PrEP-it User Guide

Version 1.0 Addendum

July 6, 2020

Introduction

Since its release in September 2019, several changes have been made to PrEP-it. This PrEP-it User Guide Addendum provides details on the new inputs and outputs associated with these changes, including:

- Minor adjustments to the Populations tab,
- Minor adjustments to the Capacity tab,
- Minor adjustments to the Drug Forecasting tab,
- A new module to assist with identifying catchment areas most suited for PrEP delivery to adolescent girls and young women (AGYW), found on the AGYW Geographic Prioritization tab, and
- Further explanation of the Impact calculations.

To begin, please download the most recent version of PrEP-it at:

https://www.prepwatch.org/resource/prep-it/

Populations

Original instructions for completing the Populations tab can be found on page 11 of the PrEP-it User Guide issued September 24, 2019. Most of the original instructions still apply; however, there are two minor changes.

First, the development of the new AGYW Geographic Prioritization module necessitated a designated location for AGYW in cell B6. Second, the AGYW category now includes ages 15-24.

Select priority populations	
Serodiscordant couples	SDCs
Adolescent girls/young women 15-24	AGYW 15-24
Men who have sex with men	MSM
Female sex workers	FSWs

If users wish to continue to distinguish between AGYW by ages 15-19 and ages 20-24, they can use the "Custom Group" option, as shown below.

Select priority populations	
-	-
-	-
Custom group	AGYW 15-19
Custom group	AGYW 20-24

Capacity

The purpose of the capacity module is to calculate the number of clients a program can serve each month. Instructions on how to complete the capacity module begin on page 19 of the *PrEP-it User Guide* where the steps to complete the module are as follows:

STEP 1 | Specify the number of staffing minutes needed for initiation/continuation visits

STEP 2 | Estimate the proportion of total visits that are initiations

STEP 3 | Enter data on total capacity and pills per client-day

STEP 4 | List each service delivery unit for PrEP

STEP 5 | Specify the staffing capacity for staff types A and B for each service delivery unit

STEP 6 | Specify capacity for initiation labs for each service delivery unit

STEP 7 | Specify monthly demand for each service delivery unit

STEP 8 | Review results

These basic steps remain the same. One addition is that during Step 2, where one estimates the proportion of total visits that are initiations, one should also indicate the months of PrEP drugs distributed at initiation and continuation visits. These additional inputs allow for a more specific designation of drug supply that must be available at a given site each month when determining drug capacity.

1	**Months of PrEP distributed at initiation visit**
3	**Months of PrEP distributed at continuation visit**

Drug Forecasting

The purpose of this module is to forecast the monthly antiretroviral drug (ARV) demand for supply chain planning and expected costs. Prior to completing the inputs in this module, one needs to complete the Populations, Continuation, and the Initiations and/or Targets modules. There are only three inputs on the drug forecasting module itself.

STEP 1 | Enter the number of pills distributed per initiation visit

STEP 2 | Enter the number of pills distributed per continuation visit

STEP 3 | Enter the cost per pill

Number of pills distributed per initiation visit	30
Number of pills distributed per continuation visit	90
Cost per pill	$ 0.75

The previous instructions in the September 2019 version of the PrEP-it User Guide do not account for the number of pills distributed at each visit but instead have users enter the number of pills per client per day (see page 44). The changes specified here were made to account for the cost of pills that are distributed to clients but are unused. For example, if a client was given 90 pills at a continuation visit in March but then discontinued PrEP use in April, their remaining pills would go unused. The cost for these unused pills were not previously accounted for but are now included in the drug cost estimates.

AGYW Geographic Prioritization

This *NEW* module was created and added to PrEP-it to enable users to identify sub-locations for prioritized delivery of PrEP for adolescent girls and young women (AGYW). The module can be used on its own or in conjunction with the other modules in PrEP-it to assist with AGYW target setting and impact calculations.

Background

The WHO has advised that oral PrEP should be given to populations at "substantial risk," defined as populations with at least 3% incidence. AGYW in generalized epidemics are known to be at elevated risk compared with the rest of the population, and control groups of HIV prevention clinical trials among women in these settings have mostly had incidence above 3%. However, surveys powered to the national or provincial level have failed to identify populations of AGYW with incidence above 3%. At the same time, behavioral risk scores developed to identify high risk AGYW have not been found to be generalizable outside of the settings in which they are developed. All of this suggests that there are highly localized pockets of high incidence among AGYW that are not being captured in surveys, and that PrEP provision is most relevant for sexually active AGYW in these hotspots. This simple tool uses readily available data to identify localities where PrEP should be prioritized for AGYW based on cost-effectiveness.

We analyzed HIV prevalence data from 22 countries with Demographic and Health Surveys with HIV data available, to create a statistical model that predicts HIV incidence from HIV prevalence. This analysis found that HIV prevalence among AGYW ages 15–24 can predict HIV incidence with an estimated relative error not exceeding 20%, and this prediction can be improved to a relative error lower than 9% if HIV prevalence among girls ages 10–14 is also included in the equation.

In a separate analysis, we used the Goals Age-Specific Model (Goals ASM) calibrated for nine sub-Saharan African countries to estimate the ratio of HIV infections directly averted among AGYW using PrEP to HIV infections indirectly averted in the rest of the population. The Goals-ASM analysis demonstrated that for every HIV infection directly averted among AGYW provided with PrEP for one year, there were an average of 0.4 infections indirectly averted (95% CI 0.1, 0.7) in the rest of the population over five years. This ratio varied little across the different countries, regardless of differences in HIV incidence, HIV prevalence, antiretroviral therapy (ART) coverage, male circumcision coverage, or other factors.

These two findings provide the underpinnings of the calculations used in this tool.

Instructions

STEP 1 | On the Getting Started tab, select to "Yes" one of the three options for AGYW geographic prioritization if AGYW is a priority population for PrEP delivery.

| ADOLESCENT GIRLS AND YOUNG WOMEN (AGYW) |
| --- |
| *Identify geographic areas for AGYW PrEP priorization (Click HERE for stand-alone tool)* |
| Identify geographic areas for AGYW PrEP prioritization using Costs Lite |
| Identify geographic areas for AGYW PrEP prioritization where PrEP costs vary by site, using Detailed Costs |

- The first row (in red) can be used if the ONLY function you want to use in PrEP-it is to identify areas for AGYW PrEP prioritization. In this case, the tab will function as a stand-alone tool but will not connect to other features of PrEP-it, such as target-setting and costing.

- The second row (most common) requires completing the Costs Lite tab to estimate cost per person year on PrEP for all geographic areas.

- The third row requires completing the Detailed Costs tab, which allows for costs per person year on PrEP to vary by geographic area.

STEP 2 | Complete the prior tabs as indicated on the Navigation bar.

- Unless you have selected the stand-alone tool option, the Navigation bar will first prompt you to complete the Populations tab, where you should select AGYW in cell B-8.

- In cells C6 through F6 of the Continuation tab, enter the continuation curve proportions for AGYW. In cell C15, assign that continuation curve to the AGYW population. Page 13 of the original PrEP-it user guide gives a detailed explanation of the continuation curve. These four numbers represent the proportion of AGYW initiating PrEP expected to be still taking PrEP at months 1, 3, 6, and 12 after initiation.

- Depending on your selection in Step 1, complete either the Costs Lite or Detailed Costs tab. Instructions for each of these tabs can be found on pages 24 and 27, respectively, of the PrEP-it user guide.
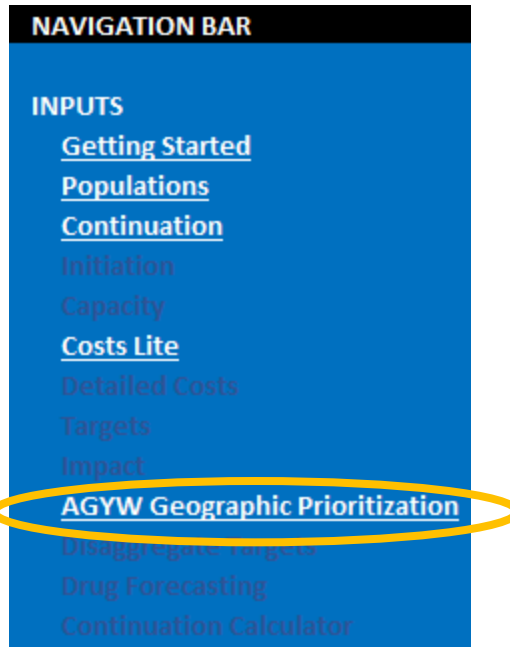
STEP 3 | Moving to the AGYW Geographic Prioritization tab, start by reviewing and updating, as needed, the parameters for PrEP efficacy, effective use, and annual discount rate. Defaults have been provided.

- *PrEP efficacy* = the percent reduction in HIV incidence when PrEP is used perfectly.
- *Effective use* = the average % of time that clients use PrEP correctly when they have it in hand.
- *Annual discount rate* = represents how much current costs and benefits are valued compared with future costs and benefits. This may be set nationally based on interest rates and/or annual inflation. Users may wish to report a range of results from using different values between 0% (future costs and benefits are worth the same as present costs and benefits) and 15% (heavily weighted towards present costs and benefits). 3% and 5% are commonly used.

PrEP efficacy	90%
Effective use	75%
Annual discount rate	3%

STEP 4 | Choose the threshold criterion. Two choices are given:

- *Total cost savings*, which will select catchment areas with any expected cost savings of ART provision compared with the total cost of providing PrEP.

- *PrEP cost per infection averted,* which will allow users to set a threshold for the cost per infection averted and select catchment areas beneath that threshold. Cost savings is a particularly stringent criterion based only on ART costs averted and does not consider other economic implications, such as productivity considerations. As such, PrEP may still be considered cost-effective even if it is not cost saving to the health system using the "total cost savings" threshold. The cost-effectiveness cutoff is determined by the user and can be benchmarked against other HIV interventions within a country.

Total cost savings	OR	PrEP cost per infection averted
		$ 10,000

STEP 5 | Select whether PrEP costs vary by geographic location.

- If the Costs Lite tab was used to estimate cost per person-year on PrEP, select "No" in cell C8 and review the estimated cost in cell C9, which can be edited if needed.

Vary PrEP cost by area using Detailed Costs?	No
Cost per person-year on PrEP	$ 180

- If the Detailed Costs tab was used to estimate cost based on different service delivery strategies, you can select either "Yes" or "No" in cell C8, depending on whether costs vary by locality.

Vary PrEP cost by area using Detailed Costs?	Yes

STEP 6 | In columns B and C, starting at row 17, list district and/or site names where AGYW could be offered PrEP.

STEP 7 | Add the HIV prevalence among AGYW 15-24 for each district/site catchment area in column D, starting at row 17. If survey data are unavailable, program HIV positivity rates for AGYW may be used.

STEP 8 | OPTIONAL - For each district/site catchment area, add the HIV prevalence among adolescent girls 10-14 in column E, starting at row 17. If these data are available, they improve the accuracy of the impact and cost-effectiveness estimates provided by the tool.

STEP 9 | OPTIONAL - If you are not using the target module and need to estimate total cost and impact of your program, enter the number of clients you plan to have initiating PrEP in the coming year for each catchment area in column G, starting at row 17. If you are using the Targets module and complete column H, data in column G will automatically be generated. This step is optional. If one does not have estimates, they can leave the default values of 1. Localities can still be prioritized for cost-effectiveness and cost savings without entering anything here.

STEP 10 | OPTIONAL - If you want total target and cost numbers for AGYW, add the population of AGYW 15-24 for each catchment area in column H, starting at row 17. If one does not have population data, they can leave the default values of 1. Localities can still be prioritized for cost-effectiveness and cost savings without entering anything here.

STEP 11 | Select whether continuation curves vary by district/site. Page 13 of the original PrEP-it user guide gives a detailed explanation of the continuation curve.

- If AGYW are expected to have the same continuation curve in each site, select **"No"** in cell I11. The continuation curve from the Continuation tab will automatically populate columns I through L.

No	Vary continuation curves by area?

- If data suggest that AGYW stay on PrEP longer or shorter based on geographic location, then select **"Yes"** and enter the four percentages that make up the continuation curve for each district/site catchment area in columns J-L, starting at row 17.

Continue after 1 month	Continue after 3 months	Continue after 6 months	Continue after 12 months
40%	25%	15%	5%
40%	25%	15%	5%
50%	30%	20%	10%
60%	45%	30%	15%
40%	25%	15%	5%

- The average AGYW continuation curve for areas selected below the set threshold are summarized in row 16. If you have entered different continuation rates for different districts/ sites, these numbers should be copied into the Continuation tab so that they can be connected to other calculations in other modules of the tool.

Copy into AGYW slot on Continuation tab			
Average continuation curve for areas below threshold			
1 month	3 months	6 months	12 months
40%	25%	15%	5%

STEP 12 | Enter cost data.

- The cost per person-year on PrEP (column R) will be automatically set to cell C9 for each site if you selected "No" in Step 5.

- If you selected "Yes" in Step 5, use the dropdown menu in column Q to indicate the service delivery strategy designated for each locality, as described in the Detailed Costs tab. In the example below, costs vary by facility-based vs. outreach delivery.

Select delivery strategy, from Detailed Costs	Cost per person-year on PrEP
Facility	$ 134
Facility	$ 134
Outreach	$ 169
Outreach	$ 169
Outreach	$ 169
Facility	$ 134
Outreach	$ 169
Facility	$ 134

- In column S, enter the cost per person-year on ART for each catchment area.

STEP 13 | Review selected district/sites. The tool identifies the catchment areas below the user-determined threshold by bolding and highlighting them in yellow, starting from row 17. If you selected "Total cost savings" in cell C7, then the highlighted catchment areas are those for which PrEP provision will yield ART cost savings compared with the cost of the PrEP program in that locality. Alternatively, if one selected "PrEP cost per infection averted" and set a dollar threshold, then the highlighted sites are those where the cost per infection averted is below that threshold.

District name	Catchment areas
Area 1	Area 1
Area 2	Area 2
Area 3	Area 3
Area 4	Area 4
Area 5	Area 5
Area 6	Area 6
Area 7	Area 7
Area 8	Area 8
Area 9	Area 9
Area 10	Area 10
Area 11	Area 11
Area 12	Area 12
Area 13	Area 13
Area 14	Area 14
Area 15	Area 15
Area 16	Area 16
Area 17	Area 17

STEP 14 | Review other results. Starting in cell C9, the results focus on AGYW in the highlighted catchment areas and report on the size of the population, HIV prevalence, PrEP costs and cost savings.

Number of AGYW in areas below threshold		376,948
Prevalence among AGYW in areas below threshold		15.2%
Total PrEP cost in areas below threshold	$	4,918,606
Total cost savings in areas below threshold	$	5,238,064
Total cost savings across all areas	$	4,956,765
Additional cost savings achieved by targeting	$	281,298	6%

Links to other PrEP-it modules

Once completed, the AGYW Geographic Prioritization results feed into the Targets and Impact tabs in PrEP-it.

- **TARGETS:** First, cell C10 links the population size to the number of AGYW in areas below the threshold. Cell D10 will be set to 100% since the population only includes those in PrEP-eligible geographic areas. Cell E10 links to the prevalence among AGYW in areas below the threshold. One can then indicate the percent indicated for PrEP in cell F10. This may be all AGYW in the geographic areas (100%) or could include an estimate on the percent of AGYW sexually active or otherwise fitting risk criteria for PrEP in those areas.

Priority populations	Population Size	% in PrEP-eligible geographic areas	HIV Prevalence	% Indicated for PrEP
SDCs	390,292	33%	0%	65%
AGYW 15-24	376,948	100%	15.2%	100.0%
MSM	225,762	60%	15%	70%

- **IMPACT:** Cell C14 links to the calculated impact factor associated with an AGYW in the selected areas. The impact factor is the number of HIV infections averted per person year on PrEP within a priority population.

Priority populations	Base default
SDCs	0.0900
AGYW 15-24	0.0143
MSM	0.0003

Impact

The purpose of this module is to designate the impact factors associated with each priority population, which are then used with other inputs in the tool to estimate the number of HIV infections averted based on targets and/or service delivery. Instructions on how to complete the impact module begin on page 39 of the *PrEP-it User Guide* where the steps to complete the module are as follows:

STEP 1 | Select reference country for PrEP impact

STEP 2 | Select baseline scenario

STEP 3 | Review and/or select base defaults

STEP 4 | Specify the adjustment factor

PrEP-it users have requested more information on how the base default impact factors, which are selected in Step 3, were derived.

For each country in the drop-down list in cell D4 of the Impact tab, the impact factors, which are the numbers of HIV infections averted over 5 years per person-year of PrEP provided in the first year for each indicated population, have been estimated using the Goals model for FSWs, MSM, PWID, general population adult women, general population adult men, medium risk adult women (defined in the Goals model as those with multiple partners who are not FSW), medium risk adult men (defined in the model as those with multiple partners who are not clients of sex workers), and high risk heterosexual men (defined in the model as male clients of sex workers). PrEP efficacy was assumed to be 90%, and adherence was assumed to be 100%. We assumed 50% coverage in 2020 for each of these populations, and output HIV infections averted over the years 2020 – 2024, inclusive. The impact factors for SDCs and TW were estimated as indicated in the Notes column, cells E27 and E33 in the Impact tab. The impact factors of pregnant women and breastfeeding women were set to be the same as those for general population women, but the user can modify these using the adjustment factor in cells D15:24 if there are data about how much higher incidence is in these populations compared with general population women. The impact factors listed in the table for AGYW were generated using a country-specific age-adjustment factor generated by the Incidence Patterns Model, but these values have been overridden by calculations performed within the new AGYW Geographic Prioritization module.

For each country, the Goals model was set up with two scenarios for ART and VMMC: one in which coverage of ART and VMMC were held constant at 2020 levels, and one in which ART was

scaled up to the 90-90-90 targets, while VMMC was scaled up to 80% coverage by 2020 and held constant at that level thereafter.

Priority populations	Impact factor calculation
Serodiscordant couples (SDCs)	Serodiscordant couples; 10% incidence * PrEP with 90% effectiveness
Female sex workers (FSWs)	
Men who have sex with men (MSM)	
Adolescent girls/young women (AGYW) ages 15-19	HIV Goals estimate with age-related impact factor adjustment based on most recent DHS analysis
Adolescent girls/young women (AGYW) ages 18-19	HIV Goals estimate with age-related impact factor adjustment based on most recent DHS analysis
Adolescent girls/young women (AGYW) ages 20-24	HIV Goals estimate with age-related impact factor adjustment based on most recent DHS analysis
Transgender women (TW)	MSM impact factor * 1.8, based on
People who inject drugs (PWID)	
Pregnant women (PW)	
Breastfeeding women (BFW)	
General population women	
Medium risk women	
General population men	
Medium risk men	
High risk heterosexual men	