



Innovations in Sexual and Reproductive Health 5

Challenges and opportunities in developing integrated sexual and reproductive health programmes

Kenneth H Mayer, Chris Beyrer, Myron S Cohen, Wafaa M El-Sadr, Beatriz Grinsztejn, Jennifer M Head, Alex S Keuroghlian, Veronica Miller, Nittaya Phanuphak, Helen Rees, Michael Reid, Ann Stars, Mitchell Warren, Linda-Gail Bekker

Lancet 2025; 406: 2168–90

This is the fifth in a *Series* of five papers about innovations in sexual and reproductive health.

All papers in the *Series* are available at thelancet.com/series/sexual-reproductive-health

See [Comment](#) page 2038

The Fenway Institute, Fenway Health, Boston, MA, USA

(Prof K H Mayer MD,

Prof A S Keuroghlian MD);

Department of Medicine,

Beth Israel Deaconess Medical

Center, Harvard Medical

School, Boston, MA, USA

(Prof K H Mayer); Duke Global

Health Institute, Department

of Medicine, and Duke Center

for AIDS Research, Duke

University, Durham, NC, USA

(Prof C Beyrer MD); University of

North Carolina at Chapel Hill,

Chapel Hill, NC, USA

(Prof M S Cohen MD); ICAP at

Columbia University, New York,

NY, USA (W M El-Sadr MD);

Laboratório de Pesquisa Clínica

em DST/Aids, Instituto

Nacional de Infectologia

Evandro Chagas, Rio de Janeiro,

Brazil (Prof B Grinsztejn MD);

Synergy Scientifics,

Port Orford, OR, USA

(J M Head PhD); Department of

Psychiatry

(Prof A S Keuroghlian MD) and

Massachusetts General

Hospital

(Prof A S Keuroghlian MD),

Harvard Medical School,

Harvard University, Boston,

MA, USA; Forum for

Collaborative Research,

UC Berkeley School of Public

Health, Washington, DC, USA

(Prof V Miller PhD); Institute of

HIV Research and Innovation,

Bangkok, Thailand

(N Phanuphak PhD); Wits RHI,

University of the

Witwatersrand, Johannesburg,

South Africa (H Rees MRCPG);

University of California,

San Francisco, CA, USA

(M Reid MD); Global Health

Sexual and reproductive health and rights are fundamental to both human and societal wellbeing and sustainable development, and encompass a broad array of sociocultural and clinical issues that affect all people across the life course. In 2018, the Guttmacher–*Lancet* Commission described sexual and reproductive health as a state of physical, emotional, mental, and social wellbeing in relation to all aspects of sexuality and reproduction, not merely the absence of disease, dysfunction, or infirmity. The Commission advocated for a positive approach to sexuality and reproduction that recognises the role of pleasurable sexual relationships, trust, and communication in promoting self-esteem and overall wellbeing. The Commission also stipulated that people have a right to make decisions governing their bodies and to access services that support that right. In light of recent sociocultural changes, biomedical advances that have impacted sexual and reproductive health and rights, and the key findings of the Guttmacher–*Lancet* Commission, we bring together themes from this *Lancet* Series to discuss the new scientific developments and sociopolitical changes that affect the programmatic integration of sexual and reproductive health services. As people who present for one sexual and reproductive health service frequently have other unmet sexual and reproductive health-related needs, there are often benefits to interventions and services that address multiple connected sexual and reproductive health issues during one clinical encounter (eg, family planning visits, including testing for HIV and other sexually transmitted infections), which supports the rationale for an integrated approach. Historically, key components of sexual and reproductive health have been managed separately, partly because of siloed and inadequate funding streams and structural limitations (eg, separate location of service delivery or insufficient staff cross-training). Vertical methods have also evolved from the need for different approaches to reach key populations, who might be reluctant to seek care from primary health care clinics. We build on the findings of the papers in this Series to discuss the rationale for sexual and reproductive health programmatic integration, which has the potential to better engage patients in care by meeting their preferences, simplify the user experience, and save resources when implemented in a thoughtful, culturally tailored manner. However, wide-scale sexual and reproductive health programmatic integration faces multiple challenges, requiring broadly trained health-care providers, a range of clinical and outreach channels, and well-resourced health systems. Programmatic integration might be further constrained by societal norms and regulations (eg, punitive laws, institutional homophobia, legal restrictions on access to safe abortion, and opposition to sexual and reproductive rights). Notably, the Trump Administration's withdrawal of support from various sexual and reproductive health programmes in January, 2025, is a major threat to continued progress. This Series paper provides a call to action based on the key findings from this Series that delineates the steps needed to better integrate programmes to optimise sexual and reproductive health outcomes.

Introduction

Sexual and reproductive health entails the promotion of physical, mental, and social wellbeing and is intimately connected to sexual and reproductive health and rights. In 2018, the Guttmacher–*Lancet* Commission on sexual and reproductive health and rights¹ described the right for people to have their bodily integrity, privacy, and personal autonomy respected; to be able to freely define their own sexuality, including sexual orientation and gender identity and expression; to decide whether and when to be sexually active; to choose their sexual partners; to have safe and pleasurable sexual experiences; to decide whether, when, and whom to marry; to decide whether, when, and by what means to have a child or children and how many children to have; and to have access to the information, resources, services, and support necessary

to achieve all the above and be free from discrimination, coercion, exploitation, and violence (see the first paper in this Series²).^{1,3}

The Guttmacher–*Lancet* Commission delineated the scope and unmet needs of the sexual and reproductive health and rights agenda (see the first paper in this Series²) and noted that the necessary investments were modest and affordable for most low-income and middle-income countries (LMICs) and could yield long-term benefits and support broader development goals. However, progress has been slow or overturned, with many women (the authors use women to describe people who can become pregnant, but do not intend to exclude people who might use different terms) either not accessing or having insufficient antenatal care,⁴ and over 200 million women not being able to access modern contraception. Simultaneously, over four decades into the global HIV

epidemic, progress towards epidemic control is uneven, with some regions (including Eastern Europe, Central Asia, the Middle East, and North Africa) seeing increased rates of new HIV infections and other sexually transmitted infections (STIs) despite numerous innovative breakthroughs in the past decade.^{5,6} This Series paper focuses on how to catalyse progress, more efficiently use constrained resources, and move to a sustainable and effective response through innovative and integrated sexual and reproductive health services. For sexual and reproductive health programmes to be successful, they need to address individual sexual and reproductive rights. This Series paper focuses on the opportunities and challenges for programmatic integration from a range of perspectives (eg, researchers, implementers, community members, regulators, and funders).

Changes in population dynamics and social norms (see the first paper in this Series²), a range of developments in reproductive technologies (see the second paper in this Series⁷), and emerging prevention and treatment options for sexually transmitted diseases (see the third paper in this Series⁸) have created new incentives and opportunities for sexual and reproductive health and rights to be fully included in country health agendas. However, these opportunities require the optimised integration of sexual and reproductive health programmes and depoliticisation of these basic interventions, which affect all people over the life course.^{9–13} In addition, given funding constraints, the need to understand which interventions provide the most cost-effective strategies is a key consideration, as described in the fourth paper in this Series.¹⁴ This Series paper aims to review the opportunities and challenges of sexual and reproductive health programme integration, and to highlight how the innovations discussed in this Series can be used to optimise sexual and reproductive health service delivery, and sexual and reproductive health and rights more broadly.

The interconnectedness of sexual and reproductive health

Although achieving optimal sexual and reproductive health for all has long been a key public health goal for nations, major donors, and normative bodies (eg, WHO),^{1,15,16} the development of integrated approaches has been impeded by factors including requirements by donors to have direct accountability for impact within specific content areas (eg, HIV-specific focus in the US President's Emergency Plan for AIDS Relief [PEPFAR]) and the reluctance of some implementing partners and countries to support specific sexual and reproductive health services (eg, safe abortion services). These challenges have been partly influenced by the Mexico City policy (ie, the global gag rule), which is a US Government policy that blocks federal funding for non-governmental organisations that provide abortion counselling or referrals, advocate to decriminalise

Search strategy and selection criteria

Studies were identified through a purposive search of PubMed and Google Scholar to illustrate the breadth of evidence on the integration of HIV and sexual and reproductive health services. Search terms included “sexual and reproductive health” AND “integration”; “HIV” AND “family planning”; “STI” AND “family planning”; “HIV” AND “integration” AND “reproductive health”; and “STI” AND “integration” AND “reproductive health”. No formal inclusion or exclusion criteria were applied. Additional relevant studies were identified from reference lists. Systematic reviews and meta-analyses were prioritised, and original research articles were included only if they were not covered in the identified reviews. Owing to the heterogeneity of settings, populations, and programmatic menus, head-to-head comparisons were not feasible. No specific timeframe was applied, but more recent studies up to Jan 1, 2025 were prioritised for inclusion.

abortion, or expand abortion services. Moreover, the new Trump Administration policies and funding constraints counter normative guidance and expert consensus regarding sexual and reproductive health programme best practices.^{17,18} Lagging progress in sexual and reproductive health and rights and shifting political headwinds have prompted examinations of how to leverage synergies to enhance the health of individuals and populations through integrated programmes.^{19,20}

Even when political environments and funding envelopes can be challenging, programmatic integration can theoretically provide an efficient way to use sparse resources to address multiple related needs at each clinical encounter.²¹ However, the implementation of integration raises complex issues. Definitions, models, and measurements vary depending on the analytical focus,²² since the issues raised by integration might range from how to best address patient needs comprehensively to how to create the most efficient system for service delivery. Moreover, linkages (ie, synergies in policy, advocacy, and operational issues) are also necessary to optimise integrated care.^{21,23}

Although the concept of integrating sexual and reproductive health programmes is not new,^{24–27} recent scientific, epidemiological, cultural, and clinical developments underscore its importance. Despite the many challenges associated with the provision of integrated sexual and reproductive health services, the need for a comprehensive approach remains.²⁸ As noted in this Series, shifting trends and recent innovations in sexual and reproductive health have deepened our insight into strategies to comprehensively improve sexual and reproductive health. Specifically, the first paper in this Series² has covered how changes in sociodemographics (eg, the increased numbers of youth [aged 15–24 years]) in LMICs), behaviour (eg, increases in non-marital sex), culture (eg, increased diversity in sexual orientation and

Visions, San Francisco, CA, USA (A Starrs MPA); AVAC, New York, NY, USA (M Warren BA); The Desmond Tutu HIV Centre, University of Cape Town, Cape Town, South Africa (Prof L-G Bekker MD)

Correspondence to: Kenneth H Mayer, The Fenway Institute, Fenway Health, Boston, MA 02215, USA kmayer@fenwayhealth.org

gender identity), and structural issues (eg, access to abortion) have altered sexual and reproductive health epidemiology. The second paper in this Series⁷ describes innovations in contraception that could allow for women

Panel 1: Potential benefits of and barriers to integration

Potential benefits of integration

- Improved patient experience through patient-centred care that uses a holistic approach
- Improved patient outcomes can be efficiently tracked via integrated electronic health records
- Improved care delivery can offer comprehensive care for clients with multiple health needs
- Shared resources and better-informed health-care providers
- Integration can reduce siloed, uncoordinated programmes with comprehensive models of care, reducing waiting times and costs for users
- Integration can strengthen health systems by centralising planning and supporting sites that provide multiple services
- Sustainability: there are many examples of cost efficiencies (eg, training staff to deliver a broader array of services)
- Innovative interventions and products are being developed that will facilitate integration (eg, the development of the dual prevention pill, which can protect against pregnancy and HIV; see the third paper in this Series⁸)
- Supply chains could be optimised to ensure availability of diagnostic tests, drugs, and interventions to reduce the unavailability of necessary products

Potential barriers to integration

- People seeking care might be required to receive services in spaces that are not tailored to meet their needs (eg, men might not feel comfortable receiving care in clinics that provide reproductive health services primarily for women)
- Reporting structures might not support integration
- National and donor-specific guidelines might not support integration
- Resources might not be available for health-care providers to be trained in multiple clinical issues or in how to provide culturally appropriate care for diverse populations
- Clinical spaces might not support integration because of physical limitations or insufficient staff training
- Health-care systems might not have sufficient resources to support integration
- Funding streams might not be flexible
- Clinical trials and product approvals might be complex (eg, the need to show the efficacy of different co-administered agents or potentially more than one regulatory approval)
- Supply chains would be more complex to ensure the availability of the full range of diagnostic tests, drugs, and interventions

to have increased choices and greater bodily autonomy, and the third paper in this Series⁸ reviews the innovations in anti-infectives that can decrease the risk of acquiring HIV and other STIs. The fourth paper in this Series¹⁴ discusses the costs of scaling up these promising interventions and makes the case that it will ultimately be a greater cost to society to not bring new contraceptive and anti-infective technologies to scale, owing to the increased number of unplanned pregnancies, adverse reproductive health outcomes, and increased HIV and STIs.

Expanding on the insights presented in the other papers, we (1) link the themes of this Series by discussing the historical development of sexual and reproductive health, reviewing recent data that highlight instructive examples of programmatic integration, and discussing the implications of programmatic integration for different stakeholders (eg, patients, clinicians, regulators, and researchers); and (2) provide a call to action to promote optimal sexual and reproductive health and rights at policy, funding, and health system levels by leveraging innovations and addressing widening gaps in health inequities in this ever-changing socio-political climate and in the face of unprecedented cuts to sexual and reproductive health programming.

Technological and sociocultural advances expand the list of available reproductive and sexual health options

Reproductive health services include a range of interventions to help people make and act on decisions about their reproductive lives. Despite advances in technologies in recent decades, which offer a broader palette of user choices and increased agency for women and others using reproductive health services in many countries, most of the 4·3 billion people of reproductive age (15–49 years) worldwide have inadequate sexual and reproductive health services over the course of their lives.¹ Progress on this front has been considerably hampered by rigid societal norms, poverty, low health literacy and access, and the priorities of governments and funders.²⁹

Most reproductive health programmes in LMICs have concentrated on family planning, which emerged as a major focus for both donors and national governments in the 1960s, owing to concerns about high population growth.³⁰ Until the mid-1990s, the first phase of the family planning movement focused primarily on promoting effective, modern methods of contraception, resulting in an increased use of these technologies from less than 10% to over 60% in women of reproductive age. This increase in use of contraception resulted in a 50% reduction in the global total fertility rate, from an average of approximately six to three children per woman.³¹ However, although family planning advocates have highlighted the importance of voluntary and informed choice as essential components of service

programmes, some funders and health authorities used financial incentives and other means to coerce women and families to limit the number of children they had.³² Despite advances in contraceptive technologies, in 2024, over 15% of women of reproductive age (15–49 years) had unmet needs for modern methods of contraception worldwide, including almost 20% of women in sub-Saharan Africa.³³

In part to address these concerns, the International Conference on Population and Development (ICPD; Cairo, Egypt; 1994) and subsequent Fourth World Conference on Women (Beijing, China; 1995) expanded the scope of reproductive health to encompass women's empowerment, promoted individual choice in childbearing, and linked reproductive rights to human rights.³¹ Because of the unwillingness of some governments to endorse the right of women and girls to bodily autonomy or to accept diverse sexual orientations and gender identities, the ICPD excluded any direct reference to sexual rights. However, it is now widely acknowledged by WHO (but not all member states) that meeting optimal sexual health goals cannot occur without the explicit recognition of sexual rights.³

As highlighted in the second and third papers in this Series,^{7,8} other advances in specific sexual and reproductive health interventions have also expanded our understanding of what is needed for holistic improvements. For example, providing antiretroviral therapy (ART) for people with HIV decreases the likelihood of vertical transmission of HIV,³⁴ but does not decrease the likelihood of acquiring or transmitting syphilis or other viral STIs. Pregnant women using pre-exposure prophylaxis (PrEP) can be protected against HIV acquisition,³⁵ but are not protected against other STIs. The progress made in scaling up the wider deployment of antiretrovirals since 2003—a major achievement in HIV control—decoupled HIV acquisition from the risks of acquiring other STIs for sexually active people. However, reproductive health programmes globally have not universally integrated both HIV and STI screening, treatment, and prevention into their approach for people who present for family planning or pregnancy-related care, leading to missed opportunities. This absence is especially concerning given the increasing rates of congenital and neonatal infections such as syphilis, hepatitis B, and herpes simplex virus (HSV).³⁶ In 2022, there were 700 000 cases of neonatal syphilis globally, which is a readily preventable infection.³⁷ Another example of the need for integrated approaches to sexual and reproductive health is sexually transmitted human papillomavirus (HPV) infection, where vaccination rates and cervical cancer screening in LMICs remain suboptimal, often due to limited availability, challenges in access (including cost), and medical mistrust.^{38,39}

Progress on the sexual and reproductive health and rights agenda remains mixed (see the first paper in this Series⁴). Although access to voluntary family planning services has increased, the unmet need for

modern methods of contraception among women who want to delay or avoid pregnancy declined by less than 1% between 2015 and 2024.^{18,40} Additionally, although maternal mortality declined substantially between 2005 and 2015, it has since stalled,^{18,41} with 260 000 women dying during and following pregnancy and childbirth in 2023 and approximately 92% of the deaths occurring in LMICs.⁴² Furthermore, sexual and gender-based violence (SGBV) and abuse persist, exacerbated by the COVID-19 pandemic, with WHO's most recent estimates indicating that nearly one in three women worldwide experiences some form of SGBV in their lifetime.⁴³ One of the few areas of

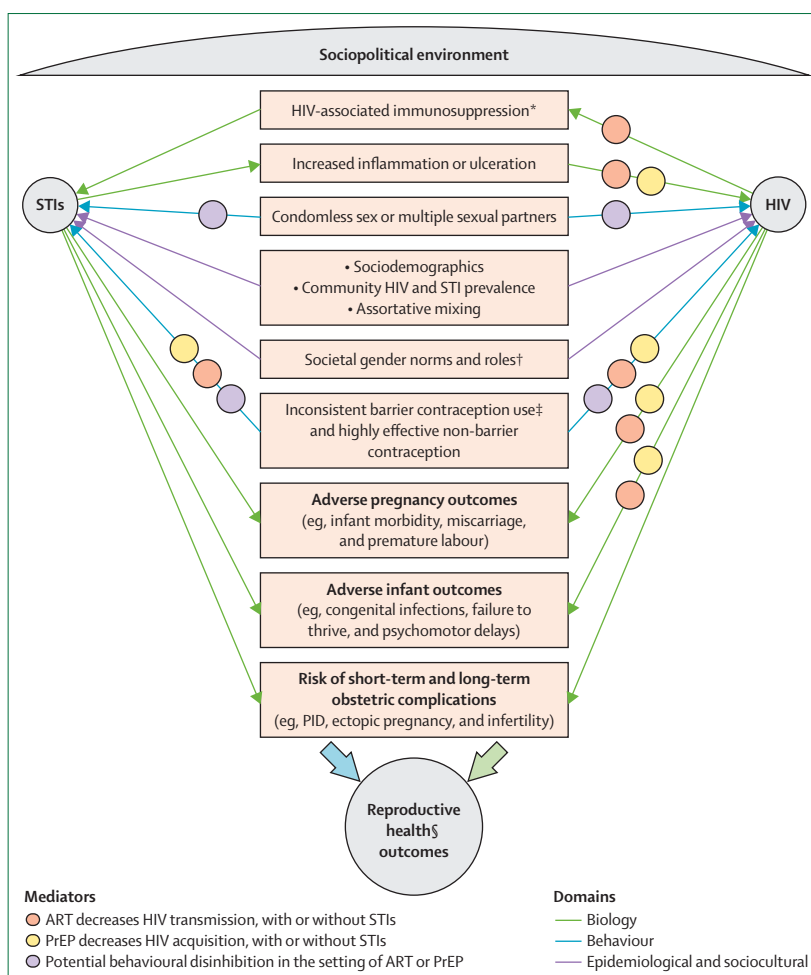


Figure 1: Examples of biological, behavioural, epidemiological, and sociocultural relationships affecting HIV, STIs, and reproductive health

The sociopolitical environment, which includes social determinants of health, is overarching and moderates the relationships between HIV, STIs, and reproductive health. Arrows are used to show the direction of relationships and connections between HIV, STIs, and selected reproductive health outcomes and biological, behavioural, and epidemiological and sociocultural factors. Circles show the effects of potential mediators (ie, ART, PrEP, and behavioural disinhibition) on some of these relationships. ART=antiretroviral therapy. PID=pelvic inflammatory disease. PrEP=pre-exposure prophylaxis. STI=sexually transmitted infection. *Increased herpes simplex virus type 2 ulcers. †Societal norms about empowerment of women and gender-based violence (eg, in societies where women have little agency to seek reproductive health services, rates of adverse pregnancy outcomes are often higher). ‡Decreases HIV and protects against most bacterial STIs but does not protect against many viral STIs. §Reproductive health outcomes refers to conception outcomes and maternal and infant health.

Panel 2: Examples of biological, behavioural, and epidemiological and sociocultural interactions of HIV, STIs, and selected aspects of reproductive health

Biology

- Bacterial STIs increase genital tract inflammation, which can lead to increased HIV transmission or acquisition
- Treating gonorrhoea decreases HIV concentrations in semen
- HSV-2 leads to genital ulcers (and inflammation), which can result in increased HIV transmission or acquisition
- Untreated HIV-related immunosuppression can increase the severity of HSV-2 disease in co-infected individuals
- HIV and STIs lead to adverse reproductive health outcomes
- HIV treatment will decrease the risk of mother-to-child HIV transmission and other adverse reproductive health outcomes

Behaviour

- An increased number of sexual partners increases the risk of transmitting or acquiring HIV and STIs
- Barrier contraception will decrease the risk of transmitting or acquiring HIV and bacterial STIs, and decrease the likelihood of conception
- Hormonal contraception might be associated with condomless sex, which can increase the risk of transmitting or acquiring HIV and STIs
- ART and PrEP will decrease HIV transmission or acquisition, but could increase the risk of pregnancy and transmitting or acquiring STIs because of behavioral disinhibition due to decreased concern about HIV risk

Epidemiology and sociocultural factors

- Assortative mixing in communities with high HIV or STI prevalence will increase the risk of transmitting and acquiring STIs or HIV
- Decreased social mobility because of sociodemographic factors (eg, poverty) can limit sexual partner choice and increase the risk of transmitting or acquiring HIV or STIs in communities with high prevalence
- Lower socioeconomic status could be associated with lower health literacy and the decreased likelihood of presenting for HIV and STI screening and care, which could lead to an increased likelihood of untreated infection
- Other social determinants of health (eg, access to care, housing stability, health literacy, transportation) might lead to less frequent engagement with HIV and STI health-care services
- Adverse sociopolitical environments could impede access to HIV and STI screening, treatment, and reproductive health services, leading to an increased likelihood of transmission and acquisition of HIV and STIs and adverse reproductive health outcomes

ART=antiretroviral therapy. HSV-2=herpes simplex virus type 2. PrEP=pre-exposure prophylaxis. STI=sexually transmitted infection.

progress is the legal status of abortion, where over 60 countries have liberalised their abortion laws in the past several decades. Only four countries have made abortion laws more restrictive, including the USA.⁴⁴ Nevertheless, as less restrictive laws do not always translate into available, accessible, affordable, and quality services, unsafe abortion remains a leading cause of maternal death in LMICs (see the first paper in this Series²).^{45,46} The sociopolitical climate in some major donor countries (particularly the USA) has the potential to threaten progress by limiting access to both contraception and abortion. These challenges are

particularly concerning, as policies that promote robust, accessible, and affordable family planning and other reproductive health services integrated with HIV and STI programmes have the potential to increase the use of all services, leading to better sexual and reproductive health outcomes (panel 1). The Trump Administration's curtailment of funding for comprehensive, accessible, and affordable family planning is irresponsible and detrimental, as these programmes are both cost-effective (contraception being one of the most cost-effective public health interventions) and drastically reduce the demand or need for abortion (see the fourth paper in this Series¹⁴).⁴⁷

HIV and STI synergism underscore the need for an integrated approach

The biological, behavioural, and epidemiological connections between HIV and other STIs (figure 1; panel 2) were understood early in the HIV epidemic.^{48,49} Despite this recognition, the findings did not immediately lead to programmatic integration. Before the introduction of effective ART in 1996, STIs were established as potentiating HIV transmission and acquisition through ulceration or inflammation, and HIV was established as affecting the severity of STIs through HIV-associated immunosuppression.^{48,49} The recognition of the relationships between STIs and HIV led to several clinical trials to investigate whether the community treatment of STIs could effectively decrease HIV incidence.⁵⁰ Ultimately, these trials did not support this hypothesis, possibly owing to the inability of study teams to treat all incident STIs at the right time with the right drugs, and the fact that STI reinfections were common.⁵¹

However, the advent of ART—with evidence that earlier initiation coupled with changes in HIV testing policies to routine testing, especially in high prevalence settings—changed HIV–STI dynamics by decreasing the sexual and parenteral transmission of HIV,⁵² decreasing the vertical transmission of HIV from pregnant women with HIV to their infants (eg, through breastfeeding),⁵³ and decreasing HIV acquisition when used as PrEP, regardless of whether bacterial STIs were present or not.⁵⁴ Notably, the wide deployment of ART has resulted in people with HIV leading longer and healthier lives and fewer people becoming infected with HIV.⁵⁵ Despite these advances, close to 1·5 million new HIV infections occurred last year (44% among women and girls aged 15–49 years and 55% among key populations such as gay men, transgender and non-binary people, people who inject drugs, and sex workers), underscoring the need for further efforts in testing, treatment, and prevention.⁵⁶ Although the incidence of HIV has decreased in many settings, continued condomless sex has been associated with an increase in the incidence and prevalence of STIs.⁵⁷ Normative guidelines now recommend routine screening for STIs for people with HIV or people at risk

Population	Adolescent girls and young women	Men who have sex with men	Transgender women	Sex workers	People who inject drugs and people who are incarcerated	Women of reproductive age
Clinical, sexual, and reproductive health interventions	• HIV testing, prevention, and treatment • STI testing, prevention, and treatment (including HPV) • Information and counselling on sexual and reproductive health • Family planning services • Prevention and management of SGBV • Pregnancy care, including prevention of mother-to-child transmission, antenatal care, delivery care, and postnatal care • Safe abortion care	• HIV testing, prevention, and treatment • STI testing, prevention, and treatment (including HPV) • Information and counselling on sexual and reproductive health • Prevention and management of SGBV	• HIV testing, prevention, and treatment • STI testing, prevention, and treatment (including HPV) • Prevention and management of SGBV • Information and counselling on sexual and reproductive health	• HIV testing, prevention, and treatment • STI testing, prevention, and treatment (including HPV) • Information and counselling on sexual and reproductive health • Family planning services • Prevention and management of SGBV • Safe abortion care • Prevention of cancers of the reproductive system (eg, HPV) • Detection and treatment of cancers of the reproductive system (eg, cervical cancer) • Pregnancy care (eg, prevention of mother-to-child transmission, antenatal care, delivery care, and postnatal care)	• Harm reduction services • Prevention and management of SGBV • All services for women of reproductive age	• HIV testing, prevention, and treatment • STI testing, prevention, and treatment (including HPV) • Information and counselling on sexual and reproductive health • Family planning services • Prevention and management of SGBV • Safe abortion care • Prevention of cancers of the reproductive system (eg, HPV) • Detection and treatment of cancers of the reproductive system (eg, cervical cancer) • Pregnancy care (eg, prevention of mother-to-child transmission, antenatal care, delivery care, and postnatal care) • Infertility services
Modes of delivery	• Primary health-care clinics • Drug shop or pharmacy • Mobile vans • Youth-friendly clinics	• Primary health-care clinics • HIV and STI clinics • Mobile vans	• Primary health-care clinics • HIV and STI clinics • Mobile vans	• Primary health-care clinics • HIV and STI clinics • Mobile vans	• Primary health-care clinics • Mobile vans • Drop-in centres • Mobile vans • Street medicine and ambulatory teams	• Primary health-care clinics • Reproductive health clinics

Figure 2: Examples of the difference in programmatic needs and service delivery models for different populations

Clinical sexual and reproductive health interventions and service delivery models are listed for key and priority populations and are compared with those of women of reproductive age (15–49 years). HPV=human papillomavirus. SGBV=sexual and gender-based violence. STI=sexually transmitted infection.

of HIV acquisition (including people taking PrEP), linking the need for an integrated approach to HIV and STI treatment and care.⁵⁸

Furthermore, using the opportunities by which people can connect with health services and providing integrated sexual and reproductive health services will help to close service gaps (figure 2). For example, people seeking contraceptive services or antenatal care should be offered HIV testing and PrEP. Men looking for STI care and treatment should be offered HIV testing and ART or PrEP, depending on serostatus. The development of doxycycline post-exposure prophylaxis (doxyPEP) as post-exposure prophylaxis to prevent the acquisition of bacterial STIs is another example of the need for an integrated approach to sexual and reproductive health, given that doxyPEP candidates can also benefit from HIV treatment or PrEP (see the third paper in this Series⁸).⁵⁹

Evidence to support sexual and reproductive health programmatic integration

The integration of sexual and reproductive health services has the potential to reduce fragmentation, improve the patient experience, deliver higher quality and more comprehensive care (panel 1),⁶⁰ and can improve the

return on financial investment.⁶¹ Recognising the overlap between HIV, STIs, and other sexual and reproductive health issues, technical experts and agencies have been recommending integrated approaches for decades.²² Programmatic integration generally entails joint operational activities at the service delivery level (eg, multitasked providers and comprehensive models).⁶² However, the role of linkages that extend beyond service integration—which encompass the synergies between health systems and laws, policies, and funding—need to also be considered.^{62–65} To this end, integration has been an increasing focus of several governments and groups, such as the Interagency Working Group on Sexual and Reproductive Health and HIV Linkages convened by UN Population Fund (UNFPA), WHO, and International Planned Parenthood Foundation (IPPF).^{25,66} Integration and linkages between HIV and sexual and reproductive health services can occur at multiple levels (eg, policy, health system, service, provider, and intervention or product level)^{67,68} and can be driven by financial or human resource constraints, sustainability, equity, improved user experiences, and improved health outcomes (panel 1).^{21,69}

Furthermore, a targeted review of the recent literature that examined the outcomes of sexual and reproductive

	Year	Study type	Outcomes, conclusions, and citations
HIV and sexual and reproductive health			
USA, UK, India, Thailand, China, and Haiti ⁷⁰	2010	Systematic review	This review of 35 studies shows that HIV and sexual and reproductive health linkage interventions were generally beneficial and feasible; in general, positive effects were shown for HIV incidence, STI incidence, condom use, contraceptive use, uptake of HIV testing, and quality of services; high-level facilitators were stakeholder involvement, capacity building, positive staff attitudes, non-stigmatising services, and the engagement of key populations ⁷⁰
HIV and family planning			
Kenya ⁷¹	2016	Original research	66% of women with HIV received integrated HIV and family planning care at their last HIV visit, and 56% of women who received integrated care received short-term contraception; there was no difference in the uptake of long-acting contraception between women who received integrated care and women who did not; satisfaction with integrated services was high (92%), and women who received integrated care showed lower fear of involuntary disclosure of HIV status (19%) than women who did not receive integrated care (27%); prominent reasons for preferring integrated care were to save time and money ⁷¹
Kenya ⁷²	2017	Original research	Service integration had a statistically significant positive effect on the technical quality of patient-provider consultation sessions; structural factors associated with technical quality were the availability of family planning commodities, adequate infrastructure, and reagents; provider factors were appropriate clinical knowledge and supervision; workload was negatively associated with technical quality ⁷²
Tanzania, Nigeria, Zambia, Eswatini, Kenya, Malawi, Zimbabwe, Uganda, South Africa, Cambodia, UK, and Scotland ⁷³	2017	Systematic review	This review of 17 studies on 14 distinct integrated HIV and family planning programmes (including nine integration models and seven instances of integration within a network of clinics) showed an increase in the uptake of more effective or modern methods of contraception, improvements in the unmet need for family planning at two of three sites, ^{74,75} improved knowledge, awareness, and attitudes (including among men) about family planning for women with HIV, and no difference in patient satisfaction compared with stand-alone HIV sites (one study); in nine of the integration models, women could obtain family planning services and commodities without leaving the building where they received HIV care and treatment; half of the reports evaluated integration within a network of clinics, providing examples of the scalability of integration; one programme implemented a peer-led, rights-based approach to minimise stigma and coercion; ⁷⁶ provider training and supervision was highlighted as a crucial component of integration; there were no differences in pregnancy outcomes ⁷³
HIV and tuberculosis; primary care; family planning; sexual and reproductive health; and maternal, newborn, and child health			
Kenya, South Africa, Zambia, Malawi, Ghana, Rwanda, Uganda, Mozambique, Eswatini, Zimbabwe, Nigeria, Ethiopia, Cameroon, Tanzania, Democratic Republic of the Congo, India, Indonesia, Viet Nam, China, Ukraine, Kazakhstan, USA, Lithuania, and Denmark ⁷⁷	2021	Systematic review and meta-analysis	This review of 114 studies shows that outcomes (eg, HIV testing uptake, ART initiation coverage, time to ART initiation, retention in care, and viral suppression) along the HIV care continuum tended to be better with integrated services; treatment success for non-HIV diseases and the uptake of non-HIV services were generally higher in integrated service models; meta-analyses showed no differences in HIV testing yield, ART adherence, HIV-free survival in infants, and HIV and non-HIV mortality ⁷⁷
ART=antiretroviral therapy. STI=sexually transmitted infection.			
Table 1: Examples of integration of HIV, STI, and other sexual and reproductive health services by location			

health and related programmatic integration shows that several systematic reviews and meta-analyses have evaluated integrated approaches in sexual and reproductive health programmes, and have generally reported more benefits than challenges (table 1; see search strategy and selection criteria).⁷⁰⁻⁷³

Patient-level data to support the case for the integration of HIV and sexual and reproductive health services are increasing (table 1).⁷⁸⁻⁸² Despite the large body of evidence to support integration, some have cautioned against

integrated services, raising concerns that the unique sexual and reproductive health needs of different genders and subpopulations require specialisation, that different operational requirements are needed to successfully provide HIV and STI services compared with reproductive health care,⁸³ and that tasking clinicians with providing multiple services could decrease quality of care by increasing health-care providers' workloads and diluting specialised services, resulting in the need for substantial training and resources to ensure effective

implementation.^{66,77} Furthermore, although integrated services could be associated with efficiencies, there are insufficient data to determine whether the quality and content of counselling in integrated programmes is similar to more specialised centres.

On the national level, although countries are increasingly adopting policies that support the integration of HIV and sexual and reproductive health services, the extent of programmatic integration is highly variable.⁶⁷ In 2022, 39 (25·8%) of 151 countries reported having national health strategies or policies that integrate the HIV response with other programming, which was an increase from 32 (21·2%) in 2021.⁵ Despite many governments and funders supporting the concept of programmatic integration, challenges remain owing to insufficiently coordinated systems, siloed funding streams, and difficulties in maintaining a well-trained health-care workforce.⁶⁸ Several recent reports provide case studies of national programmatic integration and some positive outcomes of such efforts (table 1).⁷² Other examples can be seen in panel 3, which highlights an initiative developed by the Ministry of Health in Zambia, and panel 4, which describes the expansion of major donors' interests in addressing reproductive health and STIs. Additionally, specific examples of sexual and reproductive health integration supported by international donors are given (table 2). Programmatic integration might also include the provision of services for behavioural health,¹¹⁰ non-communicable and chronic diseases,^{111,112} or harm reduction.⁶⁷ In the context of LMICs, it is also important to address other co-prevalent infectious diseases, such as tuberculosis.¹¹³

Comprehensive sexual and reproductive health programmes need to address human rights

In addition to the general population, the sexual and reproductive health and rights agenda needs to also address the needs of key populations (ie, groups with disproportionate burdens of HIV and STIs, decreased access to essential services, and who experience stigma and discrimination),^{114,115} including men who have sex with men (MSM), transgender women, sex workers, people who inject drugs, and other priority populations, including people who are incarcerated, migrants, and people who live in areas that face humanitarian and environmental crises (eg, war or climate change).¹¹⁶ Additionally, adolescent girls and young women (aged 15–24 years) in southern and eastern Africa are a priority population, given the high prevalence of HIV, STIs, and unmet reproductive health needs in this group.^{117,118} For example, the prevalence of modern contraceptive use in seven countries in west Africa was less than 17% between 2009 and 2014.¹¹⁹ Given that the prevalence of specific health disparities differs between groups and geographies, programmes and interventions need to be tailored to the relevant population.^{114,120} Additionally,

Panel 3: Meeting an unmet need: an enhanced community and facility-based model to integrate family planning into HIV services in Zambia

In Zambia, women experience a disproportionate burden of HIV, with a prevalence of 11% compared with 8% among men.⁸⁴ Compounding this burden is an unmet need for family planning, as reported by 16·4% of all women of reproductive age (15–49 years) in Zambia in 2023, leading to an estimated 510 000 unintended pregnancies.⁸⁴ To address this need, an intervention model that integrated HIV and family planning services was developed, implemented, and evaluated by ICAP at Columbia University in collaboration with the Zambia Ministry of Health and US Centers for Disease Control and Prevention at six health facilities in Lusaka that serve large populations of women with HIV.⁸⁵

The enhanced model included improving family planning documentation and monitoring through (1) the reintroduction of a family planning form within the electronic medical record system; (2) offering a full range of Zambian Ministry of Health-supplied contraceptives within HIV clinics (eg, male and female condoms, oral contraceptive pills, injectables, implants, and intrauterine devices); (3) training and mentoring of HIV care providers, nurses, and family planning counsellors on contraceptive provision and safer conception* counselling as recommended by WHO,⁸⁶ and (4) referrals to community-based distributors of contraceptives (ie, pills and injectables) if needed by patients between HIV clinic visits. Pre-intervention and post-intervention outcomes were evaluated for effectiveness at improving contraceptive uptake and safer conception counselling.

A total of 629 women with HIV of reproductive age were interviewed pre-intervention and 684 women were interviewed post-intervention. Current family planning use increased from 35% pre-intervention (July, 2018) to 49% post-intervention (April, 2019), and dual method use (ie, pills or injectables for hormonal contraception, oral medication for HIV prevention, plus a barrier method [eg, a condom]) increased from 8% to 18%, and the uptake of safer conception counselling increased from 27% to 39%. In addition, the self-reported unmet need for family planning decreased from 59% to 46%.

The integration of HIV and family planning services at the facility and community level led to significant increases in the uptake and access of sexual and reproductive services among women with HIV, thereby supporting the utility of integration in improving population health indicators and outcomes. Furthermore, this model shows the potential of using existing HIV-differentiated service delivery models, such as community-based ART distribution, to expand access to contraception.

ART=antiretroviral therapy. *Safer conception: strategies for decreasing HIV transmission within the context of intended conception among HIV-serodifferent couples.

local patterns of discrimination, the criminalisation of sexual behaviour, the prevalence of misinformation, and stigma in health-care facilities could affect access to and the uptake of sexual and reproductive health services, exacerbating health inequities. The programmatic integration of HIV, STIs, and reproductive health should also consider the diverse needs and ways to reach key and priority populations (figure 2; see the third paper in this Series⁸). The massive cuts in US assistance to sexual and reproductive health programmes (eg, PEPFAR) will require local governments and other donors to fill the funding void to ensure ongoing service delivery and that HIV and STI testing continues, that treatment is uninterrupted for people with HIV, and that PrEP access is not discontinued. Additionally, efforts to finally eliminate vertical transmission should be continued, as implementers (ie, funders and national programmes)

Panel 4: How donor funding has supported the integration of services

The global HIV response in high-burden regions has historically been driven by donor investments that emphasise focused advocacy, disease-specific funding mechanisms (eg, the US President's Emergency Plan for AIDS Relief; The Global Fund to Fight AIDS, Tuberculosis, and Malaria; and other bilateral and multilateral efforts), and verticalised (narrowly focused programmes—eg, only supporting periconception care, but not other aspects of women's health) service delivery with clear outcome-based approaches. This model—often referred to as HIV exceptionalism—has been highly effective in reaching substantial reductions in HIV incidence and mortality. However, as health systems evolve, there is a growing recognition that sustaining and advancing these gains requires a more integrated approach: an approach that strengthens overall health systems and expands access to comprehensive sexual and reproductive health services alongside HIV programming.

To sustain achievements, close programmatic gaps, and enhance country ownership, selected global health donors are increasingly supporting models that integrate HIV, sexually transmitted infection (STI), and other sexual and reproductive health services to build more resilient and sustainable health systems. This shift aims to maximise efficiencies, improve patient outcomes, and align with broader primary health-care objectives. Various donor-supported initiatives are facilitating this transition by enabling governments to develop and scale integrated service delivery models based on country priorities (table 1). In many settings, donors are promoting the co-location of HIV and sexual and reproductive health services within existing health facilities, ensuring a continuum of care under one roof. Kenya's comprehensive model exemplifies this approach by providing antiretroviral therapy, STI treatment, family planning, and maternal health services in a single facility, making it easier for women to access comprehensive care.

Efforts to enhance sustainability also include transitioning to national health information systems for programme monitoring. In some countries (eg, South Africa), data from integrated HIV and sexual and reproductive health services are sourced from national systems, which allows health ministries to track progress on HIV treatment and family planning goals with greater autonomy.

Similarly, donor-supported procurement and supply chain reforms are helping HIV programmes to better manage health supplies, ensuring the continuity of care for both HIV and sexual and reproductive health needs. In Mozambique, government-led quantification and forecasting meetings include sexual and reproductive health commodities alongside HIV medications, reducing stockouts and ensuring service integration. Coordination with The Global Fund to Fight AIDS, Tuberculosis and Malaria procurement systems is further ensuring that commodities that are not covered by one donor (eg, contraceptives and hormone therapy) are sourced from complementary funding streams.

By prioritising integration, donor-supported programmes are strengthening national health systems, enhancing sustainability, and ensuring that essential HIV and sexual and reproductive health services remain accessible to the populations that need them most.

have the means to address these challenges, but need the programmatic and political will.

Since the 1970s, data have shown that MSM, sex workers, and transgender women have faced disproportionately high rates of bacterial and viral STIs,^{121–123} which have been compounded by inadequate or unavailable prevention, screening, and treatment services.¹²⁴ Despite progress in HIV and STI treatment and advances in civil rights for minoritised sexual identities in some countries, as of 2025, 68 countries criminalise same-sex sexual behaviour between consenting adults.¹²⁵ In a recent study involving 10 African

countries, HIV burden in MSM was significantly higher in criminalised settings and countries with higher levels of repression (quantified by legality).¹²⁶ Similar dynamics exist for many transgender people, who have substantial needs for comprehensive sexual and reproductive health services worldwide.¹²⁷ Assaults on civil and human rights impede disease control, as people from minoritised and stigmatised communities will be less likely to present for clinical services, fearing that they will receive mistreatment by health-care workers or that they will be subject to police attention.

Another key population in need of integrative sexual and reproductive health services are sex workers, who have historically been a focus of programmatic efforts to control STIs even before effective therapies and prevention were available for most STIs.¹²⁸ The politicisation of sex work has arguably hindered efforts to provide essential services.¹²⁹ For example, in the 1990s, the Bush Administration conflated sex work with human trafficking, which led to restrictions on funding for sexual and reproductive health programmes associated with sex work,¹³⁰ thereby impeding effective HIV and STI prevention efforts. The stigma associated with sex work has affected HIV prevention programmes for women in settings where accessing these services was perceived as engaging in transactional sex—in some cultures, there is an expectation that women would be celibate until marriage, so if they accessed PrEP, they were assumed to be engaging in sex work.^{131,132} However, new technologies (eg, long-acting antiretrovirals and contraceptives) might allow for less frequent encounters with the health-care system or community delivery of sexual and reproductive health services, which could improve uptake and engagement. Additionally, comprehensive sexual and reproductive health services are also needed for people who inject drugs, for whom there are few examples of sexual and reproductive health programmes integrated with harm reduction services.¹³³

Challenges to sexual and reproductive health integration posed by funding limitations

One of the major challenges in optimising sexual and reproductive health outcomes is the recent stagnation or reduction in donor and domestic funding (see the fourth paper in this Series¹⁴). For example, domestic funding for HIV in LMICs declined by 6% in 2023 compared with 2022, continuing the decline of the previous 3 years.⁵ The availability of international resources in 2023 was nearly 20% lower than their peak in 2013, and the decline in HIV-specific funding has been substantial.¹³⁴ The Trump Administration has indicated their intent to cut their 2025 HIV funding commitments by 40%, and the UK, France, and Germany have also indicated they plan to decrease their respective levels of HIV funding.¹³⁴ This reduction includes the plateau in levels of funding through The

Description		Examples
Integration of HIV care and treatment programmes with sexual and reproductive health		
Co-location of services	HIV and sexual and reproductive health services provided at the same physical location	Uganda introduced a set of interventions targeting populations at high risk for HIV and STIs with HIV testing services (including HIV self-testing) and provided 96% of the population target of adolescent girls and young women with a full package of sexual and reproductive health services appropriate to their age and HIV risk; ⁸⁷ Zambia's Integrated Health project provides integrated HIV, reproductive health (including cervical cancer screening), and maternal, newborn, and child health services in 32 districts across three provinces; ⁸⁸ Haiti is integrating HIV, maternal and child health, and family planning services in the primary care setting; at the site level, Haitians receiving maternal and child health or family planning services can also obtain HIV education, risk assessment and screening, and STI education, diagnosis, and treatment; at the community level, Haiti provides integrated HIV self-testing, postnatal visits, immunisations, referral services, adherence counselling, and tracking, with seropositive pregnant women being referred to the closest site providing HIV treatment
Comprehensive care	Comprehensive services offered under one roof, including HIV testing, ART, family planning, STI treatment, and maternal health services	Kenya's Operation Triple Zero initiative is an asset-based programme that aims to nurture the potential in adolescents and young people (aged 10–14 years) with HIV to be part of the solution to their own health, and is a comprehensive option for adolescents with HIV that offers ART, STI testing and treatment, and family planning, antenatal, and postnatal care; ^{89,90} in South Africa, primary health care facilities and mobile health services in donor-supported districts have prioritised making various contraceptives available, alongside PrEP and HIV services
Mobile clinics	Mobile units providing integrated HIV and sexual and reproductive health services to reach underserved or remote populations	In Eswatini and South Africa, donor-funded economic empowerment programmes use mobile units to provide comprehensive HIV and sexual and reproductive health services to adolescent girls and young women (aged 15–24 years), including HIV self-testing, PrEP, PEP, Test and Start, ⁹¹ linkages to health facilities for long-term care and index testing (ie, contact tracing) for clients who test positive for HIV, and SGBV clinical services ^{92,93}
School health	Integration of HIV and sexual and reproductive health education (eg, testing, PrEP, and family planning counselling) in schools	A donor-funded economic empowerment programme in South Africa offers an integrated approach to prevention services in schools, working in collaboration with the South African Department of Education; ⁹⁴ a donor-funded economic empowerment programme in Mozambique supports school health corners where students access HIV education and contraception services ⁹⁵
Integration of sexual and reproductive health programmes with HIV testing services and prevention programmes		
Facility-based sexual and reproductive health and HIV testing	HIV testing services offered routinely to sexual and reproductive health patients through provider-delivered and self-testing options, with linkage to prevention services	In many donor-supported countries in sub-Saharan Africa, HIV testing is routinely offered in sexual and reproductive health facilities as part of comprehensive service packages ⁹⁶
Community-based sexual and reproductive health and HIV testing	Community-based sexual and reproductive health and HIV testing services delivered through provider-delivered and self-testing options	Mobile units in multiple settings offer both sexual and reproductive health and HIV services, including HIV self-testing and linkage to services for patients testing positive for HIV; in Eswatini, the PEPFAR-supported DREAMS on Wheels mobile outreach programme brought HIV testing services to adolescent girls and young women in their communities, increasing completion rates by reducing access barriers ⁹⁷
Retail-based sexual and reproductive health and HIV self-testing distribution	HIV self-testing kits distributed by pharmacists or in vending machines to patients who are collecting contraception; women receiving HIV self-testing kits offered support through helplines and linkage services	In Eswatini, Georgetown University piloted the distribution of HIV self-testing kits from pharmacies, integrating sexual and reproductive health and HIV services; pharmacists prompt patients accessing STI treatments or contraceptives to consider HIV self-testing ⁹⁸
Programmatic integration		
Vertical integration	HIV and sexual and reproductive health programmes managed under a single administrative structure	HIV and sexual and reproductive health services are managed together under a single administrative overarching programme, ensuring coordinated service delivery
Horizontal integration	Collaboration across different health programmes and sectors	In Ghana and Nigeria, HIV services are being integrated with immunisation programmes to ensure efficient service delivery ^{99,100}
Cross-training of health workers	Health-care providers trained to deliver both HIV and sexual and reproductive services	Providers are trained to offer a wide range of HIV and sexual and reproductive health services in a single visit, improving access and reducing service fragmentation

(Table 2 continues on next page)

	Description	Examples
(Continued from previous page)		
Health systems integration		
Integrated health information systems	Combining data from HIV and sexual and reproductive health services into a single health information system	Countries are developing integrated databases to track HIV and sexual and reproductive health service delivery more effectively, enabling better data sharing and service coordination
Unified supply chain management	Coordinating procurement and distribution of commodities for both HIV and sexual and reproductive health services	Efforts are being made to streamline the procurement and distribution of commodities (eg, HIV medications and contraceptives) through a unified system; in Haiti, these efforts happen through a so-called common basket strategy that ensures that procurements by funding mechanisms (eg, PEPFAR and The Global Fund to Fight AIDS, Tuberculosis and Malaria) leverage the same distribution systems ¹⁰¹
Integrated financing mechanisms	Pooling funding sources and aligning financial resources to support integrated service delivery	Countries are exploring joint financing mechanisms to support the integration of HIV and sexual and reproductive health services
Community-based integration		
CHWs	Using CHWs to deliver integrated HIV and sexual and reproductive health services at the community level	In many donor-supported countries, CHWs are providing a crucial link between community members and health services, offering both HIV and sexual and reproductive health services ^{102,103}
Peer-led initiatives	Engaging people with HIV and other community members in delivering and promoting integrated services	In South Africa and Uganda, mentors for donor-funded economic empowerment programmes (who are peers or near-peers [ie, similar age and sociodemographic background] of the programme participants) help facilitate access to HIV and sexual and reproductive health services; these mentors provide education on safe sex practices, family planning methods, and HIV prevention through both group and one-on-one sessions ¹⁰⁴
Community mobilisation and advocacy	Strengthening community involvement and advocacy to support and sustain integrated services	Community-led monitoring has emerged as a powerful tool for improving service delivery, accountability, and policy change in the integration of sexual and reproductive health and HIV services; in Uganda, community-led monitoring-supported civil society groups documented insufficient access to contraceptive methods for young women (aged 15–24 years) with HIV, leading to policy discussions on expanding integrated sexual and reproductive health services at HIV facilities ¹⁰⁵
Integration within priority populations		
Adolescent and youth-focused integration (aged 15–24 years)	Tailoring integrated services to meet the unique needs of adolescents and young people	In South Africa, Mozambique, and Kenya, youth-friendly clinics provide comprehensive sexuality education and integrated HIV and sexual and reproductive health services, helping adolescents access the care they need in a supportive environment; a donor-funded economic empowerment programme in Mozambique, in partnership with the Ministry of Health, has developed adolescent and youth-friendly health services clinics that integrate HIV prevention, sexual and reproductive health, and GBV services ¹⁰⁶
Gender-responsive integration	Designing services that address the specific needs of women and men	In Tanzania, family planning services are integrated with HIV care to meet the specific needs of women, including offering SGBV support programmes alongside HIV services ¹⁰⁷
Key populations integration	Providing tailored services for key populations such as sex workers, men who have sex with men, and people who inject drugs	In Tanzania, family planning services are integrated into mobile and community-based HIV testing services for key populations, particularly female sex workers; short-acting contraception methods are provided onsite, with referrals made for long-acting or permanent methods ^{108,109}
Adolescents, youth, and young people refers to those aged 15–24 years. ART=antiretroviral therapy. CHW=community health worker. GBV=gender-based violence. PEP=post-exposure prophylaxis. PEPFAR=The US President's Emergency Plan for AIDS Relief. PrEP=pre-exposure prophylaxis. SGBV=sexual and gender-based violence. STI=sexually transmitted infection.		
Table 2: Examples of HIV, STI, and sexual and reproductive health integration supported by bilateral and multilateral donor agencies		

Global Fund and PEPFAR before the 2024 US election.⁵ Recently, as the Trump Administration has curtailed current funding for PEPFAR and dismantled United States Agency for International Development (USAID), the long-term US Government support of HIV and related sexual and reproductive health programmes in LMICs is uncertain. This withdrawal is particularly unfortunate, as the return on investment for meeting the UNAIDS 95–95–95 targets by 2030

would be US\$11–14 for every dollar spent (see the fourth paper in this Series¹⁴).¹³⁵ The rapid curtailment of PEPFAR and other US funding for public health programmes has forced many African ministries of health to recommend the accelerated consolidation and integration of activities to maximise the use of limited resources.^{136,137}

Although donor and domestic financing for family planning and reproductive health is less than the funding

available for HIV, this funding has been declining as well. In 2022, donor funding for family planning in LMICs was \$1.31 billion (a decline of 9% from 2021)¹³⁸ and domestic financing in 61 LMICs was \$1.6 billion in 2022 (a decline of 3% from 2021).¹³⁹ In an era of constrained resources, it is worth noting that programmatic integration can often be cost-effective, but that the impacts of integration on costs are variable and programme-specific (see the fourth paper in this Series¹⁴⁰).^{77,140} Recent and anticipated shifts in foreign assistance for international family planning and reproductive health—particularly the elimination of all US support for family planning and additional expected cuts from the UK Government—will have substantial effects on global health systems, contraceptive access, reproductive outcomes, and abortion and post-abortion care. In 2023, the USA provided \$607.5 million in family planning funding, which constituted for approximately 30% of all donor government contributions.¹⁴¹ This funding was especially crucial for commodity financing, including the procurement of contraceptives, and technical assistance and systems support (eg, commodity tracking, transportation, and warehouse systems). In addition, the US Government was the only source or the dominant source of funding for family planning services and data systems in several countries. The sudden contraction of this support is already leading to stalled procurements, disruption in contraceptive distribution, and loss of access to long-standing public health resources. Without this support, programme quality, adaptability, and resilience are at risk. The US Government's decision to rejoin the so-called Geneva Consensus, which emphasises a nation's right to decide their own policies regarding health, life, and family issues without international input regarding policies on sensitive topics (eg, abortion or same-sex marriage), and the Trump administration's Executive Orders¹⁴² banning support for gender-diverse populations and abortion-related services signal the intention of the current US Government to join with other right-wing countries in opposing sexual and reproductive rights.

Provider, patient, and community considerations regarding integrated services

For programmatic integration to be successful, the cross-training of providers in HIV, STI, and other sexual and reproductive health clinical and support issues is essential.^{77,143} Although training needs will vary according to local sociodemographics and health-care systems, optimum health outcomes require that patients' initial clinical encounters occur with knowledgeable, skilled, and culturally responsive providers who can address relevant sexual and reproductive health and rights needs (including HIV and STIs) or make appropriate referrals.¹⁴⁴ Task shifting might allow for the more efficient delivery of sexual and reproductive health services, but requires sufficient health-care worker training to ensure that patients are able to access

necessary sexual and reproductive health services at each clinical encounter.

Several studies have highlighted the role of staff training and provider attitudes in the integrated provision of HIV, STIs, and other sexual and reproductive health services. A recent study that assessed a district-based model for integrating these services found that capacity building via provider training increased both the portion of providers performing HIV testing when providing other sexual and reproductive health services, and the portion of providers counselling on family planning and providing HIV and STI services.¹⁴⁵ Furthermore, although health-care providers implementing this model of integration perceived improved quality of care and reduced HIV-related stigma, workload, and costs within their health-care system, health-care providers also noted that staffing challenges and lack of training were barriers to integration.¹⁴⁶ An assessment from Kenya and Eswatini found an improved delivery of integrated services in centres where staff felt empowered to make decisions and share the workload.¹⁴⁷ Alongside training, the development of locally-relevant integrated HIV, STI, and reproductive health guidelines and decision tools could provide useful supports for busy clinicians.

Recent systematic reviews also noted multiple barriers to the optimal provision of integrated youth-friendly reproductive health services in sub-Saharan Africa, including insufficient knowledge and judgemental attitudes among health-care providers.^{148,149} Although health-care providers can be trusted resources for youth and other people who are in the process of affirming their identities,¹⁵⁰ sex and gender minority patients might avoid clinical care with inadequately knowledgeable health-care providers who express unsupportive attitudes¹⁵¹ or deny patients appropriate care for prejudicial reasons, resulting in missed opportunities to discuss behaviours with their patients that might put them at risk for HIV and STIs. Although many initiatives supported by governments and international donors have been developed in recent years to enhance the cultural responsiveness of clinicians in providing clinical services for sex and gender minority patients, these programmes need to be expanded to have population-level impact. The passing of so-called religious liberty legislation in several countries (including the USA) enables providers to refuse to provide contraception and evidence-based care for sexual and gender minority patients, and poses a serious threat to progress.

Additionally, although integrated sexual and reproductive health services have the potential to enhance the user experience by enabling patients to have multiple health needs addressed in a single visit, it is essential that consumers are educated to know how best to access the requisite services. Health literacy has been associated with improved outcomes in reproductive health¹⁵² and is a cornerstone of strategies to curtail the HIV and STI epidemics.¹⁵³ The use of the internet, mobile technologies, and the development of artificial intelligence tools have the

For more on **Initiative for Multipurpose Prevention Technologies** see <https://theimpt.org/>

For more on the **Tangerine Clinic** see <https://pribta-tangerine.com/>

For more on the **International Council on Harmonization** see <https://ich.org/>

For more on the **Fenway Initiative** see <https://fenwayhealth.org/>

potential to considerably enhance sexual and reproductive health literacy.¹⁵⁴ However, broad inaccessibility to digital technologies can exacerbate inequities, and as these tools can also disseminate misinformation, their roll-out should be monitored to achieve optimal public health benefits.

Community engagement is also key, to ensure that services are delivered in a manner that is equitable and responsive to local needs. Community activism has been a

core component of activist movements (eg, pro-choice and HIV movements) to ensure access to safe and effective reproductive technologies and to expedite the discovery of and access to HIV therapy. However, to ensure that these advances are accessible to those who need them most, local communities need to be organised and feel empowered and safe to advocate for their specific needs and to receive them in a culturally appropriate manner. One example is the Tangerine Clinic in Bangkok (panel 5). In addition to community engagement to optimise the receipt of clinical services, community voices are essential to ensure that research is conducted in a manner that addresses local interests and concerns.¹⁶³ Moreover, the development of local leaders and organisations who are knowledgeable about sexual and reproductive health and rights issues and are prepared to address misinformation circulated by anti-rights groups is essential.

Panel 5: Key population-led services: Tangerine Clinic model

In 2015, Thailand established its population-led health services model, where members of key population communities co-designed and co-delivered health services to ensure that the provided services were needs-based, demand-driven, and client-centred.¹⁵⁵ In the same year, the Tangerine Clinic was established as the first transgender person-led integrated sexual health and gender-affirming clinic in Thailand.¹⁵⁶ Transgender communities in Thailand guided the initial establishment of the Tangerine Clinic through the National Trans Community Consultation in 2015,¹⁵⁷ which identified gender-affirming hormones, neovaginal care, and HIV services as health priorities for the transgender population. Transgender communities expressed the expectation that their clinic should be free of stigma, provide a safe space, use sensitive intake forms, house transgender-affirming physicians, include transgender care providers, and be affordable. The clinic was called Tangerine Clinic, with a tangerine-coloured theme to symbolise the warmth, vibrancy, and inclusivity of the clinic.

Transgender-affirming services at the Tangerine Clinic include three core components: (1) gender-affirming hormone services, which comprise of hormone counselling, hormone prescription, and hormone level monitoring; (2) sexual health services (eg, testing for and treatment of HIV, viral hepatitis, and other STIs; the prevention of HIV, viral hepatitis, and STIs with condoms, lubricants, PrEP, PEP, and clean injecting equipment; hepatitis A virus, hepatitis B virus, and human papillomavirus vaccination and care; and neovaginal care); and (3) mental health and wellbeing services (eg, screening, peer counselling, psychosocial support, psychiatric medications, minor gender-affirming surgery and aesthetic surgery, referral for genital surgery, and referral for legal assistance).

Since 2015, the Tangerine Clinic has mainly been funded by USAID (through the LINKAGES and EpiC projects), and partly by clients' service fees. Between November, 2015, and May, 2023, the Tangerine Clinic served 5939 transgender women and 302 transgender men. Acceptability and satisfaction—and thus the uptake of testing—has been improved by using pooled sampling to reduce cost and the option to perform self-collection of samples as an alternative to provider collection in the clinic.¹⁵⁸ Service elements and service package promotions were continuously optimised via feedback and suggestions from online Tangerine communities via the Tangerine Facebook (22 100 followers) and TikTok (10 400 followers) platforms.

In 2020, the Tangerine Clinic partnered with Chulalongkorn University to establish the Center of Excellence in Transgender Health and developed the Thai Handbook of Transgender Healthcare Services¹⁵⁹ as a tool to guide the development and expansion of transgender-responsive care service models. The Tangerine Academy, formed in 2019,¹⁶⁰ has continued to deliver technical assistance—including didactic training, apprenticeship, and coaching—to partners throughout the Asia-Pacific region. Following the Thai General Election in 2023, the Thai Government announced support for gender-affirming care as a priority and allocated US\$4 million to support gender-affirming care in the fiscal year 2025.¹⁶¹ As a result of the Trump Administration's Executive Order in January 2025,¹⁶² USAID support for gender-affirming treatment at the Tangerine Clinic and the operation of the clinic ceased.

STI=sexually transmitted infection. PEP=post-exposure prophylaxis. PrEP=pre-exposure prophylaxis. USAID=United States Agency for International Development.

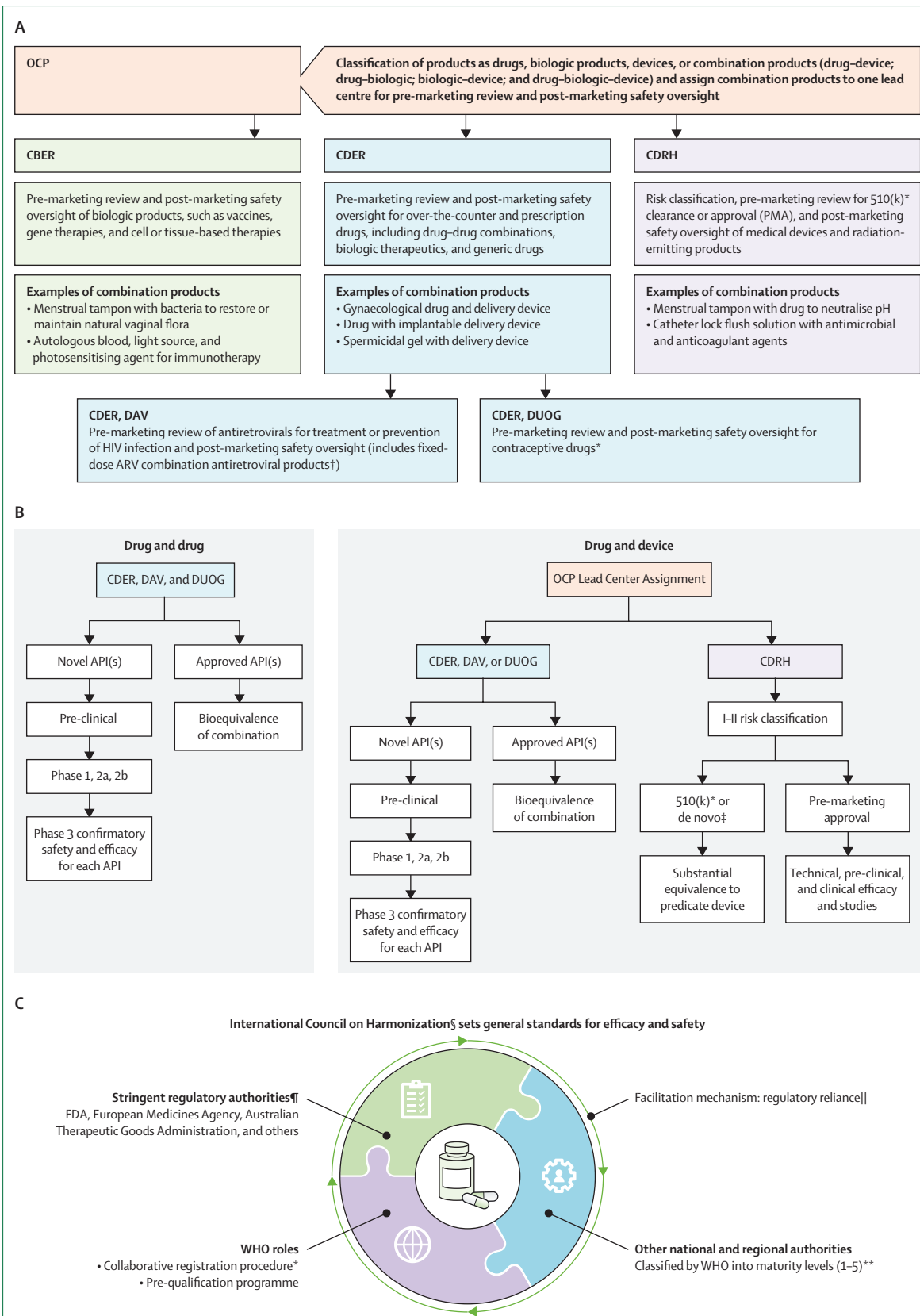
Evaluating new technologies for integrated products

Discussions of sexual and reproductive health integration need to also consider the regulatory landscape. Integration could be facilitated by new interventions or products that simultaneously address more than one sexual and reproductive health issue (see the second and third papers in this Series^{7,8}) and are behaviourally congruent (ie, the product aligns with the users' values, attitudes, and preferences). Multipurpose technologies (MPTs) can meet people's multiple sexual and reproductive health needs, have the potential to simplify product distribution and dispensing, can reduce clinic contact hours, and offer potential cost-savings. However, introducing MPTs in the health-care market is a

Figure 3: Global regulatory landscape for combination products

(A) FDA oversight of therapeutic products that combines drugs, devices, and biologic products by the OCP and relevant centres and divisions. Examples are provided for combination products under Lead Center Jurisdiction as assigned by OCP.¹⁶⁴ (B) Example of regulatory paths for HIV prevention–contraception combination products. (C) Key players in the global regulatory landscape. API=active pharmaceutical ingredient. ARV=antiretroviral. CBER=Center for Biologics Evaluation and Research. CDER=Center for Drug Evaluation and Research. CDRH=Center for Devices and Radiation Health. OCP=Office of Combination Products. DAV=Division of Antiviral Products. DUOG=Division of Urology, Obstetrics, and Gynecology. FDA=US Food and Drug Administration. PMA=pre-market approval. *510(k) is the FDA clearance pathway for low-risk devices with legally marketed devices. †Drug combinations such as fixed-dose combinations are not subject to OCP oversight or classification. ‡De Novo is the FDA clearance pathway for low-risk devices without a legally marketed device.

§The International Council on Harmonization facilitates worldwide harmonisation to ensure safe, effective, and high-quality medicines by developing and publishing standards for efficacy, safety, and quality that are adopted by member countries. ¶Stringent (or trusted) regulatory authorities have been classified by WHO as a national drug authority that applies stringent standards in its regulatory assessment processes, of which there are currently 36. ||Regulatory Reliance: enables an authority in one country to leverage the regulatory work performed by a competent and trusted (stringent) regulatory authority. **WHO-prequalified products or products approved by stringent regulatory authorities are eligible for a collaborative procedure created by WHO to facilitate assessment and accelerated national registration.¹⁶⁵



Panel 6: Call to action

This paper has aimed to synthesise the key messages from the first four papers in this *Lancet* Series^{2,7,8,14} on innovations in sexual and reproductive health that inform the development and sustainment of integrated sexual and reproductive health programmes. Grulich and colleagues discussed how changes in sociodemographics and cultural norms have led to increases in HIV, other sexually transmitted infections (STIs), and contraceptive needs (see paper one in this Series²). Anderson and colleagues discussed how innovations in reproductive health technologies have affected and will continue to affect family planning (see paper two in this Series⁷), and Peters and colleagues discussed the impact of the development of new anti-infective agents on the epidemiology of HIV and other STIs (see paper three in this Series⁸). Meyer-Rath and colleagues discussed how the wider implementation of many of the innovations highlighted in this collection of papers can be cost-effective, and in some cases, cost-saving (see paper four in this Series¹⁴).

Collectively, this Series makes a compelling case for expanding access to integrated sexual and reproductive health innovations. This Series paper reinforces that argument by showing how integration can improve patient experience and optimise the use of finite resources. The importance of respecting human rights is embedded throughout each contribution. These lessons are especially urgent in the current context of widespread defunding of global public health and the rise of regressive social policies.

To reach the optimal impact of the integration of sexual and reproductive health programmes, research, and human rights, we urgently call for a deliberate and coordinated set of actions across systems, communities, and sectors:

- National programmes need to take the lead in the design and long-term sustainment of integrated sexual and reproductive health services. Given the limitations of donor support, national leadership is essential to ensure sustainable financing, planning, and service delivery. Integration needs to be embedded within health sector strategies, budgets, and monitoring frameworks.
- Institutionally, normative agencies, ministries of health, and international funders need to prioritise the integration of sexual and reproductive health programmes through joint planning, shared infrastructure, and organisational realignment. Although a standardised model is neither feasible nor advised, each sector should assess how its portfolio can better support streamlined and user-centred services.
- To ensure delivery capacity of the highest standards of care to the greatest number of people, the health workforce need to be trained and equipped to provide high-quality integrated sexual and reproductive health services. Task-shifting to lay providers and peer navigators should be

implemented where appropriate. At minimum, providers need to be trained to recognise unmet sexual and reproductive health and rights needs and make effective referrals.

- At the national level, health systems need to be prepared to deliver person-centred and choice-driven integrated care. Programmes should respect individual preferences regarding how, where, and by whom care is provided. The full range of sexual and reproductive health services—including HIV and STI prevention and treatment—need to be provided in ways that are responsive to the lived experiences of diverse populations.
- Policy makers and legislators need to confront and repeal harmful laws and enact rights-affirming policies. These reforms should regularise access to comprehensive, affordable, and inclusive sexual and reproductive health services—including universal and unrestricted access to safe abortion, contraception, and services for survivors of sexual and gender-based violence.
- Harmful legislation and guidelines need to be urgently challenged and replaced by policies that regularise the provision of comprehensive, affordable, and accessible integrated sexual and reproductive health services. Policies and guidelines should be informed by decades of research results. Decriminalisation of same-sex relationships, sex work, and drug use also need to be prioritised to uphold bodily autonomy and public health.
- At the community level, civil society and community-led organisations need to be supported to expand on non-traditional and peer-based service delivery models. Community health workers and lay providers play a key role in addressing access gaps and building trust, particularly when they are supported with robust referral systems and face only minimal economic and geographical barriers to care.
- From a product development standpoint, new investments are needed to accelerate the scale-up of behaviourally congruent and evidence-based sexual and reproductive health tools. Innovations such as HIV and STI preventive vaccines, long-acting contraceptives, and affordable point-of-care diagnostics require ongoing research and development. These efforts need to be supported through blended financing that involves governments, industry, and philanthropic foundations—especially in light of recent cuts by key donors.
- Procurement systems also need to evolve to reflect the goals of integration. Global donors, financing agencies, and partner governments should support pooled purchasing mechanisms across sexual and reproductive health commodities. Even where institutional mandates are siloed, integrated procurement offers a practical and cost-effective solution to maintain access to life-saving health products.

(Continues on next page)

(Panel 6 continued from previous page)

- New evidence-based products and interventions that more effectively address the prevention of HIV, STIs, and pregnancy with behaviourally congruent products are urgently needed. The ongoing research and development of new solutions needs to continue, including the creation of new and effective contraception and preventive vaccines for HIV and STIs. Funding for the development of new products and their implementation has to come—for the foreseeable future—from industry, foundations, and national programmes, given radical funding cuts by several international key donors.
- To fully realise the promise of integrated sexual and reproductive health programming, governments and civil society need to actively advance the rights and dignity of marginalised populations. This development requires enacting inclusive policies, dismantling stigma, and ensuring sustained investment in culturally responsive, rights-based care. Key to this effort is the affirmation of bodily autonomy, reproductive freedom, and equitable access for all individuals, regardless of identity or circumstance.
- The rapidly shifting political climate has created barriers to making progress towards the UN Sustainable Development Goals and other public health goals. The recent actions of the US Government¹⁶² have destabilised these efforts, and mathematical modelling exercises¹⁸³ indicate that the anticipated consequences of these precipitous changes will be felt globally. Governments and civil society need to recognise the urgent need to identify and access alternative resources to support sexual and reproductive health and rights.

For more on the **UN Sustainable Development Goals** see <https://sdgs.un.org/goals>

complicated task, with multiple agents for different indications and a mix of oral therapeutics with devices. Regulatory oversight could therefore intersect different indications and require review by different centres that regulate therapeutics or devices. Figure 3 illustrates the complexity of oversight at the US Food and Drug Administration level (figure 3A), an example of regulatory paths for HIV prevention–contraception combination products (figure 3B), and relevant partners at the global level (figure 3C).

One example of an MPT is the dual prevention pill to simultaneously prevent HIV and pregnancy, which consists of emtricitabine, tenofovir disoproxil fumarate, ethinylestradiol, and levonorgestrel.¹⁶⁶ As the individual medications are currently clinically prescribed, it is necessary to show the bioequivalence of each agent when co-formulated versus when taken individually. However, combination products containing non-approved agents would need to show acceptable pharmacokinetic characteristics in combination, and the efficacy and safety of each of the included agents individually. Evidence of this would require the design of clinical trials able to capture the appropriate endpoint for each indication. Given the superior efficacy of long-acting antiretroviral PrEP agents compared with currently available oral options, the challenges of designing trials for combination products (including HIV prevention) should not be underestimated.^{167,168,169,170} Other considerations include accessibility, given that some funding sources are highly specific. Before the current Trump Administration, although PEPFAR supported the purchase of biomedical prevention tools, its mandate did not include the purchase of hormones. Ultimately, it will be important to determine which products donors and local governments will support, hopefully based on trial results and an informed understanding of community values and preferences.¹⁷¹ Although the goal of developing MPTs is logical and

supported by consumer perspectives, pragmatic approaches need to be considered in an era of constrained resources, such as social marketing campaigns to increase the uptake of already available modalities that can be used together (ie, prevention packages).

Investment in sexual and reproductive health research and programmatic evaluation

Questions remain in the pursuit of improving global sexual and reproductive health and rights and determining the best methods for implementing and integrating sexual and reproductive health-care service delivery. Tracking all research expenditures is challenging, as some allocations are for discovery science, others for clinical trials, and others support implementation science research. Moreover, some funds have been directed to HIV or STIs alone, and other research programmes have focused on integrated approaches.

Of the \$43 billion spent on HIV-related programmes in 2022 by the US Government, \$2·7 billion was spent on HIV research.¹⁷² The EU has committed €22 million to HIV and AIDS research under the Horizon 2020 initiative.¹⁷³ Additionally, since 2020, the French Government has allocated approximately €50 million annually for HIV and STI research (Yazdanpanah Y, Agence Nationale de la Recherche, Paris, France, personal communication). Between 2000 and 2025, the Gates Foundation has contributed more than \$53·8 billion to global health initiatives, with substantial investments in HIV, STI, and reproductive health research.^{174,175} The announcement in 2025 that the Gates Foundation has committed \$2·5 billion for women's health research might be able to substantially facilitate the discovery and delivery of promising new approaches to address key issues in sexual and reproductive health. In the past 5 years, confirmation of

the efficacy of long-acting antiretrovirals for HIV treatment and prevention has the potential to be transformative,^{167–169} but further research is needed to optimise the benefits of implementing these new modalities around the world¹⁷⁶ and to understand how to best use combinations of new discoveries to facilitate integrated sexual and reproductive health care.

While funding for STI research is overshadowed by financial investments in HIV research, STI research has recently garnered increased interest by governments, foundations, and industry (see the third paper in this Series⁸).¹⁷⁷ The US National Institutes of Health has historically been the largest funder of STI research, allocating \$155·5 million to STI research in 2023, approximately a third of which was specifically dedicated to women's health concerns.^{177,178} The Gates Foundation has been the largest non-governmental supporter of STI research.^{177,178} Although sexual and reproductive health research funding overall grew between 2018 and 2021 by 50% to nearly \$600 million annually (primarily owing

to increases in research support for HPV, gonorrhoea, and HSV-2), there was no growth in maternal health research (eg, eclampsia and postpartum haemorrhage prevention and treatment).⁹⁴ Recent statements by officials in the Trump Administration raise concerns as to whether HIV and STI research funding levels will be maintained during Trump's term in office.

As with antiretroviral PrEP,¹⁷⁹ there are several promising new contraceptive modalities being evaluated, including both hormonal (eg, monthly pills, longer acting micro-array patches, and injectables; see the second paper in this Series⁷) and non-hormonal approaches (see the first paper in this Series²). As new STI preventive and contraceptive modalities show efficacy, it will be important to determine whether they can be combined as MPTs, or if there are more optimal ways to ensure that people being protected against HIV or STIs are also able to access safe and effective contraception if they want to avoid pregnancy. Although approximately \$50 million was invested in MPT research in 2021—a considerable increase since 2010—¹⁸⁰ funding will have to substantially increase to mount efficacy trials of promising candidates.¹⁸¹

Further research is needed to understand how the most promising models of service delivery can be scaled up to ensure optimal HIV, STI, and other sexual and reproductive health outcomes using currently available tools, and to determine how these tools could be most effectively and efficiently combined in different settings and for diverse populations. New innovations will require social and behavioural science research to understand community and individual preferences and concerns, and implementation science to evaluate real-world impact.¹⁸² For any new product to have a lasting impact, community-engaged research and access will be essential.

Conclusion

The integration of HIV, STI, and other sexual and reproductive health services is highly desirable, and offers opportunities for users, providers, health systems, funders, and policy makers (tables 1 and 2; panel 1).⁷³ For people who have to travel large geographical distances to access care or who face opportunity costs for time spent seeking and receiving services, there are clear benefits to being able to receive all necessary health interventions and products from a single visit at a single facility, thereby avoiding the frustrations of fragmented care. Modelling data support the concept that programmes providing contraception services or antenatal care can create opportunities for HIV and STI prevention, and vice versa.⁶⁹ There are potential cost benefits if programmes can be integrated into comprehensive models (see the fourth paper in this Series¹⁴). Additionally, cross-trained providers would be able to identify the full scope of a person's sexual and reproductive health needs or make appropriate referrals, leading to earlier diagnoses, the opportunity to prevent some health

	Action area	Lead actors	Key actions	Timeframe
1	Integration leadership	National programmes	Lead the integration and sustainment of sexual and reproductive health services through health sector planning, budgeting, and delivery	2025–30
2	Policy and legal reform	Policy makers and legislators	Repeal harmful laws and enact inclusive policies for sexual and reproductive health access, abortion rights, decriminalisation, and bodily autonomy	2025–26
3	Person-centred care delivery	Health systems and providers	Ensure user-preferred, respectful, and comprehensive sexual and reproductive health care, including safe abortion and SGBV services	2025–onward
4	Community-led service delivery	Civil society and community health organisations	Expand community and peer-led care models, reduce access barriers, and strengthen referral systems	2025–ongoing
5	Normative and institutional alignment	Normative agencies, ministries of health, and donors	Promote integration through restructuring, joint planning, shared training, and portfolio reviews	2025–27
6	Product innovation and pipeline support	Industry, foundations, and governments	Fund and scale behaviourally congruent HIV and STI prevention, contraception, and diagnostics	2025–30
7	Workforce capacity and task shifting	Training institutions and ministries of health	Train and deploy a diverse, inclusive sexual and reproductive health workforce and implement task shifting to lay and peer providers	2025–26
8	Pooled procurement mechanisms	Global donors and financing agencies	Integrate procurement across vertical programmes to ensure cost-effective access to sexual and reproductive health commodities	2025–27
9	Human rights and cultural change	Governments, civil society, and faith-based groups	Support rights-affirming laws and stigma-free services tailored to key and marginalised populations	2025–onward

SGBV=sexual and gender-based violence. STI=sexually transmitted infection.

Table 3: Framework to ensure progress in the implementation of sexual and reproductive health programmes

conditions, and improved health outcomes. Moreover, with the development of successful MPTs, integrated care will be necessary if these products are to be widely and successfully deployed.

Despite recognising the benefits of a comprehensive approach to sexual and reproductive health issues, there are also challenges to successful implementation. Many funding streams are not flexible, and some health-care systems do not support integration or facilitate linkages. Existing clinical spaces might not be readily adapted to support the provision of new services, resulting in a suboptimal patient experience. The provision of integrated care requires knowledgeable and culturally responsive providers, which necessitates appropriate training and the political will of national and local authorities to support such efforts. Comprehensive data collection that addresses key relevant clinical issues is theoretically feasible in integrated settings, but might pose challenges due to time constraints if providers need to fill out multiple, separate patient records to meet the expectations of funders or local regulatory authorities. Service integration also requires that essential HIV, STI, and other sexual and reproductive drugs and products be readily available with reliable supply chain systems.

Although programmatic integration is desirable, the diversity of distinct population needs, available resources, and organisational challenges means that comprehensive service provision remains an ongoing process that will require further research, resources, training, and dissemination of best practices to achieve the full potential of any integrated methods (panel 6; table 3). Recent political challenges (eg, actions by the Trump Administration to eliminate all US Government funding for family planning, ban all support for sexual and gender minority people, and to halt crucial sexual and reproductive health programmes) have the potential to undermine decades of incremental gains. These policies also pose grave threats to addressing the global goals of sexual and reproductive health and rights.

Contributors

KHM conceptualised the paper after consultation with LGB and other co-authors, before writing the first draft. KHM and LGB obtained funding for the project. KHM oversaw data collection with assistance from JMH. JMH prepared figures and tables with assistance from KHM and LGB. CB, MC, WME, ASK, JMH, VM, NP, MR, VM, and AS wrote sections of drafts of the manuscript. CB, MC, WME, ASK, JMH, VM, NP, MR, BG, HR, MW, and AS participated in group meetings to discuss the manuscript, and identify additional data sources and key issues that needed to be addressed, and then reviewed and edited subsequent drafts of the manuscript.

Declaration of interests

KHM has received institutional research grants from Gilead, the US National Institutes of Health (NIH), the US Centers for Disease Control and Prevention, Merck, GSK, Moderna, and ViiV Healthcare; has held a position as an advisory board member for Gilead Science, ViiV Healthcare and Merck; and has received payment and royalties from writing for Up-to-Date and McGraw-Hill. CB held a position as President of the International AIDS Society. MSC has received research grants from NIH; has received consulting fees from Aerium and Optko; has received honoraria from Medscape, UpToDate, AstraZeneca, and

PeerReview Institute; has received financial support from GSK; and has held a position as co-chair of HIV Prevention Trials Networks and COVID-19 Vaccine Trials Network. JMH has received financial support and consulting fees from the Fenway Institute. ASK has received US Government grants from Health Resources and Services Administration's Bureau of Primary Health Care and their HIV/AIDS Bureau; has received royalties from McGraw Hill Education and American Psychiatric Association; and has received consulting fees from HRSA, University of Washington, University of California San Francisco, and Alpert School of Medicine at Brown. VM has received institutional grants from the Gates Foundation, Merck, Gilead and ViiV Healthcare. NP has received institutional grants from Gilead Sciences, USAID, ViiV Healthcare, The Global Fund to fight AIDS, Tuberculosis, and Malaria, and NIH; has received consulting fees from ViiV Healthcare and Gilead Sciences; has received honoraria from Gilead Sciences and Abbott; and has received equipment from Cepheid. MR has received grants from the Gates Foundation; holds a position as Chair on the NIH Tuberculosis Advisory Board; holds a position as a board member of CUGH and Fogarty International Center at NIH; is funded by the US Government through a consultancy agreement to University of California San Francisco. AS has received consulting fees from Cambridge Economic Policy Associates and Global Health Visions. MW participated on the Gilead Sciences Data Monitoring Committee for PrEP and National Institutes of Allergy and Infectious Disease Data and Safety Monitoring Board for HIV Vaccines; has served as Executive Director of AIDS Vaccine Advocacy Coalition; has held a position as President of the Tuberculosis Alliance Stakeholder Association; has held a position as a board member of Tuberculosis Alliance; and has held a position as a Governing Council Member of International AIDS Society. LGB received honoraria from Gilead Sciences, ViiV Healthcare, and Merck. All other authors declare no competing interests.

Acknowledgments

The authors thank Henry deVries for insights regarding the evolution of different approaches to sexual and reproductive health, and Yazdan Yazdanpanah and Francois Dabis, who provided information about the current expenditures for HIV and sexually transmitted infection research in France. Meg Doherty and Jeanne Marrazzo's input is gratefully appreciated. The authors also thank Jirair Ratevosian for his editorial assistance; he helped to edit and reframe the Call to Action and created the framework. The project that led to this paper was funded by an unrestricted educational grant from the Gates Foundation. The authors express appreciation to Gates Foundation Project Officers, Griffins Manguro and Erin Stonecipher, for their helpful assistance in the administration of this project. The assistance of Amy Rouse and Liza Rice in coordinating meetings is gratefully acknowledged. This project was supported by an unrestricted educational grant (INV-064094) from the Gates Foundation.

References

- 1 Starrs AM, Ezech AC, Barker G, et al. Accelerate progress-sexual and reproductive health and rights for all: report of the Guttmacher-Lancet Commission. *Lancet* 2018; **391**: 2642–92.
- 2 Grulich AE, Mercer C, Sturro B, et al. Partial progress in sexual and reproductive health and rights: the influence of sociocultural, behavioural, structural, and technological changes on epidemiological trends. *Lancet* 2025; **406**: 2100–18.
- 3 Starrs A, Anderson R. Definitions and debates: sexual health and sexual rights. *Brown J World Aff* 2016; **XXII**.
- 4 Tikmani SS, Ali SA, Saleem S, et al. Trends of antenatal care during pregnancy in low- and middle-income countries: Findings from the global network maternal and newborn health registry. *Semin Perinatol* 2019; **43**: 297–307.
- 5 UNAIDS. The urgency of now: AIDS at a crossroads. 2024. <https://www.unaids.org/en/resources/documents/2024/global-aids-update-2024> (accessed Oct 11, 2025).
- 6 WHO. New report flags major increase in sexually transmitted infections, amidst challenges in HIV and hepatitis. World Health Organization, 2024.
- 7 Anderson DJ, Bearak JM, Grimstad FW, et al. Biomedical innovations in contraception: gaps, obstacles, and solutions for sexual and reproductive health. *Lancet* 2025; **406**: 2119–32.

- 8 Peters RPH, Grinsztejn B, Celum C, et al. Innovations in the biomedical prevention, diagnosis, and service delivery of HIV and other sexually transmitted infections. *Lancet* 2025; **406**: 2133–51.
- 9 Cook MA, Wright GD. The past, present, and future of antibiotics. *Sci Transl Med* 2022; **14**: eabo7793.
- 10 Gonçalves BC, Lopes Barbosa MG, Silva Olak AP, et al. Antiviral therapies: advances and perspectives. *Fundam Clin Pharmacol* 2021; **35**: 305–20.
- 11 Cahill EP, Kaur S. Advances in contraception research and development. *Curr Opin Obstet Gynecol* 2020; **32**: 393–98.
- 12 Ayhan CHB, Bilgin H, Uluman OT, Sukut O, Yilmaz S, Buzlu S. A Systematic Review of the Discrimination Against Sexual and Gender Minority in Health Care Settings. *Int J Health Serv* 2020; **50**: 44–61.
- 13 Asuquo SE, Tahlil KM, Muessig KE, et al. Youth engagement in HIV prevention intervention research in sub-Saharan Africa: a scoping review. *J Int AIDS Soc* 2021; **24**: e25666.
- 14 Meyer-Rather G, Jamieson L, Mudimo E, et al. Who pays and what pays off in sexual and reproductive health? A review of the cost and cost-effectiveness of interventions and implications for future funding and markets. *Lancet* 2025; **406**: 2152–67.
- 15 WHO. Sexual and reproductive health and research (SRH). 2024. <https://www.who.int/teams/sexual-and-reproductive-health-and-research/key-areas-of-work/sexual-health/defining-sexual-health> (accessed Sept 15, 2024).
- 16 Ghebreyesus TA, Allotey P, Narasimhan M. Advancing the “sexual” in sexual and reproductive health and rights: a global health, gender equality and human rights imperative. *Bull World Health Organ* 2024; **102**: 77–78.
- 17 WHO. Reproductive health strategy to accelerate progress towards the attainment of international development goals and targets. World Health Organization, 2024.
- 18 Starrs A, Ezech A, Sedgh G, Singh S. To achieve development goals, advance sexual and reproductive health and rights. *Lancet* 2024; **403**: 787–89.
- 19 UN Department of Economic and Social Affairs. Goal 3 | Ensure healthy lives and promote well-being for all at all ages. https://sdgs.un.org/goals/goal3#targets_and_indicators (accessed Oct 11, 2024).
- 20 UN Department of Economic and Social Affairs. Goal 5 | Achieve gender equality and empower all women and girls. https://sdgs.un.org/goals/goal5#targets_and_indicators (accessed Oct 11, 2024).
- 21 Warren CE, Hopkins J, Narasimhan M, Collins L, Askew I, Mayhew SH. Health systems and the SDGs: lessons from a joint HIV and sexual and reproductive health and rights response. *Health Policy Plan* 2017; **32** (suppl 4): iv102–07.
- 22 Lindegren ML, Kennedy CE, Bain-Brickley D, et al. Integration of HIV/AIDS services with maternal, neonatal and child health, nutrition, and family planning services. *Cochrane Database Syst Rev* 2012; **9**: CD010119.
- 23 WHO, UNAIDS, UNFPA, IPPF, Global Network of People Living with HIV/AIDS. Rapid assessment tool for sexual and reproductive health and HIV linkages: a generic guide. 2009. <https://iris.who.int/handle/10665/69865> (accessed April 12, 2025).
- 24 Mayer KH, Bekker L-G, Stall R, Grulich AE, Colfax G, Lama JR. Comprehensive clinical care for men who have sex with men: an integrated approach. *Lancet* 2012; **380**: 378–87.
- 25 WHO, UNFPA, UNAIDS, IPPF. Linking sexual and reproductive health and HIV/AIDS. Gateways to integration: a case study from Kenya. 2008. <https://iris.who.int/server/api/core/bitstreams/b04cef8a-7e17-44dc-b82e-c79375d1c905/content> (accessed Oct 31, 2024).
- 26 Warren CE, Mayhew SH, Vassall A, et al. Study protocol for the Integra Initiative to assess the benefits and costs of integrating sexual and reproductive health and HIV services in Kenya and Swaziland. *BMC Public Health* 2012; **12**: 973.
- 27 Temmerman M, Kidula N, Tyndall M, Rukaria-Kaumbutho R, Muchiri L, Ndinya-Achola JO. The supermarket for women's reproductive health: the burden of genital infections in a family planning clinic in Nairobi, Kenya. *Sex Transm Infect* 1998; **74**: 202–04.
- 28 Stewart J, Baeten JM. HIV pre-exposure prophylaxis and sexually transmitted infections: intersection and opportunity. *Nat Rev Urol* 2022; **19**: 7–15.
- 29 UN Population Fund. New UNFPA report finds 30 years of progress in sexual and reproductive health has mostly ignored the most marginalized communities. 2024. <https://www.unfpa.org/press/new-unfpa-report-finds-30-years-progress-sexual-and-reproductive-health-has-mostly-ignored> (accessed May 15, 2025).
- 30 Sinding SS. Overview and perspective. In: Robinson WC, Ross JA, eds. *The global family planning revolution: three decades of population policies and programs*. The World Bank, 2007.
- 31 Cleland J, Bernstein S, Ezech A, Faundes A, Glasier A, Innis J. Family planning: the unfinished agenda. *Lancet* 2006; **368**: 1810–27.
- 32 Sen G, Germain A, Chen LC. *Population policies reconsidered: health, empowerment and rights*. Harvard University Press, 1994.
- 33 Family Planning 2030. 2024 measurement report. 2024. <https://www.fp2030.org/measurement-report-2024/> (accessed May 15, 2025).
- 34 Teasdale CA, Marais BJ, Abrams EJ. HIV: prevention of mother-to-child transmission. *BMJ Clin Evid* 2011; **2011**: 0909.
- 35 Abadan SS, Hawryluk L, Montandon M, et al. Preexposure prophylaxis among pregnant and lactating people in 18 PEPFAR-supported countries: a review of HIV strategies and guidelines. *Glob Health Sci Pract* 2022; **10**: e2200129.
- 36 Thean L, Moore A, Nourse C. New trends in congenital syphilis: epidemiology, testing in pregnancy, and management. *Curr Opin Infect Dis* 2022; **35**: 452–60.
- 37 World Health Organization. Global sexually transmitted infections programme. 2024. <https://www.who.int/teams/global-hiv-hepatitis-and-stis-programmes/stis/strategic-information#:~:text=Congenital%20syphilis-,Key%20facts,per%20100%20000%20live%20births> (accessed Dec 14, 2024).
- 38 WHO. Immunization coverage. 2024. <https://www.who.int/news-room/fact-sheets/detail/immunization-coverage> (accessed Jan 14, 2025).
- 39 Gravitt PE, Silver MI, Hussey HM, et al. Achieving equity in cervical cancer screening in low- and middle-income countries (LMICs): strengthening health systems using a systems thinking approach. *Prev Med* 2021; **144**: 106322.
- 40 UN. Progress towards the Sustainable Development Goals Report of the Secretary—general supplementary information. United Nations, 2024.
- 41 Say L, Chou D, Gemmill A, et al. Global causes of maternal death: a WHO systematic analysis. *Lancet Glob Health* 2014; **2**: e323–33.
- 42 WHO. Maternal mortality. 2025. <https://www.who.int/news-room/fact-sheets/detail/maternal-mortality> (accessed May 15, 2025).
- 43 WHO. Violence against women prevalence estimates, 2018: global, regional and national prevalence estimates for intimate partner violence against women and global and regional prevalence estimates for non-partner sexual violence against women. World Health Organization, 2021.
- 44 Center for Reproductive Rights. The world's abortion laws. 2024. <https://reproductiverights.org/maps/worlds-abortion-laws/> (accessed Oct 27, 2024).
- 45 WHO. Trends in maternal mortality 2000 to 2020: estimates by WHO, UNICEF, UNFPA, World Bank Group and UNDESA/Population Division. World Health Organization, 2023.
- 46 Cresswell JA, Alexander M, Chong MYC, et al. Global and regional causes of maternal deaths 2009–20: a WHO systematic analysis. *Lancet Glob Health* 2025; **13**: e626–34.
- 47 Copenhagen Consensus Center. Women and child health targets. 2015. <https://copenhagenconsensus.com/post-2015-consensus/health-women-children> (accessed May 15, 2025).
- 48 Mbopi-Kéou F-X, Grésenguet G, Mayaud P, et al. Interactions between herpes simplex virus type 2 and human immunodeficiency virus type 1 infection in African women: opportunities for intervention. *J Infect Dis* 2000; **182**: 1090–96.
- 49 Wasserheit JN. Epidemiological synergy. Interrelationships between human immunodeficiency virus infection and other sexually transmitted diseases. *Sex Transm Dis* 1992; **19**: 61–77.

- 50 Ng BE, Butler LM, Horvath T, Rutherford GW. Population-based biomedical sexually transmitted infection control interventions for reducing HIV infection. *Cochrane Database Syst Rev* 2011; 3: CD001220.
- 51 Ogale YP, Kennedy CE, Nalugoda F, et al. Nearly half of adults with symptoms of sexually transmitted infections (STIs) did not seek clinical care: a population-based study of treatment-seeking behavior among adults in Rakai, Uganda. *PLoS Glob Public Health* 2023; 3: e0001626.
- 52 Cohen MS, Chen YQ, McCauley M, et al. Antiretroviral therapy for the prevention of HIV-1 transmission. *N Engl J Med* 2016; 375: 830–39.
- 53 Siegfried N, van der Merwe L, Brocklehurst P, Sint TT. Antiretrovirals for reducing the risk of mother-to-child transmission of HIV infection. *Cochrane Database Syst Rev* 2011; 7: CD003510.
- 54 Donnell D, Baeten JM, Bumpus NN, et al. HIV protective efficacy and correlates of tenofovir blood concentrations in a clinical trial of PrEP for HIV prevention. *J Acquir Immune Defic Syndr* 2014; 66: 340–48.
- 55 Maartens G, Celum C, Lewin SR. HIV infection: epidemiology, pathogenesis, treatment, and prevention. *Lancet* 2014; 384: 258–71.
- 56 UNAIDS. Global HIV & AIDS statistics—fact sheet. 2024. <https://www.unaids.org/en/resources/fact-sheet> (accessed Sept 20, 2024).
- 57 Traeger MW, Cornelisse VJ, Asselin J, et al. Association of HIV preexposure prophylaxis with incidence of sexually transmitted infections among individuals at high risk of HIV infection. *JAMA* 2019; 321: 1380–90.
- 58 WHO. Consolidated guidelines on HIV, viral hepatitis and STI prevention, diagnosis, treatment and care for key populations. World Health Organization, 2022.
- 59 Luetkemeyer AF, Donnell D, Dombrowski JC, et al. Postexposure doxycycline to prevent bacterial sexually transmitted infections. *N Engl J Med* 2023; 388: 1296–306.
- 60 Hwang W, Chang J, Laclair M, Paz H. Effects of integrated delivery system on cost and quality. *Am J Manag Care* 2013; 19: e175–84.
- 61 Stenberg K, Sweeny K, Axelson H, Temmerman M, Sheehan P. Returns on investment in the continuum of care for reproductive, maternal, newborn, and child health. In: Black RE, Laxminarayan R, Temmerman M, Walker N, eds. Reproductive, maternal, newborn, and child health: disease control priorities, 3rd edn. The International Bank for Reconstruction and Development and The World Bank; 2016.
- 62 UNFPA, WHO, and IPPF. SRHR and HIV linkages: navigating the work in progress 2017. 2017. https://share-netinternational.org/wp-content/uploads/2021/09/IAWG_navigating-work-in-progress-2017.pdf (accessed Oct 27, 2024).
- 63 Kangudie DM, Guidigbi H, Mensah S, Bala AA, Delate R. Effective integration of sexual reproductive health and HIV prevention, treatment, and care services across sub-Saharan Africa: where is the evidence for program implementation? *Reprod Health* 2019; 16 (suppl 1): 56.
- 64 Mayhew SH, Hopkins J, Warren CE. Building integrated health systems: lessons from HIV, sexual and reproductive health integration. *Health Policy Plan* 2017; 32 (suppl 4): iv1–5.
- 65 Warren CE, Mayhew SH, Hopkins J. The current status of research on the integration of sexual and reproductive health and HIV services. *Stud Fam Plann* 2017; 48: 91–105.
- 66 Ford N, Newman M, Malumo S, Chitembo L, Gaffield ME. Integrating sexual and reproductive health services within HIV services: WHO Guidance. *Front Glob Womens Health* 2021; 2: 735281.
- 67 Hopkins J, Collins L. How linked are national HIV and SRHR strategies? A review of SRHR and HIV strategies in 60 countries. *Health Policy Plan* 2017; 32 (suppl 4): iv57–66.
- 68 Hope R, Kendall T, Langer A, Bärnighausen T. Health systems integration of sexual and reproductive health and HIV services in sub-Saharan Africa: a scoping study. *J Acquir Immune Defic Syndr* 2014; 67 (suppl 4): S259–70.
- 69 Bekker L-G, Alleyne G, Baral S, et al. Advancing global health and strengthening the HIV response in the era of the Sustainable Development Goals: the International AIDS Society-Lancet Commission. *Lancet* 2018; 392: 312–58.
- 70 Kennedy CE, Spaulding AB, Brickley DB, et al. Linking sexual and reproductive health and HIV interventions: a systematic review. *J Int AIDS Soc* 2010; 13: 26.
- 71 Colombini M, Mayhew SH, Mutemwa R, Kivunaga J, Ndwiwa C. Perceptions and experiences of integrated service delivery among women living with HIV attending reproductive health services in Kenya: a mixed methods study. *AIDS Behav* 2016; 20: 2130–40.
- 72 Mutemwa R, Mayhew SH, Warren CE, Abuya T, Ndwiwa C, Kivunaga J. Does service integration improve technical quality of care in low-resource settings? An evaluation of a model integrating HIV care into family planning services in Kenya. *Health Policy Plan* 2017; 32 (suppl 4): iv91–101.
- 73 Haberlen SA, Narasimhan M, Beres LK, Kennedy CE. Integration of family planning services into HIV care and treatment services: a systematic review. *Stud Fam Plann* 2017; 48: 153–77.
- 74 Baumgartner JN, Green M, Weaver MA, et al. Integrating family planning services into HIV care and treatment clinics in Tanzania: evaluation of a facilitated referral model. *Health Policy Plan* 2014; 29: 570–79.
- 75 Wanyenze RK, Matovu JK, Kamya MR, Tumwesigye NM, Nannyonga M, Wagner GJ. Fertility desires and unmet need for family planning among HIV infected individuals in two HIV clinics with differing models of family planning service delivery. *BMC Womens Health* 2015; 15: 5.
- 76 Thyda L, Sineng S, Delvaux T, et al. Implementation and operational research: integration of family planning services in a peer-managed HIV care clinic serving most-at-risk populations in Phnom Penh, Cambodia. *J Acquir Immune Def Syndr* 2015; 69: e120–26.
- 77 Bulstra CA, Hontelez JAC, Otto M, et al. Integrating HIV services and other health services: a systematic review and meta-analysis. *PLoS Med* 2021; 18: e1003836.
- 78 Evidence Action. Syphilis-free start. 2024. <https://www.evidenceaction.org/programs/syphilis-free-start> (accessed Jan 25, 2025).
- 79 Kinuthia J, Pintye J, Abuna F, et al. Pre-exposure prophylaxis uptake and early continuation among pregnant and post-partum women within maternal and child health clinics in Kenya: results from an implementation programme. *Lancet HIV* 2020; 7: e38–48.
- 80 Liambila W, Dwyer SC, Mdawida B, et al. Strengthening the integration of family planning and HIV services at the community level in Kenya. 2018.
- 81 Mugwanya KK, Pintye J, Kinuthia J, et al. Integrating preexposure prophylaxis delivery in routine family planning clinics: a feasibility programmatic evaluation in Kenya. *PLoS Med* 2019; 16: e1002885.
- 82 Cheng Y, Xu X, Xu J, et al. The need for integrating family planning and postabortion care in China. *Int J Gynaecol Obstet* 2008; 103: 140–43.
- 83 Foreit KGF, Hardee K, Agarwal K. When does it make sense to consider integrating STI and HIV services with family planning services? *Int Fam Plan Perspect* 2002; 28: 105–07.
- 84 Family Planning 2030. FP2023 core indicator summary sheet: 2022–2023 annual progress report, Zambia. Family Planning 2030, 2023.
- 85 Medley A, Tsiouris F, Pals S, et al. An evaluation of an enhanced model of integrating family planning into HIV treatment services in Zambia, April 2018–June 2019. *J Acquir Immune Defic Syndr* 2023; 92: 134–43.
- 86 WHO. Contraceptive eligibility for women at high risk of HIV: Guidance statement: Recommendations on contraceptive methods used by women at high risk of HIV. World Health Organization, 2019.
- 87 URC. Regional Health Integration to Enhance Services-North, Acholi (RHITES-N, Acholi) Activity. 2024. <https://www.urc-chs.com/projects/rhites-n-acholi> (accessed Oct 22, 2024).
- 88 Pact. Accelerating the integration of HIV and RMNCH services: experiences from USAID Zambia Integrated Health. 2024. <https://www.pactworld.org/library/accelerating-integration-hiv-and-rmnch-services-experiences-usaid-zambia-integrated-health> (accessed Oct 22, 2024).
- 89 Centers for Disease Control and Prevention. From a spark to a wildfire: Operation Triple Zero. 2024. <https://www.cdc.gov/global-health/impact/operation-triple-zero.html> (accessed Oct 22, 2024).
- 90 WHO, UNICEF. Adolescent-friendly health services for adolescents living with HIV: from theory to practice. 2019.
- 91 Butler V, Kutwayo A, Martin CE, et al. Implementing differentiated and integrated HIV prevention services for adolescent girls and young women: experiences from oral PrEP rollout in primary care services in South Africa. *J Adolesc Health* 2023; 73 (suppl 6): s58–66.

- 92 AMICAALL Eswatini. Insika ya Kusasa. <https://www.amicaalleswatini.org/programmes/insika-yakusasa/> (accessed Oct 22, 2024).
- 93 Bantwana World Education Initiative. Insika ya Kusasa. 2024. <https://bantwana.org/project/insika-ya-kusasa/> (accessed Oct 22, 2024).
- 94 Impact Global Health. G-FINDER 2023 sexual & reproductive health research & development report: beyond spillovers. 2023.
- 95 PEPFAR. COP 2022 Mozambique. 2022. <https://www.state.gov/wp-content/uploads/2022/09/Mozambique-COP22-SDS-.pdf> (accessed Sept 30, 2025).
- 96 PEPFAR. Country and regional operational plan guidance for all PEPFAR-supported countries. 2023. <https://www.state.gov/wp-content/uploads/2023/02/PEPFAR-2023-Country-and-Regional-Operational-Plan.pdf> (accessed Sept 30, 2025).
- 97 Bantwana. Insika ya kusasa. 2023. <https://bantwana.org/project/insika-ya-kusasa/> (accessed Sept 30, 2025).
- 98 Differentiated Service Delivery. HIVST for triage in Eswatini: improving entry-point coverage. 2025. <https://www.differentiatedservicedelivery.org/resources/hivst-for-triage-in-eswatini-improving-entry-point-coverage> (accessed Sept 30, 2025).
- 99 CQUIN Network. Optimizing family planning and HIV integration: lessons from early adopters in the CQUIN Network. 2024. https://cquin.icap.columbia.edu/wp-content/uploads/2024/06/Optimizing-Family-Planning-and-HIV-Integration_projecting-deck.pdf (accessed Oct 22, 2024).
- 100 Kachale F, Mahaka I, Mhuriro F, et al. Integration of HIV prevention and sexual and reproductive health in the era of anti-retroviral-based prevention: findings from assessments in Kenya, Malawi and Zimbabwe. *Gates Open Res* 2022; 5: 145.
- 101 PEPFAR. Haiti COP 2023 strategic direction summary. 2023. <https://www.prepwatch.org/wp-content/uploads/2024/06/Haiti-Strategic-Direction-Summary-2023.pdf> (accessed Sept 30, 2025).
- 102 Zulu JM, Kinsman J, Hurtig AK, et al. Integrating community health assistant-driven sexual and reproductive health services in the community health system in Nyimba district in Zambia: mapping key actors, points of integration, and conditions shaping the process. *Reprod Health* 2019; 16: 122.
- 103 Rudgard WE, Dzumbunu SP, Yates R, et al. Multiple impacts of Ethiopia's Health Extension Program on adolescent health and well-being: a quasi-experimental study 2002–2013. *J Adolesc Health* 2022; 71: 308–16.
- 104 Prevention CfDCA. Saving lives through the DREAMS program. 2024. <https://www.cdc.gov/global-hiv-tb/php/success-stories/dreams-saving-lives.html> (accessed Oct 22, 2024).
- 105 Tumusiime JK, Canagasabay D, Mudioppe P, et al. Integrating HIV prevention with family planning services for adolescent girls and young women in Uganda: perspectives of adolescent girls and young women, health care providers, and policymakers. *Front Reprod Health* 2025; 7: 1441829.
- 106 Akun D, Oluoch-Madiang' D, Thoya D. Meet a mentor preventing HIV and AIDS in Western Kenya. 2023. <https://www.path.org/our-impact/articles/turning-the-tide-in-the-fight-against-hiv-and-aids-in-western-kenya/> (accessed Oct 22, 2024).
- 107 EpiC. The power of choice: family planning services for young women in Tanzania. 2022. <https://www.fhi360.org/wp-content/uploads/2024/02/resource-epic-tanzania-choice-brief.pdf> (accessed Oct 22, 2024).
- 108 EpiC. HIV and primary health care: unlocking the synergies of integrated services. 2024. <https://epicproject.blog/wp-content/uploads/2024/04/Service-Integration-Webinar-Slides.pdf> (accessed March 19, 2024).
- 109 EpiC. Addressing the family planning needs of female sex workers 2022. <https://epicproject.blog/addressing-the-family-planning-needs-of-female-sex-workers/> (accessed Oct 22, 2024).
- 110 Chuah FLH, Haldane VE, Cervero-Licerias F, et al. Interventions and approaches to integrating HIV and mental health services: a systematic review. *Health Policy Plan* 2017; 32 (suppl 4): iv27–47.
- 111 Watt N, Sigfrid L, Legido-Quigley H, et al. Health systems facilitators and barriers to the integration of HIV and chronic disease services: a systematic review. *Health Policy Plan* 2017; 32 (suppl 4): iv13–26.
- 112 Njuguna B, Vorkoper S, Patel P, et al. Models of integration of HIV and noncommunicable disease care in sub-Saharan Africa: lessons learned and evidence gaps. *AIDS* 2018; 32 (suppl 1): S33–42.
- 113 Mudzengi D, Sweeney S, Hippner P, et al. The patient costs of care for those with TB and HIV: a cross-sectional study from South Africa. *Health Policy Plan* 2017; 32 (suppl 4): iv48–56.
- 114 Jin H, Restar A, Beyrer C. Overview of the epidemiological conditions of HIV among key populations in Africa. *J Int AIDS Soc* 2021; 24 (suppl 3): e25716.
- 115 WHO. Consolidated guidelines on HIV, viral hepatitis and STI prevention, diagnosis, treatment and care for key populations. World Health Organization; 2022.
- 116 Brown T, Peerapatanapokin W. Evolving HIV epidemics: the urgent need to refocus on populations with risk. *Curr Opin HIV AIDS* 2019; 14: 337–53.
- 117 Roxo U, Mobula ML, Walker D, Ficht A, Yeiser S. Prioritizing the sexual and reproductive health and rights of adolescent girls and young women within HIV treatment and care services in emergency settings: a girl-centered agenda. *Reprod Health* 2019; 16 (suppl 1): 57.
- 118 Maughan-Brown B, Banounghin BH, Little MT, et al. Tackling the triple threat in Kenya: factors associated with protection against HIV risk, gender-based violence, and pregnancy among adolescent girls and young women. *AIDS Behav* 2025; 29: 1738–46.
- 119 Ayanore MA, Pavlova M, Groot W. Unmet reproductive health needs among women in some West African countries: a systematic review of outcome measures and determinants. *Reprod Health* 2016; 13: 5.
- 120 Beyrer C. Tailoring biomedical interventions for key populations. *Lancet HIV* 2015; 2: e8–9.
- 121 Schreeder MT, Thompson SE, Hadler SC, et al. Hepatitis B in homosexual men: prevalence of infection and factors related to transmission. *J Infect Dis* 1982; 146: 7–15.
- 122 Tota JE, Giuliano AR, Goldstone SE, et al. Anogenital human papillomavirus (HPV) infection, seroprevalence, and risk factors for HPV seropositivity among sexually active men enrolled in a global HPV vaccine trial. *Clin Infect Dis* 2022; 74: 1247–56.
- 123 Mohammed H, Blomquist P, Ogaz D, et al. 100 years of STIs in the UK: a review of national surveillance data. *Sex Transm Infect* 2018; 94: 553–58.
- 124 Baral SD, Poteat T, Strömdahl S, Wirtz AL, Guadamuz TE, Beyrer C. Worldwide burden of HIV in transgender women: a systematic review and meta-analysis. *Lancet Infect Dis* 2013; 13: 214–22.
- 125 Beyrer C, Kamarulzaman A, Isbell M, et al. Under threat: the International AIDS Society—Lancet commission on health and human rights. *Lancet* 2024; 403: 1374–418.
- 126 Lyons CE, Twahirwa Rwema JO, Makofane K, et al. Associations between punitive policies and legal barriers to consensual same-sex sexual acts and HIV among gay men and other men who have sex with men in sub-Saharan Africa: a multicountry, respondent-driven sampling survey. *Lancet HIV* 2023; 10: e186–94.
- 127 Reisner SL, Poteat T, Keatley J, et al. Global health burden and needs of transgender populations: a review. *Lancet* 2016; 388: 412–36.
- 128 Decker MR, Crago A-L, Chu SKH, et al. Human rights violations against sex workers: burden and effect on HIV. *Lancet* 2015; 385: 186–99.
- 129 Bhardwaj A, Comins CA, Guddera V, et al. Prevalence of depression, syndemic factors and their impact on viral suppression among female sex workers living with HIV in eThekweni, South Africa. *BMC Womens Health* 2023; 23: 232.
- 130 Masenior NF, Beyrer C. The US anti-prostitution pledge: First Amendment challenges and public health priorities. *PLoS Med* 2007; 4: e207.
- 131 Lichtwarck HO, Mbotwa CH, Kazaura MR, Moen K, Mmbaga EJ. Early disengagement from HIV pre-exposure prophylaxis services and associated factors among female sex workers in Dar es Salaam, Tanzania: a socioecological approach. *BMJ Glob Health* 2023; 8: e013662.
- 132 Makhakhe NF, Sliep Y, Meyer-Weitz A. "Whatever is in the ARVs, is also in the PrEP" Challenges associated with oral pre-exposure prophylaxis use among female sex workers in South Africa. *Front Public Health* 2022; 10: 691729.
- 133 Roth AM, Tran NK, Felsher M, et al. Integrating HIV preexposure prophylaxis with community-based syringe services for women who inject drugs: results from the project SHE demonstration study. *J Acquir Immune Defic Syndr* 2021; 86: e61–70.

- 134 Wexler A, Kates J, Oum S, Lief E. Donor government funding for HIV in low- and middle-income countries in 2023. 2024. <https://files.kff.org/attachment/Report-Donor-Government-Funding-for-HIV-in-Low-and-Middle-Income-Countries-in-2024.pdf> (accessed Sept 8, 2025).
- 135 UNAIDS. New report from UNAIDS shows that AIDS can be ended by 2030 and outlines the path to get there. 2023.
- 136 Republic of Kenya Ministry of Health. Impact of the United States Government Stop Work Order. Nairobi, Kenya: Ministry of Health, 2025: 1–54.
- 137 The Republic of Uganda Ministry of Health. Guidance on Improvement of Service Delivery in Both Central and Local Government Health Facilities. In: Secretary Oot P, ed. Kampala, Uganda: Ministry of Health, 2025: 1–5.
- 138 KFF. Donor government funding for global family planning declines to lowest level since 2016. April 24, 2024. <https://www.kff.org/global-health-policy/press-release/donor-government-funding-for-global-family-planning-declines-to-lowest-level-since-2016/> (accessed Oct 11, 2024).
- 139 Family Planning 2030. Finance—progress report 2023. 2024.
- 140 Seninde I, Schutte C, Smith E. Integration of HIV services with primary health care: a comprehensive review of costs and cost-effectiveness. AIDS 2024, the 25th International AIDS Conference; July 22–26, 2024.
- 141 Singh S, Sedgh G, Sully EA, Owolabi O, Wittenberg J. Protecting global sexual and reproductive health and rights in the face of retrograde US policies and positions. *Lancet* 2025; **405**: 1650–53.
- 142 National Women's Law Center. The Trump Administration's first actions in 2025 targeting patients, providers, and reproductive health care access. 2025. <https://nwl.org/resource/the-trump-administrations-first-actions-in-2025-targeting-patients-providers-and-reproductive-health-care-access/> (accessed Sept 8, 2025).
- 143 Church K, Wringe A, Lewin S, Ploubidis GB, Fakudze P, Mayhew SH. Exploring the feasibility of service integration in a low-income setting: a mixed methods investigation into different models of reproductive health and HIV care in Swaziland. *PLoS One* 2015; **10**: e0126144.
- 144 World Health Organization. Introducing a framework for implementing triple elimination of mother-to-child transmission of HIV, syphilis and hepatitis B virus: policy brief. 2023. <https://www.who.int/publications/i/item/9789240086784> (accessed Oct 21, 2024).
- 145 Milford C, Bekinska M, Greener LR, Mabude Z, Smit J. Implementation of a sexual and reproductive health service integration model: South African providers' reports. *Cogent Med* 2019; **6**: 1592740.
- 146 Abrams JA, Rutledge J, Opara I. Learning from community-based HIV prevention to inform control and mitigation of the COVID-19 pandemic. *Prev Med* 2023; **169**: 107445.
- 147 Mayhew SH, Sweeney S, Warren CE, et al. Numbers, systems, people: how interactions influence integration. Insights from case studies of HIV and reproductive health services delivery in Kenya. *Health Policy Plan* 2017; **32** (suppl 4): iv67–81.
- 148 Ninsiima LR, Chiumia IK, Ndejjo R. Factors influencing access to and utilisation of youth-friendly sexual and reproductive health services in sub-Saharan Africa: a systematic review. *Reprod Health* 2021; **18**: 135.
- 149 Jonas K, Crutzen R, van den Borne B, Reddy P. Healthcare workers' behaviors and personal determinants associated with providing adequate sexual and reproductive healthcare services in sub-Saharan Africa: a systematic review. *BMC Pregnancy Childbirth* 2017; **17**: 86.
- 150 Keuroghlian AS, Ard KL, Makadon HJ. Advancing health equity for lesbian, gay, bisexual and transgender (LGBT) people through sexual health education and LGBT-affirming health care environments. *Sex Health* 2017; **14**: 119–22.
- 151 Khozah MY, Nunu WN. Sexual and gender minorities inclusion and uptake of sexual and reproductive health services: a scoping review of literature. *Am J Mens Health* 2023; **17**: 15579883231184078.
- 152 Kilfoyle KA, Vitko M, O'Connor R, Bailey SC. Health literacy and women's reproductive health: a systematic review. *J Womens Health (Larchmt)* 2016; **25**: 1237–55.
- 153 Mgbako O, Conard R, Mellins CA, Dacus J-D, Remien RH. A systematic review of factors critical for HIV health literacy, ART adherence and retention in care in the U.S. for racial and ethnic minorities. *AIDS Behav* 2022; **26**: 3480–93.
- 154 Burns C, Bakaj A, Berishaj A, Hristidis V, Deak P, Equils O. Use of generative AI for improving health literacy in reproductive health: case study. *JMIR Form Res* 2024; **8**: e59434.
- 155 Vannakit R, Janyam S, Linjongrat D, et al. Give the community the tools and they will help finish the job: key population-led health services for ending AIDS in Thailand. *J Int AIDS Soc* 2020; **23**: e25535.
- 156 Barmania S. Tangerine Clinic: championing transgender health care. *Lancet HIV* 2023; **10**: e701.
- 157 Janamnuysook R, Taesombat R, Wong J, et al. Innovating healthcare: Tangerine Clinic's role in implementing inclusive and equitable HIV care for transgender people in Thailand. *J Int AIDS Soc* 2025; **28**: e26405.
- 158 Hirsanthikul A, Janamnuysook R, Himma L, et al. Acceptability and satisfaction towards self-collection for chlamydia and gonorrhoea testing among transgender women in Tangerine Clinic, Thailand: shifting towards the new normal. *J Int AIDS Soc* 2021; **24**: e25801.
- 159 IHRI. The Thai handbook of transgender healthcare services. 2021. <https://ihri.org/the-thai-handbook-of-transgender-healthcare-services-available-now/> (accessed Sept 8, 2025).
- 160 IHRI. Tangerine Academy launched and conducting Thailand's first Transgender Competent Care training. 2020. <https://ihri.org/tangerine-academy-launched-and-conducting-thailands-first-transgender-competent-care-training/> (accessed Sept 8, 2025).
- 161 Janamnuysook R, Taesombat R, Wong J, et al. Innovating healthcare: Tangerine Clinic's role in implementing inclusive and equitable HIV care for transgender people in Thailand. *J Int AIDS Soc* 2025; **28**: e26405.
- 162 KFF. US foreign aid freeze and dissolution of USAID: timeline of events. 2025. <https://www.kff.org/global-health-policy/u-s-foreign-aid-freeze-dissolution-of-usaid-timeline-of-events/> (accessed Sept 8, 2025).
- 163 Li C, Zhao P, Tan RKJ, Wu D. Community engagement tools in HIV/STI prevention research. *Curr Opin Infect Dis* 2024; **37**: 53–62.
- 164 US Food and Drug Administration. RFD jurisdictional decisions. 2018. <https://www.fda.gov/combination-products/jurisdictional-decisions/rfd-jurisdictional-decisions> (accessed Oct 16, 2025).
- 165 WHO. Collaborative Registration Procedure for prequalified medicines and vaccines. <https://www.who.int/teams/regulation-prequalification/regulation-and-safety/facilitated-product-introduction/collaborative-registration-procedure/procedure-for-prequalified-med-vax> (accessed Oct 3, 2025).
- 166 Friedland BA, Mathur S, Haddad LB. The promise of the dual prevention pill: a framework for development and introduction. *Front Reprod Health* 2021; **3**: 682689.
- 167 Landovitz RJ, Donnell D, Clement ME, et al. Cabotegravir for HIV prevention in cisgender men and transgender women. *N Engl J Med* 2021; **385**: 595–608.
- 168 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.
- 169 Bekker L-G, 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.
- 170 Kelley Colleen F, Acevedo-Quinones M, Agwu Allison L, et al. Twice-yearly lenacapavir for HIV prevention in men and gender-diverse persons. *N Engl J Med* 2025; **392**: 1261–76.
- 171 Friedland BA, Plagianos M, Savel C, et al. Women want choices: opinions from the Share.Learn.Shape global internet survey about multipurpose prevention technology (MPT) products in development. *AIDS Behav* 2023; **27**: 2190–204.
- 172 KFF. U.S. federal funding for HIV/AIDS: trends over time. 2024. <https://www.kff.org/hiv/aids/fact-sheet/u-s-federal-funding-for-hiv-aids-trends-over-time/> (accessed October 23 2024).
- 173 Commission E. Research D-Gf. Innovation. Research and innovation to fight HIV/AIDS. Publications Office. 2020.
- 174 Gates Foundation. HIV. 2025. <https://www.gatesfoundation.org/our-work/programs/global-health/hiv> (accessed October 30 2024).
- 175 Gates Foundation. Women's health innovations. 2024. <https://www.gatesfoundation.org/our-work/programs/gender-equality/womens-health-innovations> (accessed October 30 2024).

- 176 Cresswell FV, Lamorde M. Implementation of long-acting antiretroviral therapy in low-income and middle-income countries. *Curr Opin HIV AIDS* 2022; **17**: 127–34.
- 177 CAVAC. Sexually transmitted infections: a review of the 2022 vaccine and diagnostic research and development pipeline and investments. 2024.
- 178 NIAID Now. Sexually transmitted infections—a closer look at NIAID research. 2024.
- 179 AVAC. The Future of ARV-Based Prevention and More. 2024. <https://avac.org/resource/infographic/the-future-of-arv-based-prevention-and-more/> (accessed Jan 7, 2024).
- 180 AVAC. MPT R&D funding 2018-2021. 2024. <https://avac.org/resource/infographic/mpt-rd-funding-2018-2021/> (accessed Nov 1, 2024).
- 181 HIV Vaccines and Microbicides Resource Tracking Working Group. HIV prevention research & development funding trends, 2000–2014: investing in innovation in an evolving global health and development landscape. 2015.
- 182 Geng EH, Nash D, Phanuphak N, et al. The question of the question: impactful implementation science to address the HIV epidemic. *J Int AIDS Soc* 2022; **25**: e25898.
- 183 Cavalcanti DM, Ferreira de Sales LdO, Ferreira da Silva A, et al. Evaluating the impact of two decades of USAID interventions and projecting the effects of defunding on mortality up to 2030: a retrospective impact evaluation and forecasting analysis. *Lancet* 2025; **406**: 283–94.

Copyright © 2025 Elsevier Ltd. All rights reserved, including those for text and data mining, AI training, and similar technologies.