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# Report on Resources and Funding Gaps in the Operational Plan of PrEP and Condom Programming 2022-2026

FINAL REPORT

# Report on Resources and Funding Gaps in the Operational Plan of PrEP and Condom Programming

# 2022-2026

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# Supply Chain and Commodity Security

## SUPPLY AND COMMODITY SECURITY

The supply and commodity security component includes Forecasting, Procurement, Quality Assurance, Warehousing and Storage, Distribution to supply chains, and Logistic Management Information system. Condom programs must ensure that the condom supplies and distribution systems are adequate to meet current and future user demand. Efforts need to include adequate condom procurement and supplies; community-based distribution to key populations; targeted distribution of free outlets for those with greatest need such as key populations, and deliberate efforts to engage the commercial sector.

**Forecasting and quantification (Supply planning)**: In Iran there is no Condom Program and MOH coordinates supply planning for condoms only for key populations in consultation with partners in line of the 5th NSP of the HIV/AIDS. I this project we calculated condom needs as followings:

- In order to calculate the number of condoms required to be divided into six key populations at risk of sexually transmitted diseases including HIV/AIDS, we need epidemiological data related to these populations, which are presented in the table below. Data for all groups except MSM and Transgender groups, for which local data are very limited, have been extracted from population studies, especially systematic review studies and meta-analysis related to Iran. In the case of the MSM and Transgender groups, demographic data from other similar countries have been used. However, the prevalence of these groups is much lower than other study groups and does not seem to have a significant effect on the final results of the study. The data in the table below is shown as the prevalence / percentage of each variable with a 95% confidence interval of each.

**Table 1.** The required statistics to estimation the condom use (data are presented in prevalence/percent values

| Sub-groups | Base value | Upper limit | Lower limit |
|---|---|---|---|
| **PLHIV** | <0.1 | <0.1 | 0.2 |
| **MSM Prevalence*** | 0.5[1] | 0.7 | 0.3 |
| **Frequency of sex a year** | 84[2] | 60 | 108 |
| **Frequency of sex among FSW a year** | 114[3] | 96 | 132 |
| **MSM drug users** | 20.8[4] | 23 | 18.6 |

[1] Mauck DE, et al. Population-based methods for estimating the number of men who have sex with men: a systematic review. Sexual health. 2019;16(6):527-38.
[2]Call V, et al. The incidence and frequency of marital sex in a national sample. Journal of Marriage and the Family. 1995:639-52.
[3] Shushtari ZJ, et al. HIV risk perception and sexual behaviors among female sex workers in Tehran, Iran. Medical journal of the Islamic Republic of Iran. 2019;33:101.
[4] Zamani S, et al. Potential for sexual transmission of HIV infection from male injecting-drug users who have sex with men in Tehran, Iran. Sexually transmitted diseases. 2010;37(11):715-8.

| | | | | |
|---|---|---|---|---|
| **Prevalence of FSWs** | | 1.43[5] | 0.96 | 1.84 |
| **FSWs drug users** | | 24.9[6] | 16.1 | 36.4 |
| **FSWs IDU** | | 20.45[7] | 14.32 | 28.33 |
| **Transgender prevalence** | MTF | 0.077 | 0.070 | 0.084 |
| | FTM | 0.029 | 0.025 | 0.034 |
| | Total | 0.053[8] | 0.048 | 0.059 |
| **Transgender drug users** | | 8.7[9] | 7.4 | 10 |
| **PWID prevalence** | | 0.43[10] | 0.38 | 0.48 |
| **Prisoners prevalence** | | 0.32[11] | 0.29 | 0.35 |
| **Prisoner drug users** | | 74[12] | 73.2 | 75.5 |
| **Prisoner with PWID** | | 16.6 | 15.5 | 17.8 |
| **MSM prisoner** | | 7.8[13] | 7.3 | 8.3 |
| **Iranian population Male (15-49 years)** | | 46,042,950[14] | - | - |
| **Condom use** | PLHIV | 25.0 | - | - |
| | MSM | 27.0 | - | - |
| | Sex workers | 33.6 | 24.7 | 43.9 |
| | Transgender people | 17.7 | - | - |
| | PWID | 83.3 | 78.5 | 88.1 |
| | Prisoners | 24.7 | 17.9 | 32.9 |

* It considered similar to countries like China, Ghana, Georgia, sub-Saharan African countries

Table 2. shows the population and number of condoms required annually for each group of PWID, PLHIV, FSW, male prisoners, MSM and transgender with an average 95% confidence interval based on prevalence. Each group is estimated and presented. In this estimate, the average number of sexual intercourses per person is 7 times a month (84 times a year) and for FSW 9.5 times a month (114 times a year)[15]. Also, given that these high-risk groups overlap in terms of population and the corresponding values are shown in Table 1. population estimates and the number of condoms required annually for each group, as well as by omission, overlap values are shown in the bottom row to avoid double or multiple calculations. In other words, these results show that the group of HIV/AIDS patients has an average population of 53,000 and needs more than 4.4 million condoms each year.

[5] Sharifi H, et al. Population size estimation of female sex workers in Iran: synthesis of methods and results. PloS one. 2017;12(8):e0182755.
[6] Shokoohi M, et al. Drug use patterns and associated factors among female sex workers in Iran. Addictive behaviors. 2019;90:40-7.
[7] Khajehkazemi R, et al. Risk and vulnerability of key populations to HIV infection in Iran; knowledge, attitude and practises of female sex workers, prison inmates and people who inject drugs. Sexual health. 2014;11(6):568-74.
[8] APA E. Diagnostic and statistical manual of mental disorders, Text Revision (DSM-IV-TR). Washington, DC. 2000.
[9] Moayedi-Nia S, et al. HIV Prevalence and Sexual Behaviors Among Transgender Women in Tehran, Iran. AIDS Behav. 2019;23(6):1590-3.
[10] Mumtaz GR, et al. HIV among people who inject drugs in the Middle East and North Africa: systematic review and data synthesis. PLoS medicine. 2014;11(6):e1001663.
[11] Walmsley R. World Prison Population List (London: Institute for Criminal Policy Research). 2018.
[12] Moradi G, et al. Patterns of drug use and related factors among prisoners in Iran: results from the national survey in 2015. The journal of primary prevention. 2020;41(1):29-38.
[13] Pourahmad M, et al. Seroprevalence of and risk factors associated with hepatitis B, hepatitis C, and human immunodeficiency virus among prisoners in Iran. Infectious Diseases in Clinical Practice. 2007;15(6):368-72.
[14] World Population Review (2021) Iranian population 2021
[15] Call V, Sprecher S, Schwartz P. The incidence and frequency of marital sex in a national sample. Journal of Marriage and the Family. 1995:639-52.

Of course, we must not forget the precondition that people use condoms in all their sexual relations. These statistics were obtained for the group of sex workers 600,415 people and about 50,434,000 condoms, respectively. If we do not consider the overlap values and coefficients of these groups, the total population of these groups is equal to 844341 people and the number of condoms required annually for these people is estimated at 63989225 condoms. However, if we consider group matching only once for one group and exclude for the other groups, the total population of the 6 groups at risk of sexually transmitted diseases and AIDS is 746,222 each year. They need about 56553164 million condoms. The upper and lower limits of the at-risk modified key population are 562,602 and 946,378, respectively, and the range for condoms required for this population is estimated at 47-79 million annually.

**Table 2.** The number of condom needed for Iranian key population subgroups of 15-49 old years

| Subgroups | Estimated population | | | Estimated number of required condom yearly | | |
|---|---|---|---|---|---|---|
| | **Base value** | **Lower limit** | **Upper limit** | **Base value** | **Lower limit** | **Upper limit** |
| PLHIV | 53,000 | 39,000 | 92,086 | 4,452,000 | 3,276,000 | 7,735,224 |
| MSM | 117,410 | 70,446 | 164,373 | 9,862,440 | 5,917,464 | 13,807,332 |
| FSW | 322,623 | 216,586 | 419,635 | 36,779,022 | 24,690,804 | 47,838,390 |
| Transgender | 24,403 | 22,101 | 27,165 | 2,049,852 | 1,856,484 | 2,281,860 |
| PWID | 197.985 | 174,963 | 221,006 | 16,631 | 14,696,892 | 18,564,504 |
| Prisoners | 128,920 | 115,107 | 142,733 | 10,829,280 | 9,668,988 | 11,989,572 |
| Total (in raw) | 844,341 | 638,203 | 1,066,998 | 63,989,225 | 53,609,052 | 89,627,832 |
| Total (Corrected) | 746,222 | 562,602 | 946,378 | 56,553,164 | 47,258,568 | 79,495,752 |

Due to the considerable uncertainty in the average number of sexual intercourses over a given period of time, we performed a one-way sensitivity analysis taking into account the number of sexual intercourses 60-108 times per year (5-9 times per month) and the results We show in Table 3.

The results show that the total number of condoms required annually for the 6 key populations is between 50.4-77.5 million raw and between 44.4 and 68.8 million corrected condoms.

**Table 3.** One-way sensitivity analysis on the number of condom needed for Iranian key populations of 15-49 old years based the average number of sex yearly

| **Subgroups** | **Estimated number of required condom yearly** | | |
|---|---|---|---|
| | **Base value (n=84)** | **Lower limit (n=60)** | **Upper limit (n=108)** |
| **PLHIV** | 4,452,000 | 3,180,000 | 5,724,000 |
| **MSM** | 9,862,440 | 7,044,600 | 12,680,280 |
| **FSW** | 36,779,022 | 30,971,808 | 42,586,236 |
| **Transgender** | 2,049,852 | 1,464,180 | 2,635,524 |

| | | | |
|---|---|---|---|
| **PWID** | 16,631 | 11,879 | 21,382 |
| **Prisoners** | 10,829,280 | 7,735,200 | 13,923,360 |
| **Total (in raw)** | 63,989,225 | 50,407,667 | 77,570,782 |
| **Total (Corrected)** | 56,553,164 | 44,436,437 | 68,801,719 |

Considering that people belonging to key populations use condoms only in a part of their sexual relations, the information of which is given in Table 1. Accordingly, the demand for condoms is much lower than the demand for them, the results of which are shown in Table 4. These findings show that the average annual demand for condoms is estimated at more than 31.6 million with a confidence interval of 22.6-36 million.

**Table 4.** The number of condom demanded by Iranian key populations subgroups of 15-49 old years

| Subgroups | Estimated population | | | Estimated number of required condom yearly | | |
|---|---|---|---|---|---|---|
| | **Base value** | **Lower limit** | **Upper limit** | **Base value** | **Lower limit** | **Upper limit** |
| **PLHIV** | 53,000 | 39,000 | 92,086 | 1,113,000 | 819,000 | 1,933,806 |
| **MSM** | 117,410 | 70,446 | 164,373 | 2,662,859 | 1,597,715 | 3,727,980 |
| **FSW** | 322,623 | 216,586 | 419,635 | 12,357,751 | 8,296,110 | 16,073,699 |
| **Transgender** | 24,403 | 22,101 | 27,165 | 362,824 | 328,598 | 403,889 |
| **PWID** | 197,985 | 174,963 | 221,006 | 16,630,740 | 12,242,511 | 15,464,232 |
| **Prisoners** | 128,920 | 115,107 | 142,733 | 2,674,832 | 2,388,240 | 2,961,424 |
| **Total (in raw)** | 844,341 | 638,203 | 1,066,998 | 35,802,006 | 25,672,174 | 40,565,030 |
| **Total (Corrected)** | 746,222 | 562,602 | 946,378 | 31,641,534 | 22,631,069 | 35,979,310 |

The demand for condoms is significantly affected by the average number of sexual intercourses over a period of time. Considering the average number of sexual intercourses 60-108 times per year (5-9 times per month), the demand for condoms among the study groups is presented in Table 5. These findings show that the demand for condoms in these groups is between 24-37 million per year for the key populations in the age group of 15-49 years.

**Table 5.** One-way sensitivity analysis on the number of condom demanded for Iranian key populations of 15-49 old years based the average number of sexual intercourse yearly

| Subgroups | Estimated number of required condom yearly | | |
|---|---|---|---|
| | **Base value (n=84)** | **Lower limit (n=60)** | **Upper limit (n=108)** |
| **PLHIV** | 1,113,000 | 795,000 | 1,431,000 |
| **MSM** | 2,662,859 | 1,902,042 | 3,423,676 |
| **FSW** | 12,357,751 | 10,406,527 | 11,707,343 |
| **Transgender** | 362,824 | 259,160 | 570,152 |
| **PWID** | 16,630,740 | 11,879,100 | 21,382,380 |
| **Prisoners** | 2,674,832 | 1,910,594 | 3,439,070 |

| | | | |
|---|---|---|---|
| **Total (in raw)** | 35,802,006 | 27,152,423 | 41,953,621 |
| **Total (Corrected)** | 31,641,534 | 23,997,100 | 37,078,283 |

**Condom Procurement:** In Iran, there is enough stock of condoms in the pipeline to cover public sector condom needs with potential for increased quantities in case of need for key populations. Most free condoms are provided by the MOHME and to some extent by UN agencies. For example, in the last six months, more than 19 million condoms have been distributed nationwide by the MOHME, of which about 4 million were provided by UNAIDS, Global Fund, UNDP, UNFPA and 500,000 by the UNHCR.
Regarding stock-outs, supply problem, and procurement problem, our findings show that in most free condom centers, there are quantitative and qualitative problems. For example, there is not enough stock, there is not a variety of products that applicants have the right to choose. In the case of women's centers where the service is outsourced, these restrictions do not exist.

## Annual budget required to supply condoms and PrEP drugs

The annual budget for the total number of condoms required, as well as the annual cost of the number of condoms requested by six key populations at high risk of contracting and transmitting HIV/AIDS, is presented in Table 6. These estimates are based on the average annual number of sexual intercourse equal to 84 (95% confidence interval: 108-60) for all studied groups except female sex workers who have an average of 114 cases (95% confidence interval: 96 -132). Also, the cost of each package containing 12 simple and classic condoms is equal to 150,000 IRR based on free market data.

The highest and lowest annual budgets needed to supply the condoms required by the high-risk groups studied were related to FSW (about 460 billion IRR) and Transgender people (about 26 billion IRR), respectively. The total adjusted cost of these key populations is estimated at more than 890 billion IRR. Also, the highest and lowest annual costs requested were the same groups of FSW (more than 154 billion IRR) and Transgender people (more than 4500 million IRR) that the total annual cost requested by these six groups was equal to 498 billion IRR.

**Table 6.** The estimated annual budget of condom needed and demanded among the Iranian high-risk subgroups (Billion IRR).

| Subgroups | Estimated budget of condom needed (95% CI) | Estimated cost of condom demanded (95% CI) |
|---|---|---|
| **PLHIV** | 55.65 (39.75-71.55) | 13.91 (9.94-17.89) |
| **MSM** | 123.28 (88.06-158.50) | 33.29 (23.78-42.80) |
| **Sex workers** | 459.74 (387.15-532.33) | 154.47 (130.08-178.86) |
| **Transgender** | 25.62 | 4.54 |

| | | |
|---|---|---|
| | (18.30-32.94) | (3.24-5.83) |
| **PWID** | 207.88 (148.49-267.28) | 173.17 (123.69-222.64) |
| **Prisoners** | 135.37 (96.69-174.04) | 33.44 (23.88-42.99) |
| **Total (in raw)** | 1007.54 (778.44-1236.65) | 563.72 (435.54-691.90) |
| **Total (Corrected)** | 890.47 (687.98-1092.95) | 498.22 (384.93-611.51) |

Table 7 presents the number of PrEP drug packages required to cover the total population of the four groups considered in the national medium-term strategy of condom planning and PrEP, as well as the number required to achieve the 2026 goals in this national program. In total, the number of adjustments required to cover the total population is estimated at 1.2 million packages and to achieve the program objectives a little over 245 thousand packages. The main need for this has been the partners of two groups of PLHIV partners and FSW.

**Table 7. PrEP needed and required for Iranian targeted subgroups of 15-49 old years based on NSP of HIV/AIDS control (Annually)**

| Subgroups | Population (95% CI) | Percent of consistently condom use | PrEP package needed (95% CI) | Coverage target | PrEP required (95% CI) |
|---|---|---|---|---|---|
| **PLHIV partners** | 53,000 (39,000-92,086) | 69.50% | 193,980 (142,740-337,035) | 90% | 174,582 (128,466-303,332) |
| **MSM** | 117,410 (70,446-164,373) | 62.20% | 532,572 (319,543-745,596) | 6% | 31,954 (19,173-44,736) |
| **FSW** | 322,623 (216,586-419,635) | 85.10% | 576,850 (387,256-750,307) | 15% | 86,528 (58,088-112,546) |
| **Transgender** | 24,403 (22,101-27,165) | 62.20% | 110,692 (100,250-123,220) | 6% | 6,642 (6015-7393) |
| **Total (in raw)** | 523,436 (348,133-703,259) | 77.97% | 1,383,755 (920,324-1,859,135) | 20% | 27,6751 (184,065-371,827) |
| **Total (Corrected)** | 464,264 (306,893-621,535) | 77.97% | 1,227,328 (811,302-1643,090) | 20% | 245,466 (162,260-328,618) |

+ Each high risk person must receive 12 Truvada (Emtricitabine/Tenofovir disoproxil fumarate) package as oral Pre-exposure prophylaxis (PrEP) annually.

According to the findings of Table 7, the annual budget required to provide oral pre-exposure prophylaxis for the entire population of each subgroup at risk, as well as the budget required to achieve the 2026 goals in Table 8 estimated and presented. In these calculations, the price of each 30/month Travuda package is equal to $ 4.2 and each USD is equal to 232,000 IRR according to the Nima system.

The average annual budget needed to cover the entire at-risk population ranged from $ 5.58 million (1,290 billion IRR) in the transgender group to $ 26.84 million (6,750 billion IRR) in sexually active women. In general, a figure of 61.85 million dollars (14,350 billion IRR) per year is needed to cover all four groups studied.

In order to achieve the 2026 policy goals, this required budget range from $ 330,000 (78 billion IRR) for transgender people to $ 8.8 million (2,040 billion IRR) in PLHIV partners each year. The total and adjusted annual budget required is estimated at about $ 12.37 million (2,870 billion IRR).

**Table 8.** PrEP budget needed and required for Iranian targeted subgroups of 15-49 old years based on NSP of HIV/AIDS control (Annually)

| Subgroups | PrEP budget needed for total population (95% CI) | | PrEP budget required for reach the targets (95% CI) | |
|---|---|---|---|---|
| | In Million USD | In Trillion IRR | In Million USD | In Trillion IRR |
| **PLHIV partners** | 9.78 (7.19-16.99) | 2.27 (1.67-3.94) | 8.80 (6.47-15.29) | 2.04 (1.50-3.55) |
| **MSM** | 26.84 (16.10-37.58) | 6.23 (3.74-8.72) | 1.61 (0.97-2.25) | 0.37 (0.22-0.52) |
| **FSW** | 29.07 (19.52-37.82) | 6.75 (4.53-8.77) | 4.36 (2.93-5.67) | 1.01 (0.68-1.32) |
| **Transgender** | 5.58 (5.05-6.21) | 1.29 (1.17-1-44) | 0.33 (0.30-0.37) | 0.78 (0.70-0.86) |
| **Total (in raw)** | 69.74 (46.38-93.70) | 16.18 (10.76-21.74) | 13.95 (9.28-18.74) | 3.24 (2.15-4.35) |
| **Total (Corrected)** | 61.85 (40.89-82.81) | 14.35 (9.49-19.21) | 12.37 (8.18-16.56) | 2.87 (1.90-3.84) |