Pipeline Report » 2025

PrEP and Microbicides

TAG
Treatment Action Group

PrEP and Microbicides Pipeline 2025

By Richard Jefferys

On June 18, 2025, the U.S. Food and Drug Administration (FDA) approved the twice-yearly injectable HIV capsid inhibitor lenacapavir for pre-exposure prophylaxis (PrEP) based on the results of the PURPOSE 1 and PURPOSE 2 efficacy trials. The infrequent dosing and high efficacy make lenacapavir PrEP a significant advance, designated the breakthrough of the year in 2024 by the journal *Science*.

At the time the 2024 PrEP and Microbicides Pipeline Report was published, the results from PURPOSE 1 were only available via a press release, demonstrating unprecedented 100 percent efficacy in a trial that recruited 5,368 young cisgender women aged 16–25 in South Africa and Uganda. Details were subsequently presented at the AIDS 2024 conference in Munich, accompanied by simultaneous full publication in the *New England Journal of Medicine*.

Shortly afterward, in September 2024, the findings were announced from PURPOSE 2, a partner trial assessing lenacapavir PrEP among 3,295 cisgender men, transgender women, transgender men, and gender-nonbinary individuals who have sex with partners assigned male sex at birth. The intervention reduced the risk of HIV acquisition by 96 percent compared to the background HIV incidence in the populations assessed prior to the trial, and this equated to only two HIV diagnoses among 2,180 participants receiving lenacapavir. The trial also demonstrated superiority compared to a group assigned to receive Truvada PrEP, in which there nine cases of HIV acquisition among 1,087 individuals. Results were subsequently presented at the R4P Conference in Peru in October 2024 and published in the *New England Journal of Medicine* on November 27.

Several additional lenacapavir PrEP studies are ongoing:

- PURPOSE 3, a collaboration with the HIV Prevention Trials Network (HPTN) assessing the pharmacokinetics (PK), safety, and acceptability of twice-yearly injectable lenacapavir versus daily Truvada for PrEP in 250 cisgender women in the United States.

- PURPOSE 4, another collaboration with the HPTN evaluating the same parameters in approximately 180 people who inject drugs.

- PURPOSE 5, which is taking place in France and the United Kingdom and "has an intentional focus on recruiting participants from groups across France and the United Kingdom that are disproportionally affected by HIV and often underrepresented in clinical trials" (Gilead press release). The study has recruited 268 participants.

Gilead is also pursuing the possibility of delivering lenacapavir PrEP just once yearly, which could offer an even more transformative HIV prevention option. Promising PK and safety data were presented at CROI 2025 and published simultaneously in *the Lancet*.

The impetus toward less frequent, potentially more convenient and discrete dosing intervals is also motivating ViiV Healthcare to assess options for modifying injectable cabotegravir (currently approved for bimonthly PrEP administration under the name Apretude). Two clinical trials are testing an "ultra long-acting" (ULA) formulation given every four months: a 191-person phase 2b study and a smaller phase I assessment of switching from the approved long-acting cabotegravir to the ULA version.

Merck is taking a slightly different tack by looking to develop long-acting oral PrEP. Initially, the lead candidate was islatravir, a novel antiretroviral nucleoside reverse transcriptase translocation inhibitor (NRTTI) that appeared amenable to monthly dosing. However, plans had to be amended due to an unexpected adverse effect on lymphocyte counts observed at higher doses that stymied further development for monthly PrEP.

The company has now pivoted to an alternate NRTTI candidate, MK-8527. The drug has shown prevention efficacy in the SIV/macaque model, and phase Ib studies in people with HIV generated information to select monthly dosing options for a phase II trial in HIV-negative participants that was completed in February of this year. Results are pending, with phase III PrEP efficacy trials planned if the data proves favorable. An evaluation of MK-8527 in lactating female participants is recruiting and several studies investigating potential interactions with other drugs are also underway (see table 1). A presentation at the 2024 R4P conference indicated that long-acting delivery via implant may be a possibility in the future.

The National Institute of Allergy and Infectious Diseases (NIAID) has — at least for the time being — made good on a promise to continue studying topical microbicide approaches by supporting the launch of the HPTN 106 study in October 2024. The trial is evaluating a tenofovir douche that has been advanced by Craig Hendrix and colleagues at Johns Hopkins University in their DREAM (development of rectal enema as microbicide) program (see table 2).

Ordinarily the approval of biannual lenacapavir PrEP would be cause for great optimism, but the regime that took power in the US on January 20, 2025, has launched a devastating attack on the United States President's Emergency Plan for AIDS Relief (PEPFAR) – a vital program that planned to play a key role in providing global access to lenacapavir PrEP. PEPFAR's funding agency, the United States Agency for International Development (USAID), has been essentially shut down, with largely unverified claims that elements of the program will continue under the State Department. An almost complete lack of transparency has led to profound uncertainty regarding which services might be maintained, and HIV prevention for key populations has been singled out as no longer a priority due to the ignorant bigotry of those now making decisions.

USAID also funded MATRIX, a "Project to Advance the Research and Development of Innovative HIV Prevention Products for Women." Two of their planned clinical trials were covered in last year's Pipeline Report:

- MATRIX 001, a phase I study to assess the safety and PK of the vaginal insert in an estimated 60 cisgender women at sites in Kenya, South Africa, and the US.

- MATRIX 002, which was investigating candidate placebo prototype vaginal films at sites in Kenya, South Africa, Zimbabwe, and the US.

MATRIX 002 appears to be one of the studies whose termination without notice was covered in a horrifying *New York Times* article documenting how funding was stopped by Elon Musk and associates as he publicly bragged about "feeding USAID into the wood chipper." The article states: "The stop-work order was so immediate and sweeping that the research staff would be violating it if they helped the women remove the rings." Investigators did so anyway to avoid breaches of ethics and internationally accepted rules and laws regulating the protection of research participants.

The MATRIX program was supporting early phase research and development for nine potential HIV prevention products for women. The program's website was among those disappeared in an Orwellian purge linked to USAID's decimation, the last intact version in the internet archive is dated February 20, 2025.

The new administration is also undermining, disrupting, and defunding scientific research more broadly, with National Institutes of Health (NIH) grants related to HIV/AIDS preferentially targeted with termination notices. Provision of 2025 funds to the HIV clinical research networks, including the HPTN, has reportedly been held up, compounded by what are essentially attempts to blackmail prominent academic institutions like Columbia University and Harvard into complying with the irrational fascistic proclamations of the gaggle currently in charge of the executive branch. Researchers at Columbia have a leadership role in the HPTN, and critical data centers for two other networks — Advancing Clinical Therapeutics Globally (ACTG) and the International Maternal Pediatric Adolescent AIDS Clinical Trials Group (IMPAACT) — are located at Harvard.

Further blocks to research include a ban on funding to South Africa clearly rooted in racism plus a newly announced "pause" on NIH grant subawards to international partners. A revised policy on international awards is due to be announced by September 30, supposedly involving direct handling by NIH despite the severe losses of staff that have occurred in recent months. At the time of writing, a US budget proposal for FY 2026 is advancing that will cut NIH funding by nearly 40 percent.

Absent a successful effort to reverse or at least mitigate this slash-and-burn assault on science, the implications will be profound for the future development of biomedical prevention and treatment interventions for HIV and all other conditions. The HPTN conducted the large international trials that led to the approval of long-acting injectable cabotegravir PrEP, and NIH-supported international infrastructure — including in South Africa — underpinned the ability of Gilead Sciences to conduct PURPOSE 1 & 2 lenacapavir PrEP efficacy studies.

NIH funding of laboratory basic science research into the structure and workings of the HIV capsid also facilitated the discovery of lenacapavir, as researcher Wesley Sundquist explained at an NIH Office of AIDS Research Advisory Council meeting in the fall of 2024 (a videocast is available online).

As is noted in all of TAG's HIV Pipeline Reports for 2025, it's vital that people in the US who care about science and medical research do whatever they can to alert Congressional representatives, media, and their communities about the unfolding crisis.

Table 1: Pre-exposure Prophylaxis (PrEP)

Agent	Class/Type	Manufacturer/Sponsor	Delivery	Status
Cabotegravir NCT06134362 (long-term follow up of participants in HPTN 083, HPTN 084, and associated substudies) NCT03164564 (cisgender women) NCT02720094 (MSM and transgender women) NCT06741397 (4-month dosing interval) NCT06786520 (switch from 2-month to 4-month dosing formulations) NCT06033547 (new formulations F or G in adults without HIV) NCT05418868 (subcutaneous delivery with recombinant human hyaluronidase PH20) NCT06970223 (Phase I tolerability and acceptability study with lenacapavir)	INSTI	ViiV Healthcare	IM, SC	Phase III Phase IIb/III Phase II Phase I

- Approved by the FDA for adults and adolescents at risk of HIV acquisition on December 20, 2021, World Health Organization guidelines recommending long-acting cabotegravir (CAB LA) as an HIV prevention option issued July 28, 2022.
- Also on July 28, 2022, ViiV Healthcare and the Medicines Patent Pool announced a voluntary licensing agreement designed to allow for generic manufacture and "help enable access in 90 countries."
- New phase I and phase II studies of CAB LA formulations designed for administration every four months initiated since the publication of the 2024 Pipeline Report.
- Results from HPTN 083 and 084 were published in the *New England Journal of Medicine* and *The Lancet*, respectively. Open-label extension phases of both trials are ongoing.
- An April 2025 paper in the *Lancet HIV* reported findings from the HPTN 084-1 study, indicating that CAB LA is a "safe, tolerable, and acceptable option for the prevention of HIV in adolescent girls."
- Secondary analysis from HPTN 083 demonstrating maintenance of efficacy in the setting of bacterial sexually transmitted infections (STIs) published in *Clinical Infectious Diseases* in November 2024.
- Preliminary results from a secondary analysis from HPTN 084 describing safety and PK in pregnant women reported in the *Journal of the International AIDS Society* in January 2025.
- The unique challenges of diagnosing HIV infection in recipients of CAB LA PrEP were described in a July 2024 paper in the *New England Journal of Medicine*. The authors note that the presence of the drug can suppress viral replication leading to delayed and diminished levels of HIV antigen and anti-HIV antibodies detected by standard tests.
- A report on the first year of the open-label phase of HPTN 083 was published in the *Lancet HIV* in November 2023. CAB LA continued to show high efficacy compared to Truvada, but adherence to both interventions declined and 18 additional cases of HIV acquisition were documented among recipients (most occurred more than six months after the last injection). In terms of adverse events, higher rates of hypertension, total and LDL cholesterol, malaise, and proctitis were observed in CAB LA recipients and continue to be carefully monitored.
- A presentation on the open-label extension phase of HPTN 084 at the IAS 2023 conference reported that a high proportion of participants (78%) chose CAB LA as their favored PrEP option; the results were subsequently published in *PLoS One* in October 2024.
- A phase I trial is testing two new potentially longer-acting formulations codenamed F or G in participants without HIV.
- A trial launched in June 2022 (NCT05418868) is investigating new formulations with the potential for dosing every four months. Preliminary results were reported at CROI 2024. The study also assessed whether recombinant human hyaluronidase PH20 (rHuPH20) can improve delivery of CAB LA, but this approach has been discontinued due to high rates of injection site reactions and unfavorable PK.
- A substudy of HPTN 83 investigated the safety, tolerability, and acceptability of CAB LA among HIV-uninfected adolescents assigned male at birth, including men who have sex with men (MSM), transgender women, and gender-nonconforming people. The enrollment target was 50 participants, but the study is now listed as completed as of July 2023 with a total of nine participants enrolled. Favorable results were reported at the 2024 R4P conference.
- ViiV Healthcare is sponsoring a phase I tolerability and acceptability study with HIV-negative participants that involves switching from CAB LA to lenacapavir or vice versa.
- A phase I trial assessing PK, safety, tolerability, and acceptability of CAB LA in adult Chinese men at low risk for HIV acquisition has been completed with results published in *Antimicrobial Agents and Chemotherapy* on March 15, 2022.

Agent	Class/Type	Manufacturer/Sponsor	Delivery	Status
Lenacapavir NCT04994509 (PURPOSE 1) NCT04925752 (PURPOSE 2) NCT06101329 (PURPOSE 3, HPTN 102) NCT06101342 (PURPOSE 4, HPTN 103) NCT06513312 (PURPOSE 5) NCT06970223 (Phase I tolerability and acceptability study with CAB LA)	Capsid inhibitor	Gilead	SC, oral	Phase III Phase I

- An inhibitor of the HIV capsid protein approved by the FDA for use as a treatment in December 2022. The long-acting formulation for subcutaneous injection is administered every six months.
- Injections every six months approved for PrEP by the FDA on June 18, 2025.
- Gilead sponsored two phase III efficacy trials:
  - PURPOSE 1 evaluated lenacapavir, Descovy, or Truvada PrEP in 5,368 young women aged 16–25 in South Africa and Uganda. Results were published in the *New England Journal of Medicine* on July 24, 2024 (see main text). All participants have been offered open-label lenacapavir.
  - PURPOSE 2 tested lencapavir or Truvada PrEP in 3,295 cisgender men, transgender women, transgender men, and gender-nonbinary people who have condomless receptive anal sex with partners assigned male at birth. Studies are located in Argentina, Brazil, Mexico, Peru, Puerto Rico, South Africa, and the United States. Results were published in the New *England Journal of Medicine* on November 27, 2024.
- A substudy involving 124 adolescent participants in PURPOSE 1 was presented at CROI 2025, reporting that lenacapavir was safe and well tolerated with similar PK to adults.
- Additional smaller studies focused on PK, safety, and acceptability are ongoing in cisgender women and people who inject drugs in the United States (PURPOSE 3/HPTN 102 and PURPOSE 4/HPTN 103, respectively) as well as in vulnerable populations in France and the United Kingdom (PURPOSE 5). The opening of PURPOSE 3 & 4 was announced by the NIH on June 4, 2024.
- Promising results reported for once-yearly administration at CROI 2025 and in the *Lancet*.
- ViiV Healthcare is sponsoring a phase I tolerability and acceptability study with HIV-negative participants that involves switching from CAB LA to lenacapavir or vice versa.

Tenofovir alafenamide + emtricitabine (Descovy), tenofovir disoproxil fumarate + emtricitabine (Truvada) NCT04937881	NtRTI/NRTI	University of California, Los Angeles	Oral PrEP	Phase III

- A completed study in pregnant and postpartum women in South Africa to establish benchmarks of tenofovir (TFV) diphosphate concentrations as measures of adherence in this population. Either Descovy or Truvada were administered once daily under direct observation for eight weeks during pregnancy and for eight weeks in the postpartum period. Results were published in the journal *Antiviral Research* in September 2024, demonstrating that potentially protective levels of active tenofovir in peripheral blood mononuclear cells were maintained in pregnancy and postpartum. The authors conclude: “Efficacy and safety studies are warranted to evaluate TAF-FTC [Descovy] for PrEP in pregnant and postpartum women.”

Agent	Class/Type	Manufacturer/Sponsor	Delivery	Status
MK-8527 NCT06826989 (PK study) NCT06580587 (lactating females) NCT06893081 (interaction study with carbamazepine) NCT06816043 (interaction study with Truvada)	NRTTI	Merck	Oral PrEP	Phase IIa Phase Ib Phase I

- An alternate NRTTI PrEP candidate being developed by Merck after the discontinuation of islatravir. Reported to be a highly potent inhibitor of HIV replication and suitable for oral monthly dosing.
- A phase IIa trial has been completed with people at low risk for HIV acquisition, and the company intends to pursue efficacy trials if results are supportive.
- Phase I PK study is completed.
- MK-8527 is being tested in a phase I trial in lactating female participants to assess PK in breast milk, plasma, and blood.
- Phase I evaluations of potential drug interactions are underway or completed including:
  - In combination with carbamazepine to assess whether drugs that induce the liver enzyme CYP3A4 alter the PK of MK-8527.
  - With the approved PrEP intervention Truvada (TDF/FTC).
  - A completed study with the oral contraceptive levonorgestrel and Ethinyl estradiol, results were presented at AIDS 2024 indicating MK-8527 can be safely co-administered.

LP-98 NCT05933824	Fusion inhibitor	Shanxi Kangbao Biological Product Co., Ltd.	SC, IV	Phase I

- Injectable HIV fusion inhibitor candidate reported to have prevention efficacy in the SIV/macaque model.
- A phase I trial in China has been completed assessing safety, tolerability, and PK of LP-98 administered by either subcutaneous injection or intravenous infusion in people without HIV. The study also monitored for the induction of antibodies against the inhibitor (anti-drug antibodies [ADA]). Results are pending.

Aspirin NCT03629327	Nonsteroidal anti-inflammatory	University of Manitoba	Oral PrEP	Not applicable

- An ongoing trial is recruiting 300 women in Nairobi to assess the potential for aspirin to induce immune quiescence in the female genital tract. The goal is to develop a method of HIV prevention that works by reducing the availability of target cells for the virus at the site of exposure.
- Results from a pilot study (NCT02079077), published in *Frontiers in Immunology* in November 2021, indicate that aspirin levels were detectable in the genital tract and were associated with significant declines in the proportion of activated, potentially HIV-susceptible CD4+ T cells.

Table 2: Topical/Local PrEP and Multipurpose Technologies

Agent	Class/Type	Manufacturer/Sponsor	Delivery	Status
Microbicide Rings, Gels, Enemas, Films, and Other Insertables				
Dapivirine vaginal ring	NNRTI	Population Council (vaginal ring)	Monthly vaginal ring	Phase I (three-month ring)

- Licensed by regulatory authorities in Botswana, Eswatini, Kenya, Lesotho, Rwanda, South Africa, Uganda, and Zimbabwe.
- The Population Council acquired the rights to develop the dapivirine (DPV) vaginal ring from the International Partnership for Microbicides in October 2022.
- A trial in South Africa testing a three-month version of the ring containing a DPV dose of 100 mg reported results at the R4P conference, demonstrating superior PK to the monthly ring. The Population Council issued an accompanying statement expressing hope that these results can lead to a cheaper and more convenient ring option.
- Results from a completed phase IIIb trial in breastfeeding mother-infant pairs (MTN-043) published in the Lancet HIV in February 2025, demonstrating safety and very limited drug exposure among infants which, the authors state, "support the recommendation for DVRs [dapivirine vaginal rings] as an additional HIV prevention choice during breastfeeding."
- Preliminary results from a demonstration project in Zimbabwe, as reported by AIDSMap, suggest the HIV incidence among users over the first six months was similar to that observed with oral PrEP in other studies.
- An analysis of the reduction in HIV acquisition risk per sex act in the phase III efficacy trial published in the *Journal of Infectious Diseases* in December 2023 found that "consistent ring use was associated with a 63% (95% CI, 33%–80%) per-sex-act HIV-1 risk reduction." While potentially encouraging, the wide confidence interval (CI) is an indicator of considerable uncertainty regarding the precise level of efficacy.
- Results from a completed study in pregnant women were published in the *Journal of AIDS* in January 2024. The study abstract concludes: "Adverse pregnancy outcomes and complications were uncommon when DVR and TDF/FTC were used in the third trimester of pregnancy, suggesting a favorable safety profile for both prevention products."
- Results from the REACH study reporting high acceptability among adolescent girls and young women were published in the *Lancet HIV* in October 2023.
- Acceptability data from the ASPIRE efficacy trial were published in the journal *AIDS and Behavior* in March 2021.
- Phase I MTN-036/IPM 047 assessed the potential of a three-month vaginal ring. Results, presented at CROI 2021, demonstrate that the extended-duration rings were well tolerated and achieved higher DPV levels compared with monthly rings, supporting further evaluation. Acceptability data were published in *PLoS One* on February 22, 2022.

TAF/EVG NCT06274398	NRTI/INSTI	CONRAD	Rectal insert	Phase I

- A phase I study investigating multiple doses is recruiting in the US at Emory University in Atlanta, Georgia, sponsored by CONRAD.
- Results from a phase I trial of the rectal insert (MTN-039) evaluating safety, acceptability, and concentrations of drug in the rectal tissue were presented at CROI 2023 (see abstract and related press release), indicating safety and the potential to suppress HIV infection of rectal tissue for up to three days.

TAF/EVG NCT06087913	NRTI/INSTI	CONRAD	Vaginal insert	Phase I

- This trial at sites in the US, Kenya, and South Africa was completed, but terminated prior to analysis due to the destruction of USAID by the current US administration.
- Results from a previous phase I study of the vaginal insert were published in April 2023, reporting that the intervention was found safe and acceptable and achieved drug concentrations that supported further development.

Agent	Class/Type	Manufacturer/Sponsor	Delivery	Status
Tenofovir NCT06560684 (HPTN 106)	NtRTI	Johns Hopkins University/HPTN	Enema	Phase II

- The HPTN 106 phase II study began recruiting in October 2024. Participants will be randomized to one of two eight-week on-demand product sequences: TFV douche followed by oral F/TDF, or oral F/TDF followed by TFV douche. An educational webinar sponsored by AVAC's Choice Agenda was held in August 2024, and a recording is available online.
- Results of DREAM-01 were published in the *Journal of Infectious Diseases* in November 2023. The trial was a phase I, open-label, dose-escalation, and variable osmolarity study to compare the safety, PK, pharmacodynamics (PD), and acceptability of three formulations of a TFV enema. All three produced tissue concentrations above target levels and were well tolerated with no grade 2 or greater adverse events reported. Favorable acceptability results were reported in the journal *Sexually Transmitted Infections* in September 2024.
- Results from another phase I trial, DREAM-03, were presented as a poster at CROI 2022. The investigators reported that a TFV douche prior to receptive anal sex produced good drug coverage of the colorectal tract. Based on their results, the authors recommended administration prior to receptive anal sex in future studies.
- DREAM-02, a third phase I study assessing the TFV enema used in sequence with tap water enemas, has been completed with results pending.
- A phase I study of the safety, PK, PD, and acceptability of a one-dose TFV douche in adolescents aged 15–24 (ATN DREAM) has been completed. Results were published in the journal *AIDS and Behavior* in May 2025, reporting that the approach was highly acceptability among young MSM.

Multipurpose Technologies

Tenofovir + levonorgestrel NCT03762382	NtRTI/HC	CONRAD	Vaginal ring	Phase IIa

- The CDC and CONRAD collaborated on a phase IIa, 90-day safety, adherence, and acceptability study of intravaginal rings (IVRs) releasing TFV with and without levonorgestrel (LNG) among women in western Kenya (NCT03762382). Results were published in *Frontiers in Reproductive Health* in June 2023, indicating that the IVRs were safe and delivered drug levels likely to be associated with prevention of HIV and pregnancy. A subsequent publication in the journal *Scientific Reports* in July 2022 reported that the IVRs were safe and didn't adversely affect genital microbiota. According to a substudy published in September 2022, acceptability was good, although women expressed concerns about potentially negative community perceptions.
- CONRAD has completed two phase I, safety, PK, and PD studies of the TFV/LNG IVR. Favorable results from a one-month evaluation were published in *PLoS One* in June 2018, and similarly positive findings from a 90-day study were presented at R4P 2021. Results from the 90-day assessment were published in *Frontiers in Cellular and Infection Microbiology* in March 2022.

DPP capsule (dual prevention pill containing Truvada PrEP and combined oral contraceptive) NCT04778527	NtRTI/HC	Population Council	Oral	Phase II

- Being developed by a coalition of partners for prevention of pregnancy and HIV infection in high-need countries.
- Two phase II crossover trials comparing acceptability of DPP capsule versus individual PrEP and contraceptive pills among adolescent girls and young women are being conducted, as described in a paper in *BMJ Open* published in March 2024. One study in Zimbabwe enrolled 30 participants and has been completed (results have been submitted to clinicaltrials.gov but are not yet publicly available). The second trial is ongoing and closed to recruitment, with 96 participants in South Africa, and results are pending.

Agent	Class/Type	Manufacturer/Sponsor	Delivery	Status
Dapivirine + levonorgestrel NCT05041699	NNRTI/HC	Population Council	Three-month vaginal ring	Phase Ia

- A phase I study evaluating PK and safety of a vaginal ring containing DPV and LNG (MTN-030/IPM 041) was completed in 2017, with results presented at the 2018 R4P conference (abstract OA12.02LB). A 14-day period of evaluation showed the ring was well tolerated and achieved the desired drug levels.
- A phase I study of 90-day administration either continuously or on a cyclic schedule (28 days in/2 days out) was completed in October 2019 (MTN-044/IPM 053/CCN019, NCT03467347). Results demonstrating achievement of drug levels predicted to be efficacious in preventing HIV and pregnancy were presented at R4P 2021. The products were safe, with only one grade 4 adverse event reported (anemia related to cyclic use).
- A paper describing the results of both the MTN-030/IPM 041 and MTN-044/IPM 053/CCN019 studies was published in the open access journal *PLoS One* on June 5, 2024.
- Acceptability data from the MTN-030/IPM 041 and MTN-044/IPM 053/CCN019 studies was published in *PLoS One* in January 2025, showing higher acceptability of the monthly compared to the 90-day ring, with unanticipated vaginal bleeding emerging as a concern.
- A 90-day phase Ib study of the safety and PK of two different vaginal ring formulations (NCT05041699) at sites in Oregon and Pennsylvania has been completed, results are pending.

ABBREVIATIONS

CAB LA: long-acting cabotegravir
CDC: Centers for Disease Control and Prevention
CONRAD: Contraception Research and Development
CROI: Conference on Retroviruses and Opportunistic Infections
DAIDS: Division of AIDS
DPP: dual prevention pill
DPV: dapivirine
DVR: dapivirine vaginal ring
EVG: elvitegravir
FDA: U.S. Food and Drug Administration
FTC: emtricitabine
HC: hormonal contraception
HPTN: HIV Prevention Trials Network
HPV: human papillomavirus
IM: intramuscular injection
INSTI: integrase strand transfer inhibitor
IPM: International Partnership for Microbicides
IV: intravenous administration
IVR: intravaginal ring
LNG: levonorgestrel
MPT: multipurpose prevention technology
MSM: men who have sex with men
MTN: Microbicide Trials Network
NNRTI: non-nucleoside analogue reverse transcriptase inhibitor
NRTI: nucleoside analogue reverse transcriptase inhibitor
NRTTI: nucleoside reverse transcriptase translocation inhibitor
NtRTI: nucleotide analogue reverse transcriptase inhibitor
PD: pharmacodynamics
PK: pharmacokinetics
PrEP: pre-exposure prophylaxis
R4P: HIV Research for Prevention Conference
SC: subcutaneous injection
STI: Sexually transmitted infection
TAF: tenofovir alafenamide
TDF: tenofovir disoproxil fumarate
TFV: tenofovir