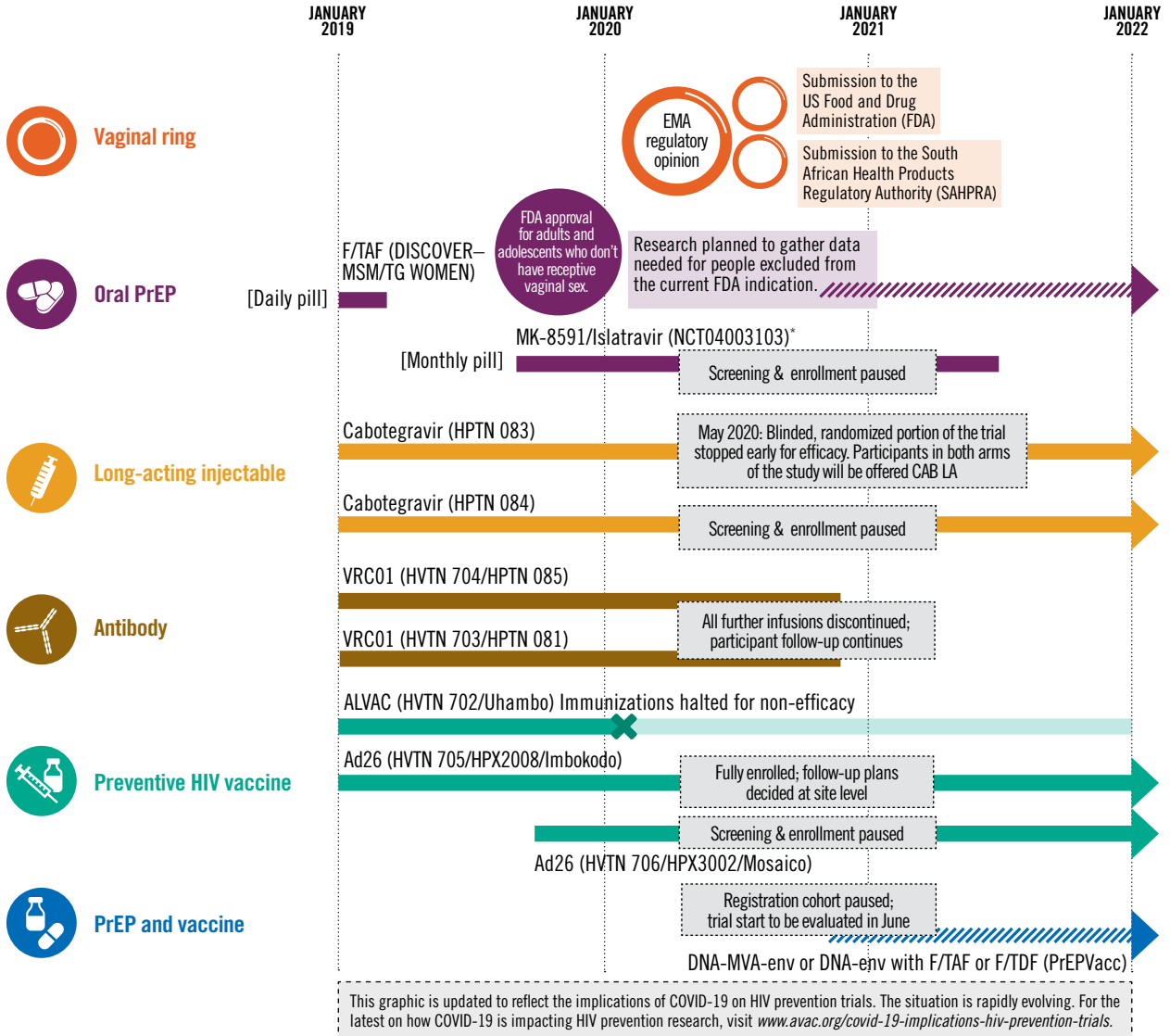
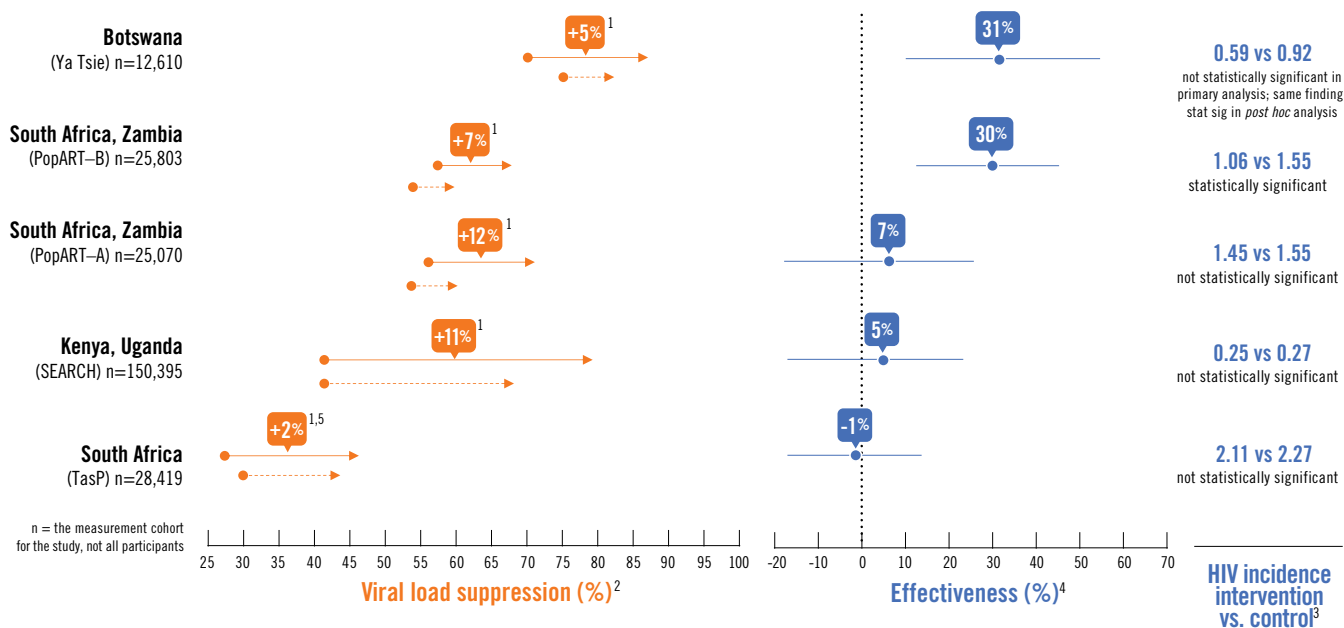


Biomedical HIV Prevention Trials: Results, milestones and more



Declines but Not a Decisive Effect of the Intervention: Key results from “universal test and treat” trials

UNAIDS' Fast-Track Goals for ending the epidemic focused on testing 90 percent of people living with HIV, linking 90 percent of those people to ART, and supporting 90 percent of those individuals to reach virologic suppression. The busy figure below summarizes recent research on how reaching these targets impacts incidence. Each orange arrow shows the level of virologic suppression among PLHIV in the community at the start and end of the trial, the pairs of arrows represent different trial arms. The figure in the box above is the absolute difference in suppression between the two arms. For PopART, which had three arms, there are two different comparisons. The longer arrows belong to the intervention arms, which had a greater increase in virologic suppression across the trials. The blue bars show the point estimate for, and confidence interval around, the relative incidence in the intervention arm compared to the control arm. The bottom line: arms with community-wide testing saw incidence drop. Rapid expansion of ART leading to virologic suppression is feasible. This is good news for communities and individuals.



¹ Difference in virologic suppression (<400 copies/mL) between the intervention and control groups at the end of the trial.

² The dot is the virologic suppression percentage at baseline, and the arrow is the virologic suppression percentage at the end of the trial. The figure in the orange box is the absolute difference in suppression between arms.

³ HIV incidence is per 100 person-years.

⁴ The dot and blue box is the point estimate of effectiveness in preventing HIV (relative HIV incidence in intervention versus control arm) and the lines on either side represent the 95% confidence interval.

⁵ Viral suppression at baseline was estimated from baseline ART coverage, assuming 90% of ART patients were virally suppressed.

Adapted from Abdool Karim, S. 2019. *HIV-1 Epidemic Control—Insights from Test-and-Treat Trials*. *N Engl J Med*. 381:286-288. DOI: 10.1056/NEJMe1907279.

What Gets Measured Matters: PrEP monitoring varies widely by country, funder and normative agency

There is enormous variability in country and funder/normative approaches to tracking PrEP program rollout. Assessments of progress require common, comprehensive measures against and estimates of the parameters below.

National Oral PrEP Program Indicators

Kenya



Malawi





































South Africa



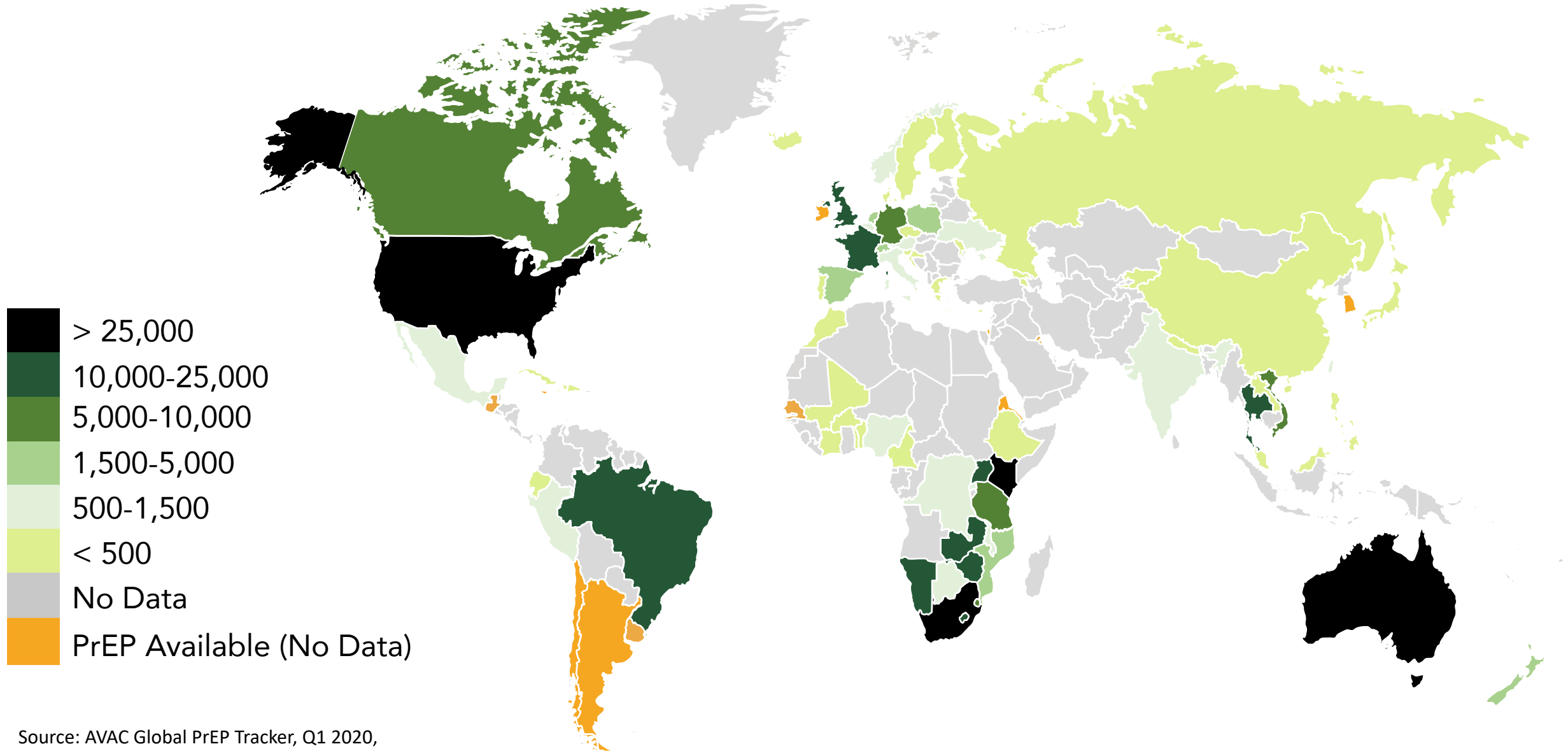
Funder/Normative Guidance Recommendations



	New initiations						
	Current clients taking PrEP						
	Return for 1st follow-up visit						
	Average duration of use						
	Inferred estimate of infections averted						

Developed by the Clinton Health Access Initiative under the Prevention Market Manager partnership led by AVAC, 2019.

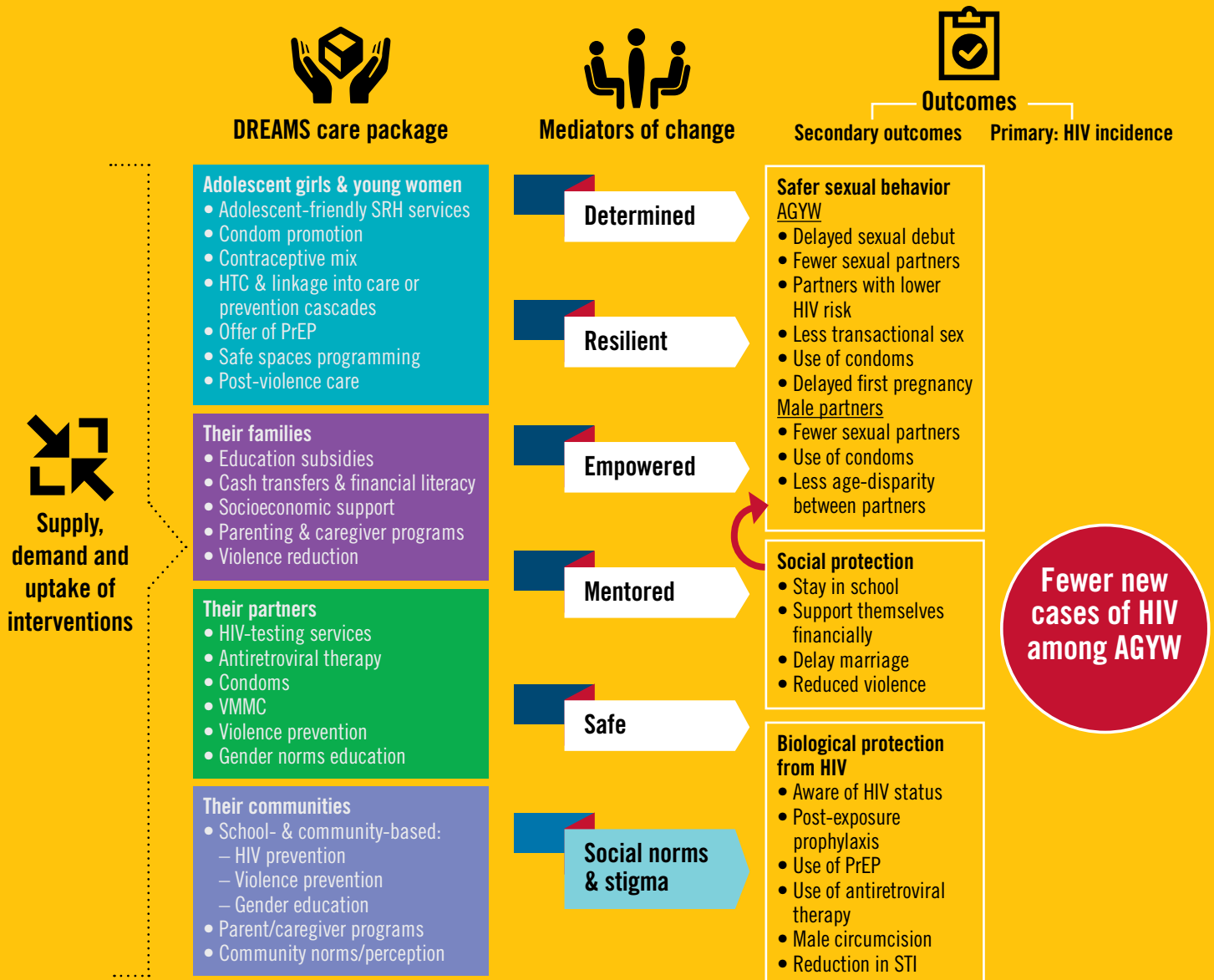
PrEP Initiations by Country, April 2020



Source: AVAC Global PrEP Tracker, Q1 2020,
<https://www.prepwatch.org/country-updates/>

Visualizing Multisectoral Prevention: The DREAMS program theory of change

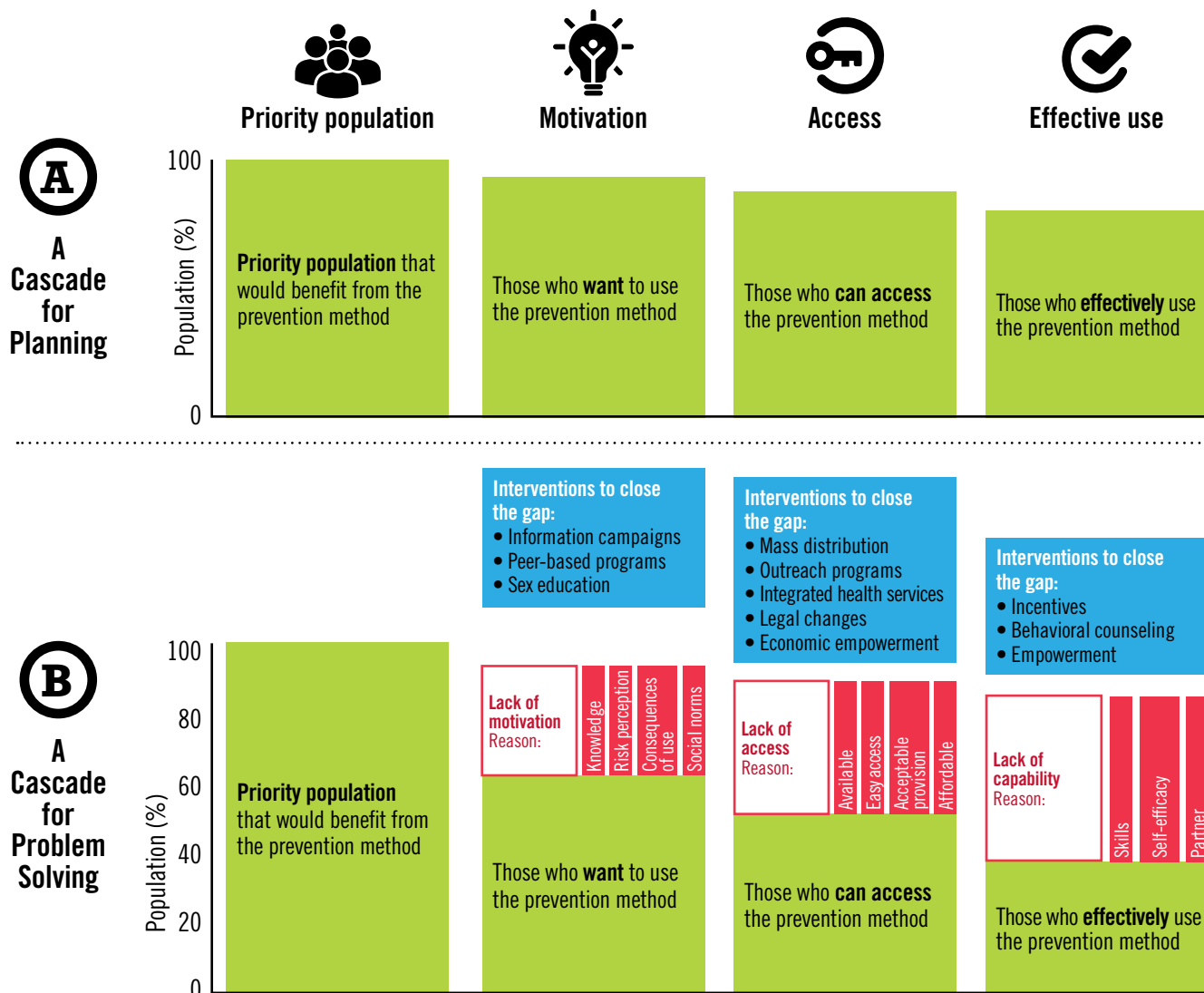
Below is PEPFAR's own visualization of how its AGYW programs can effect change. It's notable for the definition of a care package that touches on the individual and her community, and for the way it defines a range of outcomes. There isn't anything comparable for PEPFAR's Key Population Investment Fund, which is infusing resources into a range of countries. Some of that funding is going for ART; for primary prevention, a theory of change linked to incidence is a must. AVAC is working with allies in KPIF countries to make this demand.



Birdthistle I, Schaffnit S et al. 25 July 2018. *Evaluating the Impact of the DREAMS Partnership to Reduce HIV Incidence Among Adolescent Girls and Young Women in Four Settings: A Study Protocol. BMC Public Health.* 18(1):912. doi: 10.1186/s12889-018-5789-7.

A Generic and Unifying HIV Prevention Cascade Framework

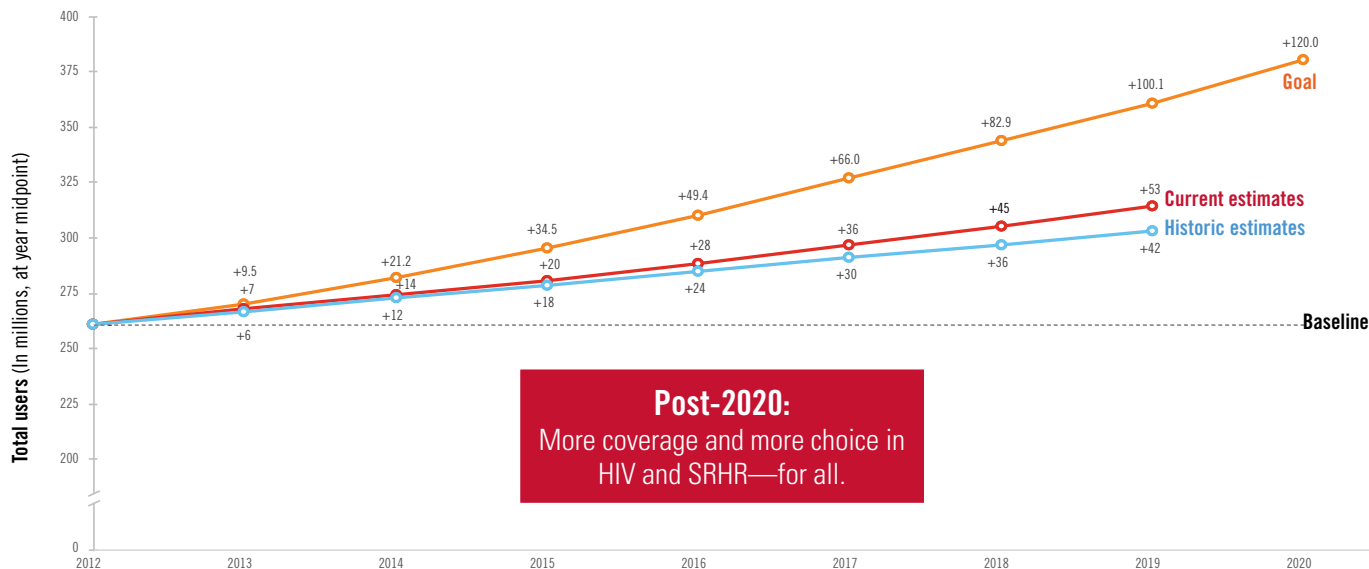
What gets measured matters if and only if that measurement is linked to impact. The most common approaches to evaluating primary prevention don't measure up. They measure commodities but not use. A count of the condoms or PrEP bottles handed to people does not tell you whether the condoms were used, the pills were taken—or even, often, whether the people receiving the commodities were at high risk of HIV. A simple, universal prevention cascade could help change that. The one below, which presumes that HIV testing has happened and is focused on people at risk of HIV, suggests four stages (see A) and then shows how solutions could be tailored to fix the cascade (see B).



Adapted from Moorehouse L, Schaefer R et al. July 2019. *Application of the HIV prevention cascade to identify, develop and evaluate interventions to improve use of prevention methods: examples from a study in east Zimbabwe. J Int AIDS Soc. (Suppl 4): e25309.*

Total and Additional Users of Modern Contraception, 2012-2019

In November 2019, FP2020 released "Women at the Center: 2018-2019" (<http://progress.familyplanning2020.org/>), its latest progress report from which this graphic is adapted. As its graphic below shows, coverage of modern contraception in the 69 low income countries that partner with FP2020 in tracking progress has increased since 2012, but not at the pace needed to meet the FP2020 goal. The group has also launched a post-2020 vision, and AVAC looks forward to working together towards an integration agenda.



#COVID-19

Know the difference between these 3 terms:

Coronavirus

This is a family of viruses that SARS-CoV-2 belongs to.

SARS-CoV-2

The formal, scientific name of the virus that's causing this pandemic. (It's short for "severe acute respiratory syndrome coronavirus 2").

COVID-19

The disease caused by the virus SARS-CoV-2. If you're sick, you have Covid-19. You were infected by SARS-CoV-2.



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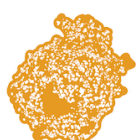
HIV Vaccine Approaches in COVID-19 Vaccine Development

Vaccine approaches originally developed for HIV vaccine design are at the forefront of COVID-19 vaccine development. There are over 100 vaccine candidates in development against COVID-19, many of the vaccines and approaches in human trials have roots in HIV research. Below are some of the approaches moving forward in human trials.



Antibodies

The AMP trials, with results due in October, are now testing infusions of an HIV-neutralizing antibody every two months as a prevention method. Antibody approaches like this, including convalescent plasma, and neutralizing antibody infusions and injections, are being developed for both prevention and treatment of COVID-19.



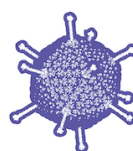
Chimp adenovirus vector

A vaccine developed at Oxford University from a virus that infects chimpanzees is being developed for therapeutic and preventive clinical trials against HIV and a number of other diseases. That chimpanzee virus platform has been adapted as a COVID-19 vaccine candidate and is now in clinical trials.



DNA

HIV vaccine approaches using a DNA platform are now being explored for COVID-19. Inovio has begun testing its DNA vaccine platform, originally developed for HIV vaccines, for use as a COVID-19 vaccine.



Human adenovirus vectors

Multiple adenovirus subtypes have been developed as HIV vaccine candidates, most notably, Janssen's Ad26 candidate, which is now in two large HIV vaccine efficacy trials. Janssen is now adapting its Ad26 as a COVID-19 vaccine. There are also several other adeno-based COVID-19 vaccines in development, such as the Ad5 adenovirus being tested by the Chinese military.



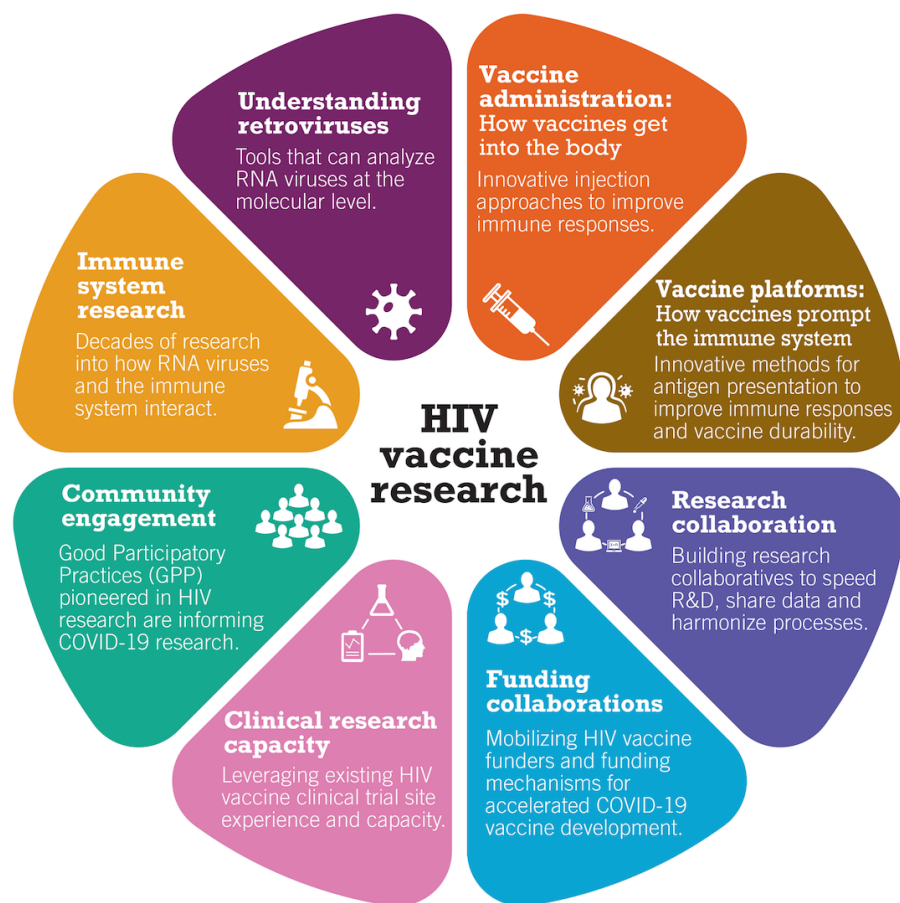
mRNA

Messenger RNA (mRNA) vaccines, potentially more potent than DNA platforms, have been developed as HIV vaccine candidates. Now, several mRNA vaccine candidates against COVID-19 are in clinical trials sponsored by Moderna, CureVac and Pfizer/BioNTech.



May, 18 2020
avac.org

Leveraging the HIV Vaccine Enterprise for COVID-19 Vaccine Research



May, 18 2020
[avac.org](https://www.avac.org)

Clinical Trial Phases

Number
of people

Purpose

Duration

Pre-
clinical
Phase



Preliminary testing of the investigational drug/intervention in a lab before any testing in humans is done.



several
years

Phase
1



20 - 80



Test safety
of the drug



Test for side
effects



Determine the
right dose



12 - 18
months

Phase
2



100 - 300



Test for the
drug's effects
in the short
term



Compare the new drug
against an existing
drug or placebo



Monitor
side
effects



2 years
or longer

Phase
3



1000 - 3000



Compare the new
drug against an
existing drug or
placebo



Test for side
effects



See if it's
better



3 - 5
years

If successful in phase 3:



Application
submitted at
the Food and
Drug Administration



Application
reviewed



Application
approved



Drug awarded
marketing
licence and
made available
to public

Phase
4



1000+



Monitor its
safety



Monitor it's
side effects



Monitor its
effectiveness



ongoing



Will be continuously studied while
it's being used in practice.



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What is a Placebo?



What is a Placebo?

A placebo is an inactive treatment used in a clinical trial. It is sometimes called a "sugar pill".

...but why are placebo's important in clinical trials?

To prove that medicine works, it is generally tested against a placebo. So during a clinical trial some patients are given a placebo and some get the real medicine.

How do scientists decide who gets a placebo and who does not?

Volunteers are randomly selected by chance in a process that is like tossing a coin to either a test group receiving the active drug/medicine or a control group receiving the placebo or standard of care.

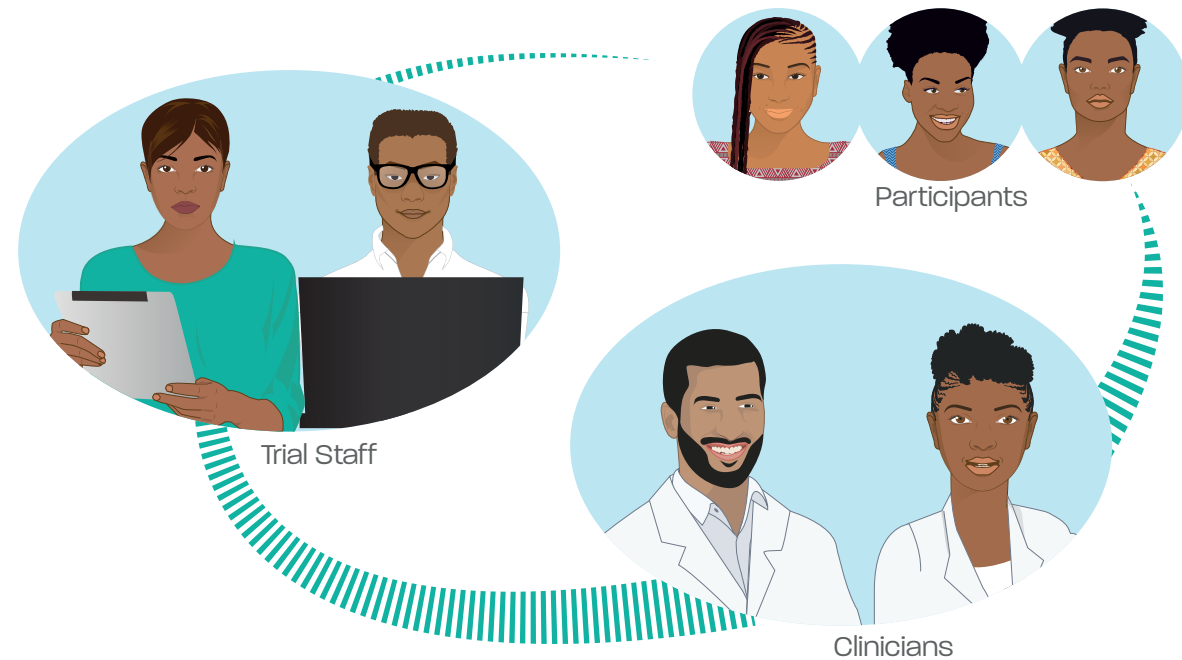
Is that why these trials are called "Randomised Controlled Trials"?

Yes, they are considered the "gold standard" for testing interventions/medicine in people and are often used to test the efficacy/effectiveness of various types of medicine.

TYPES OF BLINDING IN A RANDOMISED CONTROLLED TRIAL

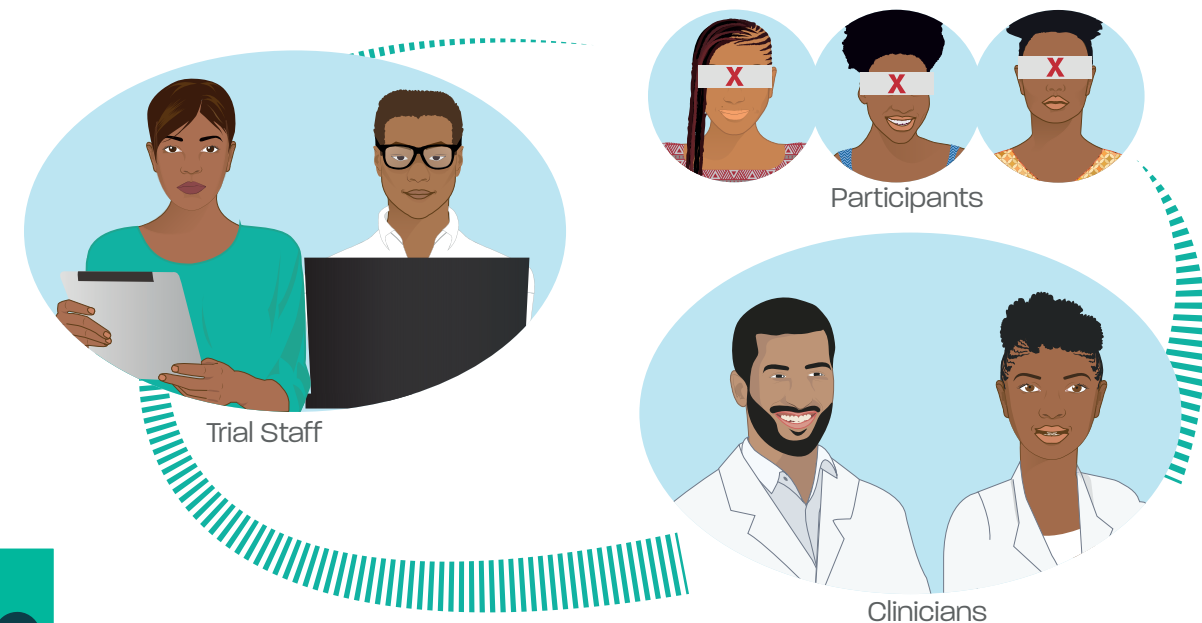
Unblinded or Open Label

All parties are aware of the treatment the participant receives.



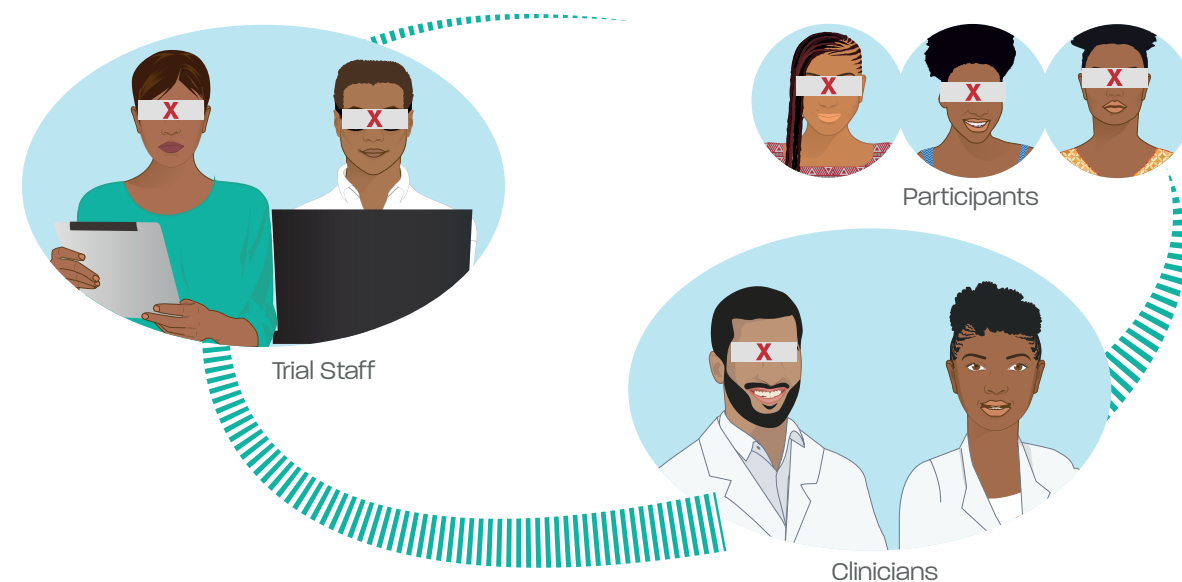
Single Blind

Only one party, usually the participants, does not know whether they are taking the placebo or the active drug/medicine.



Double Blind

Neither the participant nor the trial staff knows who is receiving the placebo or the active drug/medicine until the trial is finalised. In some studies only one group of trial staff will be partially blinded.



Triple Blind

The participants, clinicians & statisticians who conduct the analysis of the data are all unaware of who is receiving the placebo or active drug/medicine.

