breastfeeding are important drivers of vertical transmission
Endershaw (2024)[36]	Sub-Saharan Africa	Consistent condom use among people living with HIV	Systematic review and meta-analysis of 33 studies	Pooled prevalence of 42·5% (95% CI 20·3–64·7) for consistent condom use	Study examined consistent condom use with non-marital partners

Examples chosen as primary PEPFAR interventions recommended in COP guidance from 2021–24. CAB-LA=long-acting injectable cabotegravir. CATS=Community Adolescent Treatment Supporters. COP=Country Operating Plan. DREAMS=determined, resilient, empowered, AIDS-free, mentored, and safe. OTZ= Operation Triple Zero. OVC=orphans and vulnerable children. PEPFAR=President's Emergency Plan for AIDS Relief. PEP=post-exposure prophylaxis. PrEP=pre-exposure prophylaxis. RCT=randomised controlled trials. VLS=viral load suppression.

Table 1: **Example evidence-based PEPFAR programmes**

Third, we reviewed PEPFAR's programming model for Orphans and Vulnerable Children (OVC), efforts to prevent and respond to sexual abuse of children and adolescents, strategies for improving HIV viral load suppression in children, and HIV prevention programmes for girls. We also synthesised PEPFAR reports and conducted in-depth interviews with 12 programme leaders within the US Department of State from OVC, Determined, Resilient, Empowered, AIDS-free, Mentored, and Safe (DREAMS), and paediatric HIV programmes.

Fourth, we assessed evidence for effectiveness and reach of the programmes. We used PEPFAR COPs and COP guidance to identify approved interventions and then conducted searches for experimental and quasi-experimental evidence for these interventions using both PubMed and reviews for INSPIRE's Seven Strategies for Ending Violence Against Children (table 1).[37] Fifth, we explored pathways to sustainability for PEPFAR's programming via World Bank Development Indicators,[38] government reports, and think-tank reports. Sixth, we examined evidence on how responses to HIV lead to health security, economic growth, and educational, trade, and diplomatic benefits by using published studies, policy, strategy, and economic reports, including government and government-affiliated reports. Lastly, we reviewed epidemiological and resilience research to

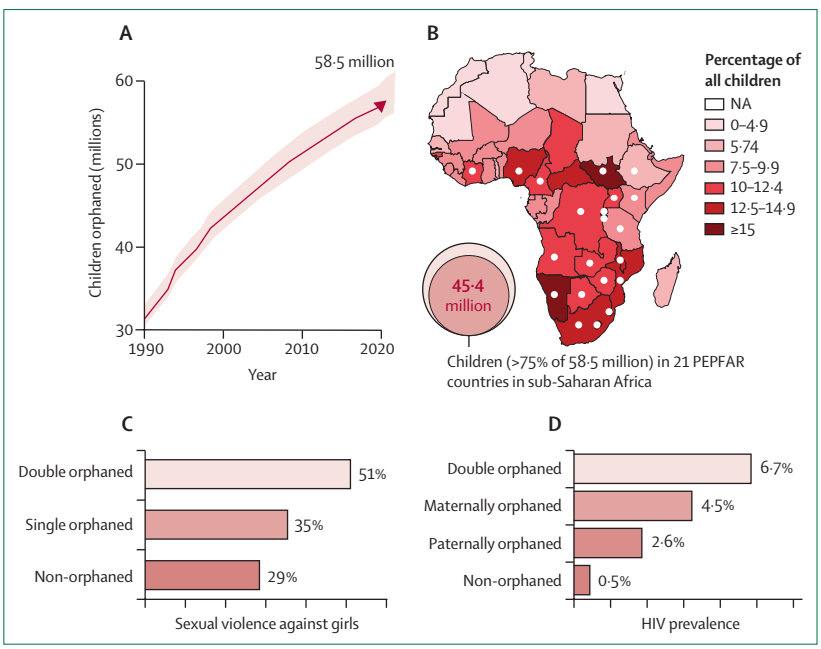


Figure 2: **Trends in all-cause orphanhood in sub-Saharan Africa, 2022**
(A) Distribution of orphanhood in sub-Saharan Africa shows 77·6% of orphans in countries with PEPFAR country offices. Grey area=95% CI.[14] (B) Orphanhood prevalence in 2022 (as shown by white circles). (C) Sexual abuse and violence among orphaned girls (age 13–24 years) in Kenya.[42] (D) HIV prevalence among orphaned children in high-burden locations. Includes Population-based HIV Impact Assessment Survey data from 14 countries (Cameroon [2017], Côte d'Ivoire [2017], Eswatini [2017], Ethiopia [2018], Kenya [2018], Lesotho [2017], Malawi [2016], Namibia [2017], Nigeria [2021], Rwanda [2019], Tanzania [2017], Uganda [2017], Zambia [2016], and Zimbabwe [2016]). Data were standardised using biomarker weights within each survey, the calculations used weighted proportion of type of orphan and pooled them across surveys to give an estimate representative across countries, then calculations used weighted HIV prevalence by orphanhood group pooled across surveys.[14] NA=not applicable. PEPFAR=President's Emergency Plan for AIDS Relief.

outline child-focused HIV impacts of a world without PEPFAR.

PEPFAR: addressing HIV risks for children and adolescents

Orphanhood (from any cause), child sexual abuse, and childhood HIV-infection are not only moral imperatives to address, but also PEPFAR priorities due to associations with increased HIV prevalence, sexually transmitted infections, mental health, substance abuse, and chronic disease.[39] We reviewed new data to determine burden, levels of risk, associations with HIV/AIDS, and outcomes for children living with HIV. Findings show high epidemiologic burden, and that orphanhood and child sexual abuse would escalate without PEPFAR.

Before PEPFAR made antiretrovirals widely available within sub-Saharan Africa, AIDS had killed more than 20 million people, mostly parents,[12] with life expectancies in many countries decreasing to age 40–50 years in several countries (figure 1A). After parental death, children remain orphaned for their lifetime, although they are only classified an orphan until age 18 years. In sub-Saharan Africa, the number of children orphaned by AIDS was more than 14 million in 2010 and gradually decreased to 10·5 million children in 2023 as effective HIV treatment became widely available and parents' lives were saved.[40]

However, orphanhood is increased by population growth and other risks of parental death. Examination of UNAIDS epidemiological estimates show substantially higher rates of all-cause orphanhood in sub-Saharan Africa than previously recognised.[41] In 2023, more than 58·5 million children (95% CI 56·3–61·2)—one in ten children in the region— experienced the death of a mother, father, or both parents (figure 2A). This rate includes children orphaned by AIDS, epidemics, war, natural disasters, and other causes of parental death. The 21 countries with PEPFAR offices are home to 45·4 million orphaned children—77·6% of the total number of children (table 2; figure 2B).[41,43] Using data from Population-based HIV Impact Assessments on household-based HIV-testing in children in high-burden countries,[44] our pooled estimates across 14 countries show HIV-prevalences of 0·48% (95% CI 0·44–0·53) among children whose parents are both living, 2·6% (2·3–3·0) among paternally orphaned children, 4·5% (3·9–5·1) among maternally orphaned children, and 6·7% (5·7–8·1) among children whose parents have both died (figure 2D).

Rates of sexual violence are also high throughout sub-Saharan Africa. In 2024, the first global monitoring of sexual violence against children found that 22% of girls in southern and eastern Africa experience rape or sexual assault by the time they are age 18 years.[45] An analysis of 17 Demographic and Health Surveys and AIDS Impact Surveys found that, based on pooled weighted estimates across countries, sexual violence increased among paternally orphaned children (odds ratio [OR] 1·36, 95% CI 1·8–1·7) and children whose parents have both died (OR 1·47, 1·08–1·99).[46] Kenya's Violence Against Children survey[47] found that orphaned girls were at increased risk of lifetime rape or sexual assault: girls whose parents were both living had a risk of 29·4% (95% CI 24·5–34·3), girls who are maternally or paternally orphaned had a risk of 35·2% (24·7–45·7), and girls whose parents had both died had a risk of 50·9% (32·6–69·2; figure 2C). Childhood sexual abuse increases risks of HIV infection, both as a direct result of sexual violence, and through long-term impacts including trauma, low self-esteem, and sexual exploitation.[48]

Sub-Saharan Africa is home to 89% of children living with HIV globally,[49] and there are marked disparities in HIV outcomes between children and adults. Analyses of UNAIDS viral load suppression data in 2023[50] estimated 1·5 million children (aged 0–14 years) and adolescents (aged 15–19 years) living with HIV globally are virally unsuppressed, with elevated risk of childhood death (figure 3B). The UNAIDS Global AIDS Report shows that although 73% of adults living with HIV are virally suppressed, this status is only reached by 48% of children (aged 0–14 years) and 55% of adolescents (aged 15–19 years).[50] In 2023, children comprised 3% of all HIV cases globally, but 12% of AIDS-related deaths (figure 3A).[50]

Faith and community partnerships

African faith leaders and faith-based organisations have been core partners of PEPFAR since its inception in 2003.[51] Faith communities often have a long-standing and trusted community presence, direct connections to families, and deep knowledge of local social networks. In most high HIV-burden countries, 85–95% of the population considers faith very important to them.[52] Faith-based organisations, faith communities, and local communities are responsible for identifying children and adolescents living with HIV, providing life-saving treatment, care for orphaned and vulnerable children, and protecting girls from sexual abuse.[53] Faith and community-led programmes evaluated through PEPFAR's Faith and Community Initiative[53] include Maliaka and Destiny Houses, co-location of HIV service sites at religious venues, the Baby Shower model of congregational testing,[54] Faith Matters!, and SASA! Faith[24] (table 1). In recipient countries, local government, community, and faith sector collaborations have helped strengthen sustainability of PEPFAR's programming for children.[51]

PEPFAR programming protects children and adolescent girls

Within PEPFAR, three pioneering programmes work closely together to protect children and adolescent girls. In 2006, Congress mandated that at least 10% of the PEPFAR budget supports an OVC programme, including health care, education, psychosocial support, and protection for children affected by HIV/AIDS (figure 4A).[55,56] In 2014, PEPFAR launched the DREAMS model, in recognition of doubled rates of HIV infections in adolescent girls and young women compared with males.[57] DREAMS combats causes of incident HIV through an evidence-based package addressing structural, behavioural, and biomedical risks (figure 4B). To close disproportionate gaps in paediatric treatment and prevention, PEPFAR launched an initiative to accelerate progress in paediatrics and Prevention of Mother to Child Transmission (PMTCT) in 2022. We examined the evidence base, reach, and sustainability potential of these programmes.

PEPFAR OVC programmes engage with communities and local partners (such as faith and traditional leaders; figure 4A), reaching more than 13 million orphaned and vulnerable children in total, including children living with HIV and child survivors of sexual abuse and exploitation. OVC preventive programmes reduce HIV infection and sexual violence through programmes evaluated in randomised or quasi-experimental evaluations,[17,19,22,23,25,58] with several in early stages of transitioning support to country governments (table 1). The programmes also address early identification of sexual abuse. All staff receive training in safeguarding, mandatory reporting, and referrals, including into OVC comprehensive services, which provide HIV and sexual abuse response services[59] (eg, economic strengthening,[15,16] education support, building parenting skills, and HIV care and treatment). For recipient families, graduation

	Population (aged 0–17 years)[43]	Number of orphans (95% CI)[41]	Orphanhood prevalence (95% CI)*
Nigeria	108 864 080	13 900 000 (13 700 000–14 000 000)	12·77% (12·58–12·86)
Democratic Republic of the Congo	53 808 048	5 680 000 (5 580 000–5 770 000)	10·56% (10·37–10·72)
Ethiopia	58 480 672	2 990 000 (2 860 000–3 200 000)	5·11% (4.89–5·47)
Tanzania	32 182 156	2 660 000 (2 510 000–2 800 000)	8·27% (7.80–8·70)
Uganda	24 391 759	2 500 000 (2 280 000–2 680 000)	10·25% (9·35–10·99)
South Africa	19 566 105	2 480 000 (2 320 000–2 740 000)	12·67% (11.86–14.00)
Kenya	24 461 951	2 370 000 (2 210 000–2 560 000)	9·69% (9·03–10·47)
Mozambique	16 854 766	2 200 000 (2 020 000–2 410 000)	13·05% (11.98–14.30)
Angola	18 263 391	1 850 000 (1 800 000–1 890 000)	10·13% (9.86–10·35)
Côte d'Ivoire	14 609 980	1 680 000 (1 620 000–1 740 000)	11·50 % (11·09–11·91)
Cameroon†	13 458 393	1 420 000 (1 330 000–1 510 000)	10·56%
Malawi	10 127 604	1 270 000 (1 150 000–1 420 000)	12·54% (11·36–14.02)
Zambia	9 950 975	1 000 000 (930 000–1 140 000)	10·05% (9·35–11.46)
Zimbabwe	7 790 617	850 000 (760 000–1 010 000)	10·91% (9·76–12·96)
South Sudan	5 353 260	830 000 (810 000–860 000)	15·50% (15·13–16·06)
Burundi	7 049 655	630 000 (610 000–650 000)	8·94% (8·65–9·22)
Rwanda	6 168 602	480 000 (450 000–530 000)	7·78% (7·30–8·59)
Namibia	1 247 982	210 000 (190 000–240 000)	16·83% (15·22–19·23)
Lesotho	949 146	180 000 (190 000–240 000)	18·96% (16·86–22·13)
Eswatini	491 984	120 000 (110 000–140 000)	24·39 (22·36–28·46)
Botswana	940 827	100 000 (94 000–130 000)	10·63 (9·99–13·82)
Total	435 011 958	45 400 000 (45 100 000–45 700 000)	10·44 (10·31–10·56)

PEPFAR=President's Emergency Plan for AIDS Relief. *Orphanhood prevalence was calculated by dividing number of orphans by population of children aged 0–17 years. Totals were calculated by summing country central estimates, with the confidence interval for the total calculated assuming independent normal distributions for each country. †Estimates for Cameroon are not reported in the UNICEF dataset; therefore, the central estimate was obtained from the SPECTRUM model. Totals were calculated by summing up the country's central estimates, with the confidence interval for the total calculated assuming independent normal distributions for each country.

Table 2: **Orphanhood prevalence due to all causes for 21 countries in sub-Saharan Africa with PEPFAR Country Offices, 2022**

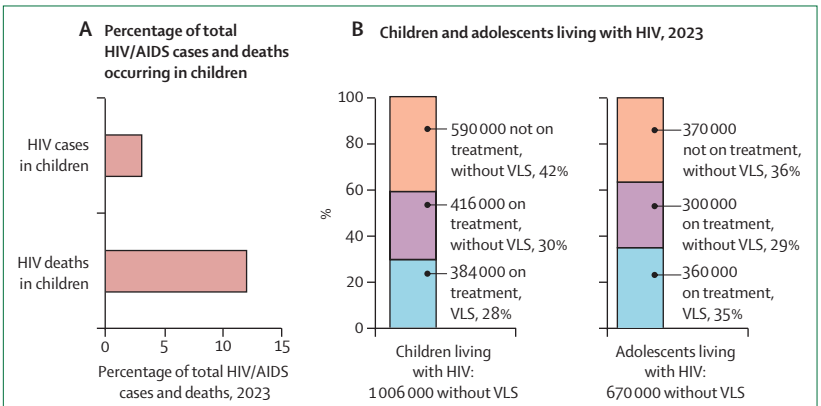


Figure 3: **HIV risks among children**

(A) Percentage of total HIV/AIDS cases and deaths in children (aged 0–14 years) globally. (B) Children and adolescents living with HIV. There are high numbers of children (aged 0–14 years) and adolescents (aged 15–19 years) living with HIV who are not virally suppressed (including both those not on treatment and those reported to be on treatment), with a total of more than 1·5 million children and adolescents.[50] VLS=viral load suppression.

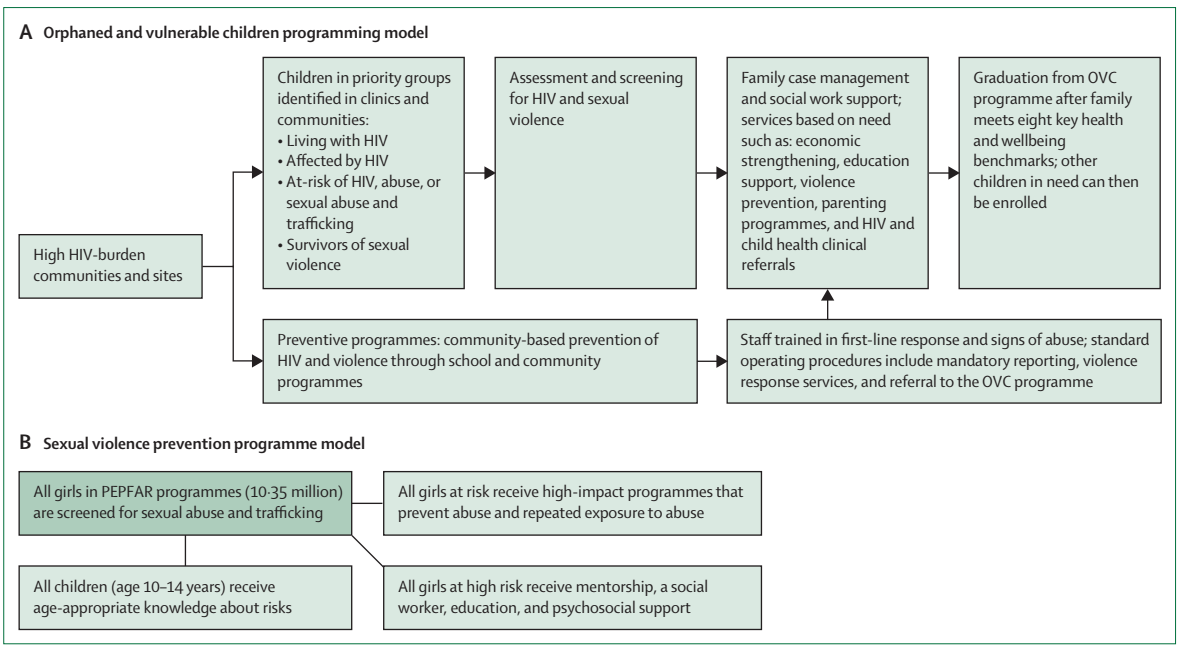


Figure 4: **PEPFAR models for OVC services and sexual violence and HIV prevention for girls, youth, and children**
(A) PEPFAR OVC screening and service model that guides identification, care, and graduation of beneficiaries. (B) PEPFAR's model for protecting adolescent girls, youth, and children from sexual violence and HIV through the DREAMS and OVC programmes. PEPFAR's system is one of screening, referral, prevention of repeated abuse, and support for children and adolescents through faith and community-based organisations (appendix). DREAMS=determined, resilient, empowered, AIDS-free, mentored, and safe. OVC=orphans and vulnerable children. PEPFAR=President's Emergency Plan for AIDS Relief.

See Online for appendix

from the programme occurred once stability across eight health and wellbeing domains were achieved.[60]

DREAMS helps to prevent causes of HIV infection for adolescent girls and young women including sexual violence, poverty, and inadequate access to education, and is supported in communities with high HIV prevalence in 15 countries in sub-Saharan Africa with local faith-based and community-based partners (figure 4B).[61] OVC and DREAMS are also uniquely positioned to accelerate uptake of evidence-based HIV prevention (eg, long-acting injectable pre-exposure prophylaxis [PrEP], post-exposure prophylaxis, and condoms) through trusted services for children, adolescents, and young women at risk of HIV and sexual violence (table 1).[32–36] Crucially, these prevention measures also reduce risk of HIV acquisition to mothers and children during pregnancy and breastfeeding.[62]

PEPFAR programming for children living with HIV funded life-saving medication for 556 000 children in 2024, in addition to the prevention of perinatal transmission of HIV in 20 countries,[3] such as in the Democratic Republic of the Congo, where 26% of children born to mothers living with HIV were infected through pregnancy, birth, or breastfeeding in 2023.[50] PEPFAR's Accelerating Progress in Pediatrics and PMTCT initiative has led to an overall 52% increase in the number of children tested in the 20 countries,[3] and an increase in HIV viral load suppression over 3 years.[63] These successes have been driven by the introduction of dolutegravir for all children living with HIV, and through the groundbreaking PEPFAR-supported Vatican Initiative, which fast-tracked the development of paediatric HIV formulations.[64] PEPFAR has supported programmes with strong evidence of improving childhood viral load suppression, such as Zvandiri[28,29] and Operation Triple Zero,[26,29] both using locally-based models of young peer supporters, support groups, and digital innovation.

Across these three programmes there is a strong focus on prevention and healing related to child sexual abuse, trafficking, and exploitation. Specifically, all children and adolescents (age 10–14 years) included in PEPFAR programmes receive age-appropriate knowledge about HIV and sexual abuse risks, and all girls, adolescents, and young women (age 10–24 years) are assessed for risk. Services to support survivors and prevent further harm include mentorship, psychosocial support, social asset building, PrEP,[65,66] and education-focused economic strengthening (eg, microfinance), and sexual violence prevention for boys (younger than 18 years), and girls and women (age 10–24 years; table 1).[19–21,23,24,67]

These programmes also support long-term sustainability of PEPFAR's investments by building resilience and reducing children's lifetime risk of HIV; strengthening sustainability of government child welfare systems (eg, through training local social workers); and using Violence Against Children Surveys to establish national multisector sexual violence prevention action

plans led by governments in 16 countries in sub-Saharan Africa,[67] thus embedding child sexual abuse and trafficking prevention within government services.

A new runway of action to achieve HIV response sustainability

Plans between the USA and Africa for a transition to sustainability are already underway. Correspondence by African leaders—including the African Union Special Envoy for the African Medicines Agency, Afrian bishops, other esteemed faith leaders, and HIV experts—shows that national governments, faith leaders, and community leaders are committed to progressive country ownership of HIV responses, while highlighting that ownership is only possible through planned transition.[68]

Domestic financing by African governments and private-sector investments has progressively increased in PEPFAR countries since the full-scale implementation of PEPFAR in 2004. A new report using World Bank Development Indicators shows that total combined domestic government expenditure and domestic private expenditure on health in PEPFAR-supported countries in sub-Saharan Africa increased from US$13·7 billion per year in 2004 to $42·6 billion per year in 2021.[38]

A 5-year runway to transition is consistent with the African Union commitments in the 2001 Abuja Declaration for increasing domestic health investments,[69] and achievable through closing investment gaps via annual incremental increases in domestic funding, integration of services, and mobilising funding from domestic and global donors (including philanthropic and charitable donors within, and beyond, the health sector) and the private sector.[69] African leaders have proposed matching grants for community-based models, in which global funding is tied to each country's progressively increasing domestic funding for the health sector. Integration of cost-effective community-based models for children and adolescents[30,70] would reduce child sexual abuse and trafficking, protect orphaned children, and sustain paediatric HIV treatment and care. This runway will protect children and families and safeguard global health security, as in the next 25 years half of all children and adolescents (age 0–19 years) in the world are predicted to live in Africa.[2] The foundation of growing domestic co-financing for this runway of sustainability by PEPFAR-supported countries in sub-Saharan Africa has progressively increased since PEPFAR began. Continuing US investments through programmes will help to ensure the notable goals of PEPFAR are successfully completed by 2030.

Priorities and progress for achieving HIV response sustainability for children and families

Transformative country leadership, expanded partnerships, and faith and community-led innovations to simplify services and reduce costs, will promote HIV response sustainability. Previously, PEPFAR's 2024 Vision for Sustainability included country-led plans that aimed to catalyse political, programmatic, and financial progress, and were aligned with UNAIDS HIV Response Sustainability Roadmap tools.[71] These plans included predicting, preventing, detecting, and responding to new infections; sustaining HIV viral load suppression; reaching targets for reducing causes of HIV (including sexual abuse); identifying and supporting orphans and vulnerable children; and preventing HIV among adolescent girls.

PEPFAR's 2023 COP Guidance[72] and the UNAIDS HIV Sustainability Roadmap Primer[73] outline country-led processes: (1) co-investment policy; (2) population viral load suppression and reducing new HIV infections; (3) strengthening national systems; and (4) creating efficiencies through simplification and differentiation. PEPFAR-designated countries are developing unique HIV Response Sustainability Roadmap plans (originally intended for June, 2025, now potentially postponed by the pause in US foreign assistance), to continuously improve sustainability indicators through 2030. The Guidance outlined in the 2024 PEPFAR Report to Congress provides an accountability framework, measures for tracking, and a co-investment policy. The HIV Response Sustainability Roadmap outlines key indicators of political will (ie, incorporating management, coordination, and stewardship), enabling laws and policies, equitable financing, HIV treatment and prevention services, and health systems.

Collateral benefits for children and families

Economic, educational, and health

Evidence suggests that PEPFAR's HIV investments have brought economic, educational, and health benefits for children and families beyond HIV. Econometric studies using difference-in-difference approaches found a 13% increase in population-level male employment in ten PEPFAR focus countries, compared with countries receiving little to no PEPFAR support.[74] This increased employment alone produced economic returns equalling half of PEPFAR's investments. Another study compared 90 countries receiving PEPFAR support (from 1990 to 2018) with 67 countries receiving little to no PEPFAR support.[75] The study showed considerable increases in gross domestic product per capita growth rates, and substantial educational benefits through increased schooling for both girls and boys,[75] strengthening PEPFAR recipient countries as established US trading partners.[1] Furthermore, from 2004 to 2018, PEPFAR countries with COPs showed a 20% reduction in all-cause mortality,[76] 25% reduction in maternal mortality, 35% reduction in child mortality, and an increase of 8–11% in childhood immunisations for measles, hepatitis B, diphtheria, tetanus, and polio.[77]

An economic analysis assessed returns on a core package modelled on PEPFAR's OVC and DREAMS programmes of economic strengthening, evidence-based parenting programmes, and child and youth-friendly health services in Kenya. The study showed that for

investments of $24 million per year over ten years, macroeconomic returns exceeded $900 million through increased labour market productivity, which was caused by increased school enrolment; prevention of new HIV infections, child marriages, and pregnancies; and an averted 63 000 cases of child physical, verbal, and sexual abuse[78] (linked to exploitation and trafficking[79]). These substantial returns on PEPFAR investments can create domestic resources that can help strengthen country-led sustainability of HIV pandemic responses.

Geopolitical stability, health security, and prosperity for the USA and sub-Saharan Africa

Sub-Saharan Africa is the only region in the world where the youth and working-age population are growing.[80] This fact opens new opportunities for accelerating health security, prosperity, and stability[81] in both the USA and sub-Saharan Africa by harnessing the demographic dividend inherent of a larger working-age population than dependent-age population (figure 1B). Over 15 years, analyses of Gallup surveys, from 2003 to 2016, show that PEPFAR investments are consistently associated with higher public opinion of the USA worldwide,[82,83] improving US national security through trusted relationships with allies, increased trade, and strengthened capacity to detect and respond to new epidemics and pandemics.[82,84]

As a US foreign policy, PEPFAR investments appear to strengthen strategic diplomacy required to advance such benefits for both the USA and Africa. In the same time period as PEPFAR, for example, US goods exports to Africa (eg, motor vehicles and parts, aircraft, oil and gas field equipment, mineral fuels, and wheat) have increased four-fold from $6·9 billion in 2001 to $32·1 billion in 2024.[85] By working together to address challenges following the 2022 US–Africa Leaders Summit, bilateral partnerships enabled $71·6 billion in two-way trade and investment agreements, including in essential minerals, between the USA and African countries, in 2024.[85]

Collateral benefits are foundational for protecting geopolitical stability, strengthening health security, and revitalising partnerships needed to expand transnational trade with Africa, which is home to nine of the world's fastest-growing economies in 2024.[86] For example, the PEPFAR-linked growth in economic productivity of countries helps protect families and societies from destabilisation and reduces risks of forced migration that follow political and economic collapse. PEPFAR health information systems, surveillance, and laboratory services also strengthen pandemic preparedness and response, as observed for COVID-19 (figure 1A)—more than 3·4 million SARS-CoV-2 tests were conducted by PEPFAR-supported sites over one year across 16 countries. PEPFAR systems capacitate countries to control emerging threats, including transborder global health security risks such as haemorrhagic fevers.[82,84]

If the USA discontinues PEPFAR, reports suggest other countries are poised to assume leadership. For example, two recent studies of China's foreign assistance policy[87,88] show that China has become an important health donor to Africa when measured in project value, with a shifting focus towards infectious diseases. China's investments have also transitioned towards health system strengthening and global health security, and extend beyond health to the majority share of mineral wealth in Africa, such as cobalt, copper, lithium, and manganese, which the USA depends on for mobile phones, electric vehicles, military applications, and satellites.[89] Recent evidence describes Iran's increased aid to Africa, including to orphaned and vulnerable children, as important for their strategic soft diplomacy.[90]

The US Department of Defense report to Congress in December, 2024, highlights China's priorities for expanding satellite navigation systems throughout Africa.[91] A US Defense Intelligence Agency Report shows that these satellites are used by China's military to enable force movements, enhance command, control, and communications capabilities, and strengthen precision-guided munitions delivery.[92] A US commitment to health diplomacy in Africa also presents a strategic opportunity to strengthen trade, protect the US from transborder infectious diseases, and defend national security in partnership with African governments.

Two-way benefits for children, families, and communities

The 21st century has seen a shift from country-level challenges to global megatrends, such as COVID-19 and the globalised narcotic trade. Global challenges are also increasingly affecting children in the USA. A 2025 *Nature Medicine* study of children in the USA found a 50% increase in orphanhood from 2000 to 2021. Nearly 3 million children in the USA have experienced the death of a caregiver.[93] Using lessons from evidence-based care for orphaned children in Africa can inform increasingly needed solutions for orphaned and vulnerable children in the USA.

Online-facilitated child sexual abuse and exploitation have also increased exponentially, facilitated by widespread internet access. In 2024, a national US study found that 32% of 1762 girls (standard error 28·4–35·0) had experienced sexual abuse by age 18 years.[94] PEPFAR's child-focused models have promoted the development of high-impact, scalable and cost-effective systems, services,[22,23] and programmes that prevent and respond to child sexual abuse, exploitation, and trafficking across Africa and the USA, such as No Means No[22] and Families Matter.[19] The Violence Against Children Surveys have worked with 15 African governments to build national action plans to prevent childhood violence, bringing this highly effective model to the USA in 2025.[67]

Three types of support can help improve outcomes for children experiencing severe adverse experiences, such as HIV infection, parental death, or childhood sexual violence:[95] a consistent and loving caregiver,[96] economic stability,[97] and medical and mental health care.[98] In all these factors, reliability and security are essential for

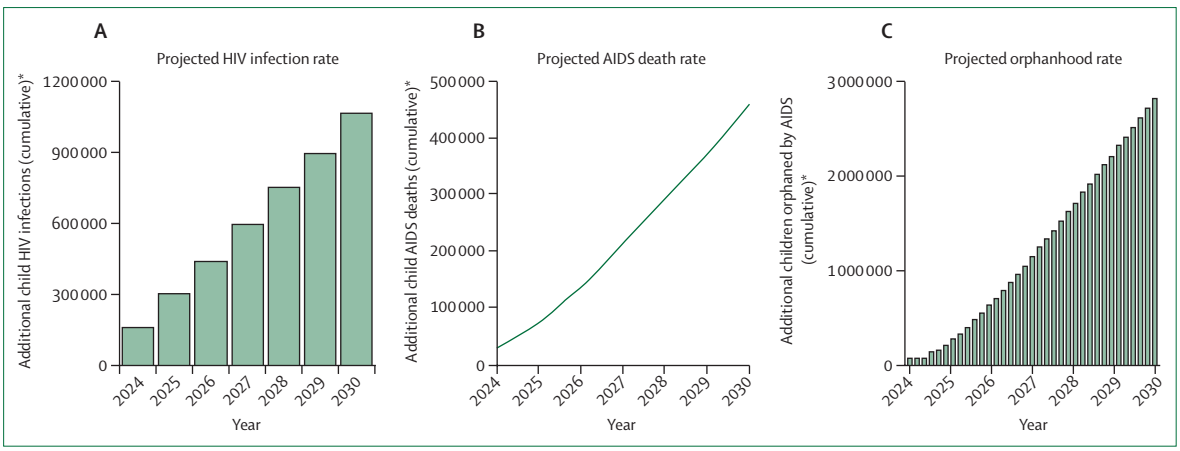


Figure 5: **Children are at extreme risks of HIV infection without PEPFAR**
(A) Without PEPFAR, 1 million more new child HIV infections, (B) 460 000 more child deaths caused by AIDs, and (C) 2·8 million more children orphaned by AIDS, are all projected by 2030. Projection scenarios for 2024–2030 were based on modelling the complete cessation of PEPFAR in 2024 against the counterfactual of constant coverage of five interventions (preventing perinatal transmission to reduce child infections; paediatric antiretroviral therapy to reduce child death; adult antiretroviral therapy to reduce adult death and AIDS orphans; voluntary medical male circumcision; and key populations services to reduce adult prevalence of HIV) at the 2022 level (a combination of both PEPFAR and non-PEPFAR interventions). To model the number of children affected by the immediate and complete cessation of PEPFAR, the PEPFAR 2022 services were subtracted from the anticipated 2024 coverage in the absence of PEPFAR for the modelled interventions and carried that coverage level forward through 2030.[5] PEPFAR=President's Emergency Program for AIDS Relief. *Cumulative deaths 2024–30 among children aged 0–14 years.

children.[99] The effects of the recent freeze of USAID foreign assistance has shown the extent of child fragility. As of March 10, 2025, due to challenges implementing the waiver, 7·4 million parents, children, and family members are unable to access their next packet of antiretroviral medication; of these people, 205 577 are children aged 0–14 years, and at least 440 000 pregnant mothers and their babies are unable to access medicine to prevent HIV infection in pregnancy, birth, and breastfeeding.[100]

Based on predictive modelling using the HIV Goals model,[18] by 2030, an additional 13·4 million people will die of AIDS if their HIV treatment provided through PEPFAR-supported supply chains, clinical staff, or essential services, cannot be continued and restored. If country health systems can reallocate funding to keep as many people on antiretroviral therapy as possible, an estimated additional 7·5 million people will still die of AIDS if PEPFAR programmes stop. Without PEPFAR programmes and strong commitments to domestic co-financing for sustaining the HIV response, life expectancies are likely to substantially reduce, leaving millions of children orphaned (figure 1A). A new modelling study[18] indicates that, without PEPFAR, children in sub-Saharan Africa would face extreme HIV-related health risks, including an estimated 1 million new cases of HIV, 460 000 additional AIDS-related deaths in children, and an additional 2·8 million children orphaned by AIDS in the next 5 years (figure 5).

Conclusion: a 5-year runway to sustainability for PEPFAR can protect the health and future of the USA's and Africa's children and adolescents

The findings of this Health Policy lead to one overwhelming conclusion: that continuation of PEPFAR programmes, and investment in a runway of sustainability through progressively increased domestic co-financing of PEPFAR, are crucially important for both the USA and Africa. PEPFAR brings multiple benefits. First, the direct benefits of the programme in saving families with children, protecting orphaned children, preventing devastating consequences for women who are pregnant and breastfeeding, as well as their babies, and protecting girls and adolescents from sexual trafficking and abuse. Second, the indirect benefits within each country in short-term and long-term economic gains, and in stronger responses to transborder disease outbreaks. Third, the reciprocal benefits of soft power—strong trade partners and geopolitical stability within a context of the largest youth cohort in Africa's history. Now is the time to capitalise on unified leadership, and on PEPFAR's unparallelled success, to ensure prosperity, strength, and safety for both the USA and Africa.

Contributors
LC, GM, and SH conceptualised the paper, and drafted the writing, tables, and figures. J-PN-N, SF, JU, JWI-E, MM, BH, and JS examined and extracted existing data. VC, LS, JN, CD, ET, OO, GC, and OR reviewed several drafts and provided inputs.

Declaration of interests
CD declares that, in 2013 and 2015–16, he conducted research funded by PEPFAR via USAID, but has received no funding from them since this time. LC declares that, in 2012, she did a 3-week consultancy in Lesotho with PEPFAR via USAID, and has not received funding from them since. LS declares that one of her doctoral students was funded via USAID from 2016 to 2018. ET declares that she has previously conducted research with the Global Fund to Fight TB, HIV, and Malaria. GM declares that he leads a Zambia-based non-governmental organisation that receives PEPFAR funding to deliver HIV treatment, prevention, and care services. JWI-E declares research grants to his institutions from the National Institutes of Health and UNAIDS, has received a consultancy fee from Oxford Policy Management, and a consultancy fee to his institution from BAO Systems. JS declares that he has received funding from UNAIDS.

MM declares that UNAIDS receives funding from the US President's Emergency Plan for AIDS Relief, among other funders. SH declares that she previously worked as a consultant on Faith and Community Engagement with PEPFAR, and with the Centers for Disease Control and Prevention. All other authors declare no competing interests. This Health Policy was accepted before Executive Orders issued by President Trump's Administration related to gender ideology and diversity, equity, and inclusion in the USA, which have made some of the materials referenced in this article inaccessible. The references were available upon acceptance of the manuscript.

References

1 US Congress. The United States Leadership Against HIV/AIDS, Tuberculosis and Malaria Act of 2003. May 27, 2003. https://www.govinfo.gov/content/pkg/COMPS-10643/pdf/COMPS-10643.pdf (accessed March 5, 2025).

2 UN Department of Economic and Social Affairs. World population prospects. 2024. https://population.un.org/wpp/ (accessed March 5, 2025).

3 US Department of State. PEPFAR latest global results & projections factsheet. Dec 1, 2024. https://www.state.gov/pepfar-latest-global-results-factsheet-dec-2024/ (accessed March 5, 2025).

4 US Department of State. Report to Congress on implementation of assistance to combat HIV/AIDS 22 USC 2151b-2(f): assistance to combat HIV/AIDS. 2023. https://2021-2025.state.gov/wp-content/uploads/2023/08/Report-Implementation-of-Assistance-to-Combat-HIV-AIDS-005187.pdf (accessed March 25, 2025).

5 US Department of State. PEPFAR: annual report to Congress. March, 2022. https://www.state.gov/wp-content/uploads/2022/05/PEPFAR2022.pdf (accessed March 5, 2025).

6 US Congress. S.1443–Foreign Assistance Act of 1973. 1973. https://www.congress.gov/bill/93rd-congress/senate-baikbill/1443#:~:text=Public%20Law%20No%3A%2093%2D189,(12%2F17%2F1973)&text=Foreign%20Assistance%20Act%20of%201973%20%2D%20Adds%20to%20the%20Foreign%20Assistance,policy%20regarding%20development%20assistance%20authorizations (accessed March 5, 2025).

7 US Department of State. Implementing the President's executive order on reevaluating and realigning United States foreign aid. Jan 26, 2025. https://www.state.gov/implementing-the-presidents-executive-order-on-reevaluating-and-realigning-united-states-foreign-aid/ (accessed March 5, 2025).

8 Ratevosian J, Millett G, Honermann B, et al. PEPFAR under review: what's at stake for PEPFAR's future. *Lancet* 2025; **405:** 603–05.

9 Grassly NC, Timaeus IM. Methods to estimate the number of orphans as a result of AIDS and other causes in sub-Saharan Africa. *J Acquir Immune Defic Syndr* 2005; **39:** 365–75.

10 Stover J, Johnson P, Hallett T, Marston M, Becquet R, Timaeus IM. The Spectrum projection package: improvements in estimating incidence by age and sex, mother-to-child transmission, HIV progression in children and double orphans. *Sex Transm Infect* 2010; **86** (suppl 2)**:** ii16–21.

11 Timæus I. Estimation and progression of dual orphans in populations with generalized HIV epidemics: updated methods. 2008. https://blogs.lshtm.ac.uk/iantimaeus/files/2012/04/Dual-Orphanhood-2008-final.pdf (accessed March 5, 2025).

12 Stover J, Andreev K, Slaymaker E, et al. Updates to the spectrum model to estimate key HIV indicators for adults and children. *Aids* 2014; **28:** S427–34.

13 Reid G, Voetsch AC, Stupp P, et al. Improving sampling efficiency for determining pediatric hiv prevalence in national surveys: evidence from 8 sub-Saharan African countries. *J Acquir Immune Defic Syndr* 2021; **87** (suppl 1)**:** S43–51.

14 PHIA Project. Population-based HIV impact assessment datasets. https://phia-data.icap.columbia.edu/datasets. 2025. (accessed March 24, 2025).

15 Davis B, Handa S. The broad range of cash transfer impacts in sub-Saharan Africa: consumption, human capital and productive activity. 2014. https://transfer.cpc.unc.edu/wp-content/uploads/2021/07/TransferProjectBrief_2014-01_BroadImpactsofSCT.pdf (accessed March 25, 2025).

16 Kim J, Ferrari G, Abramsky T, et al. Assessing the incremental effects of combining economic and health interventions: the IMAGE study in South Africa. *Bull World Health Organ* 2009; **87:** 824–32.

17 Cluver LD, Meinck F, Steinert JI, et al. Parenting for lifelong health: a pragmatic cluster randomised controlled trial of a non-commercialised parenting programme for adolescents and their families in South Africa. *BMJ Glob Health* 2018; **3:** e000539.

18 Stover J, Flanagan CF, Teng Y. The impact of the President's Emergency Program for AIDS Relief (PEPFAR) on children. *MedRxiv* 2023; published online Sept 18. https://doi.org/10.1101/2023.09.18.23295712 (preprint).

19 Vandenhoudt H, Miller KS, Ochura J, et al. Evaluation of a US evidence-based parenting intervention in rural Western Kenya: from Parents Matter! to Families Matter! *AIDS Educ Prev* 2010; **22:** 328–43.

20 Jewkes R, Nduna M, Levin J, et al. Impact of Stepping Stones on incidence of HIV and HSV-2 and sexual behaviour in rural South Africa: cluster randomised controlled trial. *BMJ* 2008; **337:** a506.

21 Skevington SM, Sovetkina EC, Gillison FB. A systematic review to quantitatively evaluate 'Stepping Stones': a participatory community-based HIV/AIDS prevention intervention. *AIDS Behav* 2013; **17:** 1025–39.

22 Baiocchi M, Omondi B, Langat N, et al. A behavior-based intervention that prevents sexual assault: the results of a matched-pairs, cluster-randomized study in Nairobi, Kenya. *Prev Sci* 2017; **18:** 818–27.

23 Jones KA, Tancredi DJ, Abebe KZ, Paglisotti T, Miller E. Cases of sexual assault prevented in an athletic coach-delivered gender violence prevention program. *Prev Sci* 2021; **22:** 504–08.

24 Abramsky T, Devries K, Kiss L, et al. Findings from the SASA! study: a cluster randomized controlled trial to assess the impact of a community mobilization intervention to prevent violence against women and reduce HIV risk in Kampala, Uganda. *BMC Med* 2014; **12:** 122.

25 Kanagasabai U, Aholou T, Chevalier MS, et al. Reaching youth through faith leaders: evaluation of the Faith Matters! Initiative. *AIDS Educ Prev* 2023; **35** (suppl A)**:** 82–99.

26 Tafere GW, Hunduma F, Yesuf A. Viral suppression rate at Operation Triple Zero (OTZ) and regular art follow-up programs and associated factors among adolescent clients of Addis Ababa Ethiopia: a comparative cross-sectional study. *Virol J* 2023; **20:** 208.

27 WHO. Adolescent friendly health services for adolescents living with HIV: from theory to practice. Nov 27, 2019. https://www.who.int/publications/i/item/adolescent-friendly-health-services-for-adolescents-living-with-hiv (accessed March 5, 2025).

28 Willis N, Milanzi A, Mawodzeke M, et al. Effectiveness of community adolescent treatment supporters (CATS) interventions in improving linkage and retention in care, adherence to ART and psychosocial well-being: a randomised trial among adolescents living with HIV in rural Zimbabwe. *BMC Public Health* 2019; **19:** 117.

29 Mavhu W, Willis N, Mufuka J, et al. Effect of a differentiated service delivery model on virological failure in adolescents with HIV in Zimbabwe (Zvandiri): a cluster-randomised controlled trial. *Lancet Glob Health* 2020; **8:** e264–75.

30 Makangila G, Hillis S, Mwape F, et al. 22nd ICASA International Conference on AIDS and STIs in Africa. 2023. https://www.saafrica.org/pages/wp-content/uploads/2023/10/ICASA-2023-Programme-Booklet-26102023.pdf (accessed March 25, 2025).

31 Allison BA, Widman L, Stewart JL, Evans R, Perry M. Adherence to pre-exposure prophylaxis in adolescents and young adults: a systematic review and meta-analysis. *J Adolesc Health* 2022; **70:** 28–41.

32 Ford N, Irvine C, Shubber Z, et al. Adherence to HIV postexposure prophylaxis: a systematic review and meta-analysis. *AIDS* 2014; **28:** 2721–27.

33 WHO. Guidelines for HIV post-exposure prophylaxis. 2024. https://iris.who.int/bitstream/handle/10665/378221/9789240095137-eng.pdf?sequence=1 (accessed March 25, 2025).

34 Fonner VA, Ridgeway K, van der Straten A, et al. Safety and efficacy of long-acting injectable cabotegravir as preexposure prophylaxis to prevent HIV acquisition. *AIDS* 2023; **37:** 957–66.

35 Johnson LF, Myer L, Jamieson L, Meyer-Rath G, Delany-Moretlwe S, Joseph Davey D. The potential benefits of long-acting injectable cabotegravir in pregnant and breastfeeding women and their infants. *AIDS* 2024; **38:** 589–94.

36 Endeshaw D, Dessie G, Kasa AS, et al. Consistent condom utilization among sexually active HIV positive individuals in Sub-Saharan Africa: systematic review and meta-analysis. *Sci Rep* 2024; **14:** 5837.

37 WHO. INSPIRE: Seven strategies for ending violence against children. Oct 16, 2016. https://www.who.int/publications/i/item/inspire-seven-strategies-for-ending-violence-against-children (accessed March 5, 2025).

38 amfAR. Cuts to the CDC's division of HIV prevention will lead to dramatic rise in infections, deaths, and costs. 2025. https://www.amfar.org/pepfar-domestic-funding (accessed March 27, 2025).

39 Hillis SD, Unwin HJT, Chen Y, et al. Global minimum estimates of children affected by COVID-19-associated orphanhood and deaths of caregivers: a modelling study. *Lancet* 2021; **398:** 391–402.

40 Cluver L, Imai-Eaton JW, Sherr L, Mahy M, Flaxman S. Reauthorise PEPFAR to prevent death, orphanhood, and suffering for millions of children. *Lancet* 2023; **402:** 769–70.

41 UNICEF. HIV/AIDS data. 2024. https://data.unicef.org/resources/dataset/hiv-aids-statistical-tables/ (accessed March 25, 2025).

42 Save the Children. Violence against children in Kenya: findings from a 2010 national survey. 2012. https://resourcecentre.savethechildren.net/document/violence-against-children-kenya-findings-2010-national-survey-summary-report-prevalence/#:~:text=66%25%20of%20females%20and%2073,types%20of%20violence%20during%20childhood. (accessed March 27, 2025).

43 UN Population Division. World population prospects. 2024. https://www.un.org/development/desa/pd/world-population-prospects-2024 (accessed March 25, 2025).

44 Teasdale CA, Zimba R, Abrams EJ, et al. Estimates of the prevalence of undiagnosed HIV among children living with HIV in Eswatini, Lesotho, Malawi, Namibia, Tanzania, Zambia, and Zimbabwe from 2015 to 2017: an analysis of data from the cross-sectional Population-based HIV Impact Assessment surveys. *Lancet HIV* 2022; **9:** e91–101.

45 UNICEF. When numbers demand action: confronting the global scale of sexual violence against children. Oct 9, 2024. https://data.unicef.org/resources/when-numbers-demand-action/ (accessed March 5, 2025).

46 Kidman R, Palermo T. The relationship between parental presence and child sexual violence: evidence from thirteen countries in sub-Saharan Africa. *Child Abuse Negl* 2016; **51:** 172–80.

47 Kenyan Ministry of Labor and Social Protection. The National Violence Against Children Survey Report. 2019. July 16, 2020. https://www.knbs.or.ke/the-national-violence-against-children-survey-report-2019/ (accessed March 5, 2025).

48 VanderEnde K, Chiang L, Mercy J, et al. Adverse childhood experiences and HIV sexual risk-taking behaviors among young adults in Malawi. *J Interpers Violence* 2018; **33:** 1710–30.

49 UNAIDS. Global HIV and AIDS statistics. 2023. https://www.unaids.org/en/resources/fact-sheet (accessed March 5, 2025).

50 UNAIDS. 2024 Global AIDS report—the urgency of now: AIDS at a crossroads. July, 2024. https://www.unaids.org/en/resources/documents/2024/global-aids-update-2024 (accessed March 5, 2025).

51 US Department of State. Faith and community engagement 2023–2025. 2025. https://www.state.gov/wp-content/uploads/2024/05/PEPFAR-Faith-and-Community-Fact-Sheet_2023-to-2025_508-Updates_15-May-2024.pdf (accessed March 5, 2025).

52 Pew Research Center. Key findings from the Global Religious Futures Project. Dec 21, 2022. https://www.pewresearch.org/religion/2022/12/21/key-findings-from-the-global-religious-futures-project/ (accessed March 5, 2025).

53 UNAIDS. Compendium of promising practices of African faith community interventions against paediatric and adolescent HIV. June, 2023. https://www.unaids.org/en/resources/documents/2023/CompendiumPromisingPractices (accessed March 5, 2025).

54 Ezeanolue EE, Obiefune MC, Ezeanolue CO, et al. Effect of a congregation-based intervention on uptake of HIV testing and linkage to care in pregnant women in Nigeria (Baby Shower): a cluster randomised trial. *Lancet Glob Health* 2015; **3:** e692–700.

55 Oomman N, Bernstein M, Rosenzweig S, Pearson J. The numbers behind the stories: PEPFAR funding for fiscal years 2004 to 2006. 2008. https://www.cgdev.org/sites/default/files/15799_file_theNumbersBehindTheStories.pdf (accessed March 5, 2025).

56 UNAIDS. Children on the Brink 2004: a joint report of new orphan estimates and a framework for action. July, 2004. https://data.unaids.org/publications/external-documents/unicef_childrenonthebrink2004_en.pdf (accessed March 5, 2025).

57 Karim SSA, Baxter C. HIV incidence rates in adolescent girls and young women in sub-Saharan Africa. *Lancet Glob Health* 2019; **7:** e1470–71.

58 Thurman TR, Luckett B, Zani B, Nice J, Taylor TM. Can support groups improve treatment adherence and reduce sexual risk behavior among young people living with HIV? Results from a cohort study in South Africa. *Trop Med Infect Dis* 2024; **9:** 162.

59 Nyberg BJ, Yates DD, Lovich R, et al. Saving lives for a lifetime: supporting orphans and vulnerable children impacted by HIV/AIDS. *J Acquir Immune Defic Syndr* 2012; **60** (suppl 3)**:** S127–35.

60 MEASURE Evaluation. Orphans and Vulnerable Children Monitoring, Evaluation, and Reporting (MER) indicators: facilitator's guide. 2018. https://www.measureevaluation.org/resources/publications/ms-18-152/index.html (accessed March 27, 2025).

61 DREAMS. PEPFAR DREAMS fact sheet. 2024. https://www.state.gov/wp-content/uploads/2024/12/DREAMS-Fact-Sheet_WAD-2024_FINAL.pdf (accessed March 25, 2025).

62 Johnson LF, Myer L, Jamieson L, Meyer-Rath G, Delany-Moretlwe S, Joseph Davey D. The potential benefits of long-acting injectable cabotegravir in pregnant and breastfeeding women and their infants. *AIDS* 2024; **38:** 589–94.

63 US Department of State. PEPFAR panorama spotlight. 2021. https://catalog.data.gov/dataset/pepfar-panorama-spotlight (accessed March 25, 2025).

64 Vatican City State. High-level dialogue to assess progress on and intensify commitment to scaling up prevention, diagnosis and treatment of paediatric HIV and TB. 2022. https://www.paediatrichivactionplan.org/_files/ugd/38bdff_e6a43bd0240440c5bfa9c488326ccbb8.pdf (accessed March 25, 2025).

65 Bekker LG, Das M, Abdool Karim Q, et al. Twice-yearly Lenacapavir or daily F/TAF for HIV prevention in cisgender women. *N Engl J Med* 2024; **391:** 1179–92.

66 Delany-Moretlwe S, Hughes JP, Bock P, et al. Cabotegravir for the prevention of HIV-1 in women: results from HPTN 084, a phase 3, randomised clinical trial. *Lancet* 2022; **399:** 1779–89.

67 Chiang L, Miedema S, Saul J, et al. Successful child sexual violence prevention efforts start with data: how the Violence Against Children and Youth Survey helped curb the tide of child sexual violence in 20 countries. *BMJ Paediatr Open* 2024; **8:** e002497.

68 Sidibe M, Makgoba TC, Bishop Paul, et al. Accelerating domestic investments to end AIDS in Africa. *Lancet* 2025; published online April 9. https://doi.org/10.1016/S0140-6736(25)00685-3.

69 The Coalition for Children Affected by AIDS. Children and adolescents affected by HIV and AIDS: expenditures, needs, and resource gaps. November, 2024. https://childrenandhiv.org/wp-content/uploads/2024/11/CCABA-Report-Financing-for-Ch-and-Adols-FINAL-11-Nov-2024.pdf (accessed March 5, 2025).

70 Baerecke L, Ornellas A, Wamoyi J, et al. A hybrid digital parenting programme to prevent abuse of adolescents in Tanzania: study protocol for a pragmatic cluster-randomised controlled trial. *Trials* 2024; **25:** 119.

71 UNAIDS. End inequalities. End AIDS. Global AIDS Strategy 2021–26. UNAIDS, 2021.

72 US Department of State. PEPFAR 2023 Country and Regional Operational Plan (COP/ROP) guidance for all PEPFAR-supported countries. Feb 15, 2023. https://www.state.gov/wp-content/uploads/2023/02/PEPFAR-2023-Country-and-Regional-Operational-Plan.pdf (accessed March 5, 2025).

73 UNAIDS. HIV response sustainability primer. Jan 17, 2024. https://www.unaids.org/en/resources/documents/2024/20240117_HIV_response_sustainability (accessed March 5, 2025).

74 Wagner Z, Barofsky J, Sood N. PEPFAR funding associated with an increase in employment among males in ten sub-Saharan African countries. *Health Aff* 2015; **34:** 946–53.

75 Crown W, Hariharan D, Kates J, et al. Analysis of economic and educational spillover effects in PEPFAR countries. *PLoS One* 2023; **18:** e0289909.

76 Gaumer G, Luan Y, Hariharan D, et al. Assessing the impact of the president's emergency plan for AIDS relief on all-cause mortality. *PLOS Glob Public Health* 2024; **4:** e0002467.

77 Gaumer G, Crown WH, Kates J, et al. Analysis of maternal and child health spillover effects in PEPFAR countries. *BMJ Open* 2023; **13:** e070221.

78 Rudgard W, Desmond C, Obiesie S, et al. The case for rights-based investments in adolescent girls in Kenya: an economic modelling study. *SSRN* 2024; published online April 19. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4796783 (preprint).

79 Laird JJ, Klettke B, Hall K, Clancy E, Hallford D. Demographic and psychosocial factors associated with child sexual exploitation: a systematic review and meta-analysis. *JAMA Netw Open* 2020; **3:** e2017682.

80 World Bank Group. Africa human capital heads of state summit. July 25–26, 2023. https://www.worldbank.org/en/events/2023/07/25/africa-human-capital-heads-of-state-summit (accessed March 5, 2025).

81 Rubio M. Priorities and mission of the second Trump administration's Department of State. Jan 22, 2025. https://www.state.gov/priorities-and-mission-of-the-second-trump-administrations-department-of-state/ (accessed March 5, 2025).

82 Daschle T, Frist B. Building prosperity, stability, and security through strategic health diplomacy: a study of 15 years of PEPFAR. July, 2018. https://bipartisanpolicy.org/download/?file=/wp-content/uploads/2019/03/Building-Prosperity-Stability-and-Security-Through-Strategic-Health-Diplomacy-A-Study-of-15-Years-of-PEPFAR.pdf (accessed March 5, 2025).

83 Goldsmith BE, Horiuchi Y, Wood T. Doing well by doing good: the impact of foreign aid on foreign public opinion. *Quart J Polit Sci* 2014; **9:** 77–114.

84 Mirza M, Grant-Greene Y, Valles MPJS, et al. Leveraging PEPFAR-supported health information systems for COVID-19 pandemic response. *Emerg Infect Dis* 2022; **28:** S49–58.

85 Office of the US Trade Representative. Africa trade summary. 2024. https://ustr.gov/countries-regions/africa (accessed March 26, 2025).

86 International Monetary Fund. IMF's sub-Saharan Africa regional economic outlook: reform amid great expectations. Oct 25, 2024. https://www.imf.org/en/News/Articles/2024/10/25/pr-24395-ssa-imf-ssa-reo-reform-amid-great-expectations#:~:text=IMF's%20Sub%2DSaharan%20Africa%20Regional%20Economic%20Outlook%3A%20Reform%20Amid%20Great%20Expectations,-October%2025%2C%202024&text=Growth%20in%20sub%2DSaharan%20Africa,poverty%20or%20address%20development%20challenges (accessed March 5, 2025).

87 Guo B, Fan V, Strange A, Grépin KA. Understanding China's shifting priorities and priority-setting processes in development assistance for health. *Health Policy Plan* 2024; **39** (suppl 1): i65–78.

88 Dolan CB, Malik AA, Zhang S, et al. Chinese health funding in Africa: the untold story. *PLOS Glob Public Health* 2023; **3:** e0001637.

89 Burrier E, Sheehy T. Challenging China's grip on critical minerals can be a boon for Africa's future. June 7, 2023. https://www.usip.org/publications/2023/06/challenging-chinas-grip-critical-minerals-can-be-boon-africas-future (accessed March 5, 2025).

90 Alibabalu S, Sarkhanov T. Iran's public diplomacy and religious soft power in Africa. *Politics Relig* 2023; **17:** 411–33.

91 US Department of Defense. Military and security developments involving the People's Republic of China. 2024. https://media.defense.gov/2024/dec/18/2003615520/-1/-1/0/military-and-security-developments-involving-the-peoples-republic-of-china-2024.pdf (accessed March 5, 2025).

92 Defense Intelligence Agency. Challenges to security in space. 2022. https://www.dia.mil/Portals/110/Documents/News/Military_Power_Publications/Challenges_Security_Space_2022.pdf (accessed 5 March 2025)

93 Villaveces A, Chen Y, Tucker S, et al. Orphanhood and caregiver death among children in the United States by all-cause mortality, 2000–2021. *Nat Med* 2025; **31:** 672–83.

94 Finkelhor D, Turner H, Colburn D. The prevalence of child sexual abuse with online sexual abuse added. *Child Abuse Negl* 2024; **149:** 106634

95 Rutter M. Annual research review: resilience—clinical implications. *J Child Psychol Psychiatry* 2013; **54:** 474–87.

96 Yule K, Houston J, Grych J. Resilience in children exposed to violence: a meta-analysis of protective factors across ecological contexts. *Clin Child Fam Psychol Rev* 2019; **22:** 406–31.

97 Cluver LD, Orkin FM, Campeau L, et al. Improving lives by accelerating progress towards the UN Sustainable Development Goals for adolescents living with HIV: a prospective cohort study. *Lancet Child Adolesc Health* 2019; **3:** 245–54.

98 Omigbodun O. Developing child mental health services in resource-poor countries. *Int Rev Psychiatry* 2008; **20:** 225–35.

99 Ungar M, Theron L. Resilience and mental health: how multisystemic processes contribute to positive outcomes. *Lancet Psychiatry* 2020; **7:** 441–48.

100 OpenHIM. DATIM. 2024. https://openhim.org/docs/implementations/datim/(accessed March 25, 2025).

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