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THE CONTINUUM OF HIV CARE IN NORTH MACEDONIA FOR 2021

Assessment Report with a Special Focus on Men Who Have Sex with Men

Skopje, 2022

STRONGER TOGETHER

Association for Support of People Living with HIV

Skopje

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The Continuum of HIV Care in North Macedonia for 2021: Assessment Report with a Special Focus on Men Who Have Sex with Men

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List of abbreviations

AIDS	acquired immunodeficiency syndrome
ART	antiretroviral therapy
CI	confidence intervals
CSO	civil society organisation
ECDC	European centre for disease control and prevention
HIV	human immunodeficiency virus
IBBS	integrated bio-behavioural survey
MSM	men who have sex with men
PLHIV	people living with HIV
PrEP	pre-exposure prophylaxis
RDS	respondent-driven sampling
SRH	sexual and reproductive health
STIs	sexually transmitted infections
UNAIDS	The Joint United Nations Programme on HIV/AIDS

Contents

Introduction

The HIV epidemic in North Macedonia – surveillance data

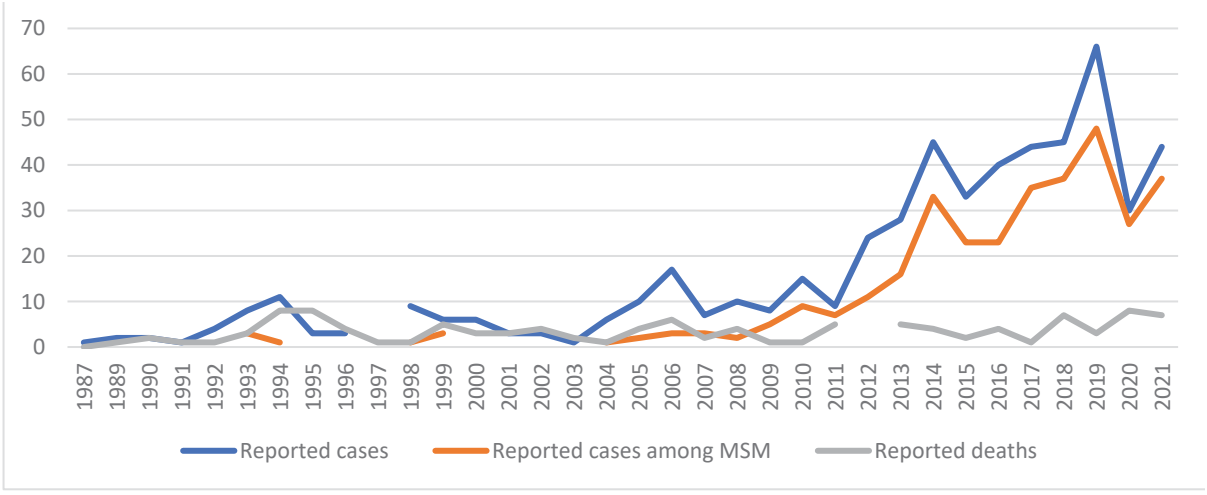
The Republic of North Macedonia had an estimated population of 1,836,713 in 2021 [1] and a low-level, concentrated HIV epidemic, with a total of 544 reported cases until 31 December 2021 and 122 HIV-related deaths [2].

There is an increasing trend of new HIV diagnoses with 41.8% of all HIV cases registered in the last five years. The average number of new diagnoses annually for the last 5 years (2017-2021) was 45.8, ranging from 30 in 2020 to 66 in 2019.

Several categories of evidence have suggested that the epidemic is under control among people who inject drugs and female sex workers, but prevalence among men who have sex with men (MSM) appeared to have been rising between 2010 and 2017 [3, 4].

Sex between men has been the most frequently reported mode of transmission (60.7% of all reported cases), with sex between men and women reported in 32.7% cases. Injecting drug use was reported in 2.2% of the cases, for 2.2% the mode of transmission was not reported, while other routes of transmission are sporadic. Out of 229 newly diagnosed cases during the last five years (2017-2021), 184 (80.3%) had sex between men as the reported mode of transmission[1] (Figure 1). On the other hand, 97.8% (n=224) of all cases diagnosed in the 5-year period of 2017-2021 (n=229) were male. [2]

Figure 1. Number of reported HIV cases, number of reported cases among MSM and number of AIDS-related deaths in North Macedonia, 1987-2021 (n=544)



[1] The percent of MSM among the newly diagnosed cases annually during the last 5 years ranges between 72.7% in 2019 and 90% in 2020, according to the official reports.

Data from bio-behavioural surveys among key populations

According to the results from the last published bio-behavioural survey among MSM, conducted with a respondent driven sampling method (RDS) [4], HIV prevalence in this KAP increased from estimated 0% in 2010 to estimated 1.9% in 2014 and 5.4% in 2017/2018, i.e. a concentrated epidemic was observed for the first time. On the other hand, studies conducted among people who inject drugs and female sex workers in 2010, 2014 and 2017/2018 did not detect any cases of HIV infection.

A population size estimation for MSM in the capital city of Skopje was performed in 2017/2018 along with the integrated bio-behavioral study. The estimation was based on the multiplier method [6] with the study population defined as 'all males who have lived in Skopje for at least 3 months, aged 18 to 55 years, and who have had anal sex with a male person within the last 12 months'. The population size in the capital city was estimated at 5,094 or 3.15% of the male population at that age (95% CI 4,286-6,557) and 5,556 (95%CI 4,675-7,152) at ages 18 to 59. Extrapolating this proportion to the whole country for the ages between 18 to 59 years resulted in an estimation of 11,054 (95% CI 9,301-14,229) [4] MSM in North Macedonia.

Policy context related to HIV and sexual health

The national response to HIV in the Republic of North Macedonia has been structured in the National HIV Strategy as the principle policy document adopted by the Government. Based on the National Strategy, the Government adopts an annual Program for the Protection of the Population from HIV Infection (National HIV Program), which includes both the treatment and the prevention components of the national response. The prevention component has been focused on the key affected populations – men who have sex with men, sex workers and people who inject drugs, as well as on people living with HIV – and it has been implemented predominantly by civil society organizations. CSO services have been funded from the national budget starting from 2018, i.e. as soon as North Macedonia phased out from the Global Fund support. [5]

The National HIV Program has been the main source of funding for HIV services in the period 2018-2021. The annual funding level saw some reduction compared to the level of 2017, i.e. the last year of Global Fund support, and it did not increase until the end of 2021. Additional donor funding for HIV service delivery in this period has been very limited and sporadic.

Prevention and testing services for men who have sex with men

Prevention services for men who have sex with men were first introduced in the country in 2005. Most of the outreach work related to the basic prevention package (i.e. condoms, lubricants and information materials), as well as peer education and support has been predominantly delivered by only one community-based LGBT organization (EGAL – Equality for Gays and Lesbians) active in Skopje with some activity in three other towns. HIV testing for MSM has provided through a single national testing program for all KAPs, implemented by CSO HERA – Health Education and Research Association in partnership with EGAL, as well as a community-based organization of people living with HIV, Stronger Together, from Skopje. Among public health institutions the HIV Counselling and Testing Centre at the University Clinic for Infectious Diseases is also popular among MSM as a testing site.

In 2021 EGAL reached 3,932 unique MSM clients with the basic prevention package, while EGAL, HERA and Stronger Together jointly reached 818 [7, 8] men who have sex with men with HIV testing services. There is a noticeable decrease in number of MSM tested in the period 2019 – 2021 compared to previous years.

Table 1. Number of people tested annually per key affected population in CSOs and community-based organizations, 2018-2021

	2018	2019	2020	2021
MSM	1614	1097	1010	818
SWs	664	610	539	446
PWID	914	761	574	601

The National HIV Program also partially funds the operation of two youth-friendly centres offering free of charge sexual and reproductive health services to young people, as well as to members of the KAPs. These SRH centres are providing: STI screening (for syphilis, HCV, gonorrhoea and urinary bacterial infections), support from a social worker, counselling and education, counselling by a psychologist and services for prevention of drug use. However, uptake seems to be relatively limited, with 152 MSM having received services for STI screening during 2021 [8].

Introduction of PrEP

In Februrary 2021 PrEP was introduced in the country for the first time – in the form of an implementation study conducted in collaboration between the University Clinic for Infectious Diseases and Febrile Conditions and the Association for Support of People Living with HIV. The pilot programme targeted primarily men who have sex with men, while being open to individuals from other key populations or being at risk of HIV in any other way. A total of 89 participants were enrolled, out of whom 64 were actively taking PrEP at the end of the year. PrEP was offered as part of a wider sexual health package, which included screening for syphilis, hepatitis B and C and partially for gonorrhoea and chlamydia. Only one HIV-positive case was detected during the baseline screening of participants and none during the follow-up. On the other hand, 10 syphilis cases were detected and confirmed at baseline, while 4 during the follow-up period. In addition, two asymptomatic cases of chlamydia were registered, although only a portion of participants received PCR screening for this pathogen. [13]

Treatment, care and support for people living with HIV

Treatment and care for people living with HIV in North Macedonia are centralized and provided only at the University Clinic for Infectious Diseases and Febrile Conditions. Since 2015 all people diagnosed with HIV infection are offered antiretroviral treatment upon diagnosis. The Clinic features a small Department on HIV, including a day centre (since 2005) offering medical appointments, support services from a social worker and a psychologist and dispensing antiretroviral treatment. The HIV Day Centre also offers linkage with community-based support services, provided by the community-based organization of people living with HIV – Stronger Together, Association for Support of People Living with HIV.

Methods

Objective

The objective of this study is to assess the overall progress in reaching the 95-95-95 targets, which envisions 95% of PLHIV are diagnosed, 95% of those diagnosed are on ART and 95% of those on ART have achieved viral suppression.

United Nations Member states adopted the 95-95-95 targets – to be achieved by 2025 – in June 2021 as part of the new Political Declaration on HIV and AIDS. These targets are continuation of the 90-90-90 targets set by the the United Nations General Assembly's Political Declaration in 2016. The aim to bring HIV testing and treatment to the vast majority of people living with HIV to reduce the amount of HIV in their bodies to low levels, which has individual and societal benefits.

The findings of the assessment are expected to inform the national strategic planning and the necessary programmatic interventions in the response to the HIV epidemic in the Republic of North Macedonia, especially with a view towards improving the prevention, linkage to care and treatment outcomes for MSM as the key population that is predominantly affected by HIV in the country. Focusing on men who have sex with men is important for reaching the set of the new global HIV targets for 2025, the aim of which is to create a new pathway within the Sustainable Development Goals (SDGs) to end AIDS as a public health threat by 2030.

Key indicators

For the evaluation of the national continuum of HIV care, we focused on four priority stages as shown in Table 1. These stages are recommended by the European Centre for Disease Control and Prevention for monitoring of the progress towards achieving the global targets. The analysis was conducted for all PLHIV and separately for MSM.

Table 2. Stages of the continuum of care and 95-95-95 targets

Stages	Description of a stage	95-95-95 target
Stage 1 — Number of PLHIV	Estimated total number of PLHIV in the country by the end of a given year.	
Stage 2 — Diagnosed	Number diagnosed with HIV. Expressed as a number and proportion of total PLHIV.	95% of PLHIV are diagnosed (know their status)
Stage 3 — On ART	Number who are taking ART in a given year. Expressed as a number and proportion of those diagnosed AND as a proportion of all PLHIV.	95% of diagnosed are on ART
Stage 4 — Virally supressed	Number virally supressed with <200 copies/ml. Expressed as number and proportion of those on ART AND as a proportion of all PLHIV.	95% of on ART virally supressed

For determining each of the stages of the HIV continuum, the following definitions and methods were used, in line with those proposed by A. J. Gourlay et al. in the paper titled "Towards standardized definitions for monitoring the continuum of HIV care in Europe"
[9], which is recommended by ECDC and Indicators for monitoring the 2016 Political Declaration on Ending AIDS — Global AIDS Monitoring 2021 [10] published by UNAIDS:

Stage 1: Number of PLHIV

– Estimated number of PLHIV, diagnosed and undiagnosed, including those who in-migrated and excluding those who out-migrated or died by the end of 2021.

Stage 2: Diagnosed

– Number ever diagnosed with HIV by the end of 2021, including those who in-migrated and excluding those who were out-migrated died by the end of 2020.

Stage 3: On ART

– Number with at least one record of ART dispensed in 2021. Those who in-migrated by end of 2021 are included and those who out-migrated, died or were lost to follow-up by end of 2021 are excluded.

Stage 4: Virally supressed

– Number on ART whose most recent HIV and RNA measurement in 2021 was <200 copies/ml, or below the level of detection of the assay. Those who in-migrated by the end of 2021 are included and those who out-migrated or died by the end of 2021 are excluded. This number was estimated as recommended by UNAIDS definition of this indicator to account for those with missing measurements. It is calculated from the number suppressed among those tested, multiplied by the total number of people on treatment. This assumes that levels of suppression in the untested population are the same as those in the tested population.

The same methods were used for evaluating the stages of the general continuum of HIV care and of the one referring only to men who have sex with men, unless it is otherwise stated.

Data sources

An anonymised database extracted from patient records of the University Clinic for Infectious Diseases and Febrile Conditions in Skopje was used as the source for the data (number of PLHIV diagnosed per year, CD4 counts at time of diagnoses, HIV/AIDS stage at diagnosis, probable mode of transmission – e.g. sex between men, ART dispensed, viral load count, record of deaths, out-migrations and date of last visit).

All diagnosed HIV patients on ART are treated at the Clinic for Infectious Diseases and all diagnosed cases are reported to the Institute of Public Health. We assumed that we had complete data, as the surveillance and HIV treatment in North Macedonia are centralized.

During this research we used anonymized data sets with unique identifiers to match the cases between the Institute of Public Health and Clinic for Infectious Diseases until the end of 2018. In no case personal data was used nor was the patient identity revealed.

HIV cases known to have died from non-HIV related conditions were accounted as dead.

Estimation of PLHIV

To estimate the number of PLHIV we used the ECDC HIV Platform version 2.0.7, which was the latest version available at the time of the analysis. This tool relies on routinely collected surveillance data. It estimates HIV incidence over time (annual number of new infections), time from infection to diagnoses and our outcome of interest: number of PLHIV, including those not yet diagnosed.

The input data set for the tool was prepared as instructed in the ECDC HIV Platform manual using Microsoft Excel. The following data were used: date of case notification, date of HIV diagnosis, date of AIDS diagnosis, year of death, age, gender, mode of transmission and first CD4 count measured after diagnosis. We used all historical data available covering the period from year 1987 until the end of 2021.

Cases that were long-term lost-to-follow-up (more than 10 years) were marked as dead with date of death set at 10 years after diagnosis.

The incidence method uses parameters (time intervals) for presumed shape of diagnosis probability. The manual strongly encourages to adjust these parameters to be specific for country's history of testing and treatment. This was discussed within the study team and the following setup was used:

Time interval 1: 1980-1986 – no HIV test available

Time interval 2: 1986-2005 – the first HIV test available from 1986

Time interval 3: 2005-2015 – start of ART and introduction of voluntary testing from 2005

Time interval 4: 2015-2021 – significant scale-up of testing among key populations from 2015.

The option to start new baseline ('jump') was set to 'true' for 1986-2005, 2005-2015 and 2015-2021 time intervals, while option for 'Change in CD4 count' and 'Change in interval' were set to 'false' for all time intervals.

The analysis was conducted for two populations: "All PLHIV" and "MSM living with HIV". The MSM population category is based on the recorded probable mode of transmission as MSM, while "All PLHIV" includes everyone diagnosed with HIV.

To calculate 95% confidence intervals (95% CI) 200 iterations were used in the bootstrap analysis for a full calculation of confidence intervals, as recommended by the ECDC manual.

ECDC HIV modelling Tool produces an estimated number of PLHIV, but as this number does not fully account for all deaths, out-migrations and long term loss-to-follow-up we used proportion (%) undiagnosed output to calculate estimated number of PLHIV.

The following formula was used:

PLHIV = Diagnosed / (1 – (P/100))

Where:

PLHIV: total number of PLHIV alive and living in Macedonia (diagnosed and undiagnosed)

Diagnosed: number of PLHIV who are registered in patient records as alive and living in Macedonia

P (%): proportion of PLHIV who are undiagnosed as estimated by ECDC Tool

The confidence intervals for the PLHIV estimate were calculated by applying the same formula on confidence intervals of proportion undiagnosed.

Data analysis for "diagnosed", "on ART" and "virally suppressed"

The analysis was conducted using Microsoft Excel following the definitions presented in this report. The 'number diagnosed' is the total number of diagnosed in the database. 'Number on ART' are those marked as having ART dispensed in 2021 in the database. The proportion of virally supressed was calculated with viral load counts <200 copies/ml on the last measurement in 2021 divided by those who had a viral load measurement recorded.

From the 'number diagnosed', 'number on ART' and 'number virally supressed' those who have died, migrated-out and were long-term lost to follow-up (more than 10 years not seen at the clinic) were subtracted.

This data is based on patient records and information from the Clinic's HIV Centre.

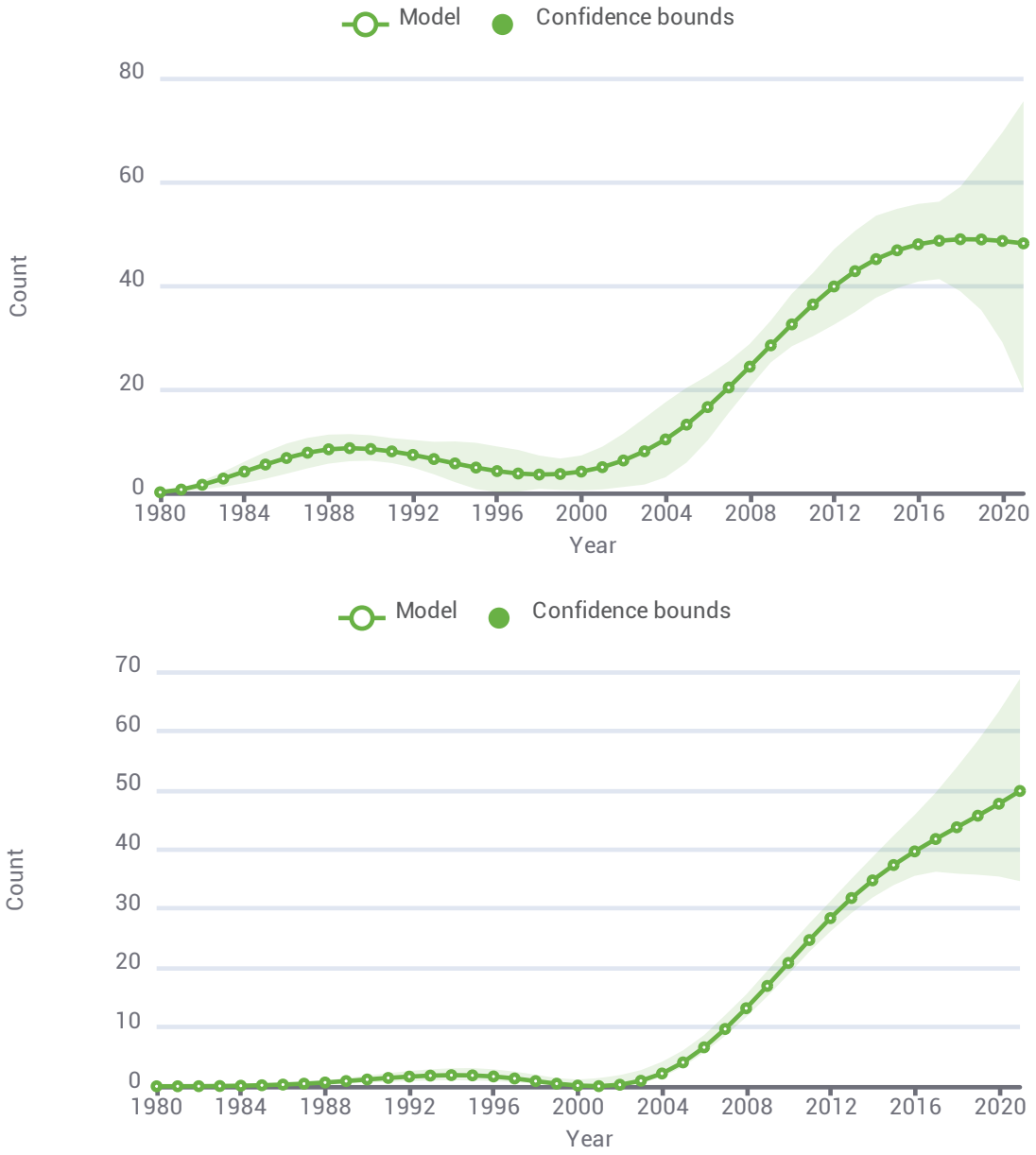
During this analysis more effort was focused on correctly marking deaths, out-migrations and lost-to-follow-up.

Results

Results of the Incidence method model

The ECDC HIV Modelling Tool using the Incidence method estimated the yearly number of new infections (HIV incidence), the time to diagnosis and the proportion of PLHIV undiagnosed, which we used to calculate the total number of PLHIV.

The results show that the number of new infections seems to be stabilising in recent years as visible in the graph below. It is estimated that there were 48.1 (95% CI 19.7-75.5) new infections in 2021. When subset of MSM data is analysed, it results with a similar incidence at 50.0 (95% CI 34.6 – 68.8) new infections in 2021. However, the MSM subset of data shows steady growth of new infections. The confidence intervals are wide as there is high degree of uncertainty in these estimates.



Estimated number of new HIV infections 1980-2021, all PLHIV (above) and MSM (below).

The model estimates average time to diagnosis at 3.9 (95% CI 3.4 - 4.6) years for all PLHIV and slightly lower period of 3.7 (95% CI 3.1 – 4.4) years for MSM.

Finally, the tool estimates 29.7% (95% CI 22.2 – 35.7) of all PLHIV are undiagnosed and 34.1% (95% CI 27.4 – 41.0) of MSM are undiagnosed. Using these proportions the estimated number of PLHIV was calculated by applying formula shown earlier, as follows:

Total all PLHIV = 348/(1–29.7%/100)) = 495;

Total MSM PLHIV = 258/(1 – (34.1%/100)) = 392.

The national continuum of HIV care for all PLHIV

Using the definitions and data sources described earlier the continuum of HIV testing and care for all PLHIV is:

Stage 1: Number of PLHIV:

495 (95% CI 447 – 541) when using the estimated proportion of undiagnosed from the ECDC HIV modelling tool and accounting for deaths and out-migrations.

Stage 2: Diagnosed

348 after accounting reported deaths (n=119), migrated-out (n=69), long-term lost to follow-up (n=8) from the total number diagnosed (n=495). When using the estimated number of PLHIV as denominator, 70.3% (95% CI 64.3% - 77.8%) of them are diagnosed by the end of 2021.

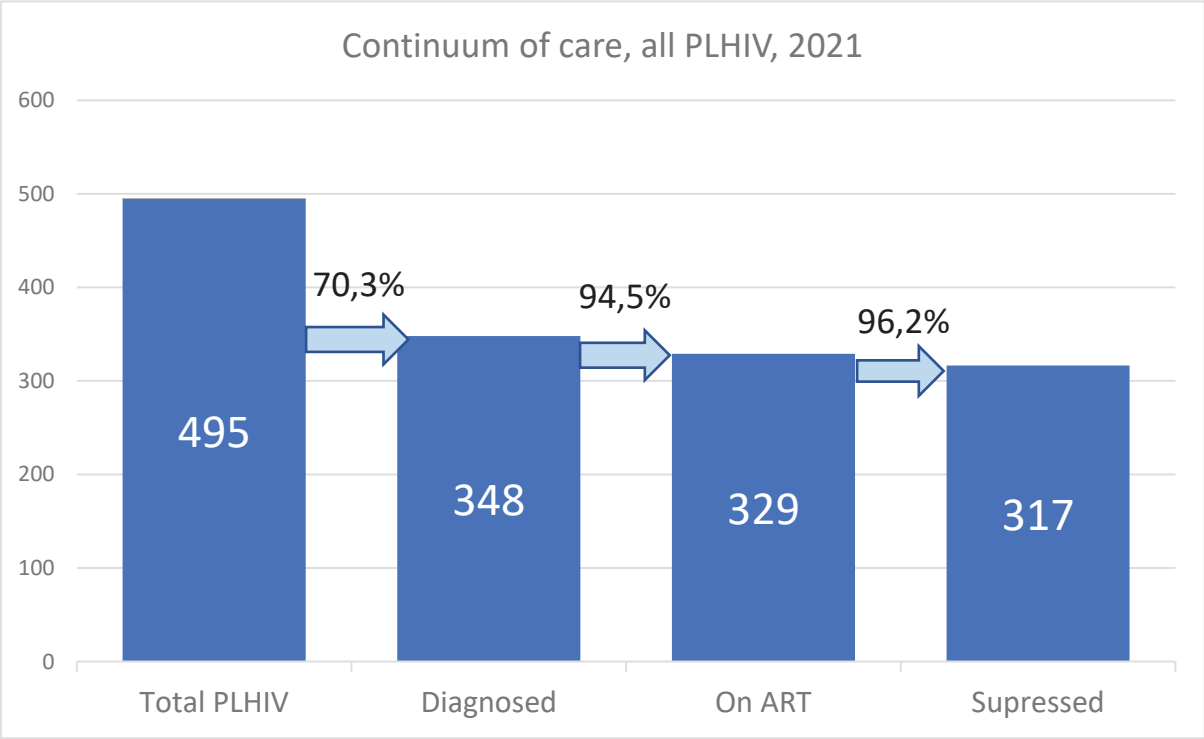
Stage 3: On ART

329 have at least one record of ART dispensed in 2021 after accounting for in-migration, out-migration, deaths and lost-to-follow. Out of 348 diagnosed, 94.5% were on ART in 2021.

Stage 4: Virally supressed

317 is the estimated number on ART whose most recent HIV viral load measurement in 2021 was <200 copies/ml, or below the level of detection of the assay. Out of 329 on ART, 96.2% were virally supressed in 2021. The estimated number supressed was calculated from the number suppressed (n=304) among those tested (n=316), multiplied by the total number of people on treatment (n=329). This assumes that levels of suppression in the untested population are the same as those in the tested population.

Figure 2. The national continuum of HIV care in North Macedonia – all PLHIV



The national continuum of HIV care for MSM living with HIV

Using the earlier definitions and data sources the continuum of HIV testing and care for MSM living with HIV is:

Stage 1: Number of PLHIV living with HIV:

392 (95% CI 355 – 437) when using the estimated proportion of undiagnosed from ECDC HIV modelling tool and accounting for deaths and out-migrations.

Stage 2: Diagnosed

258 after accounting for reported deaths (n=32), migrated-out (n=40), long-term lost to follow-up (n=0) from the total number diagnosed (n=330) recorded as MSM at the end of 2021. When using the estimated number of PLHIV MSM as denominator, 65.9% (95% CI 59.0% - 72.6%) of them are diagnosed by the end of 2021.

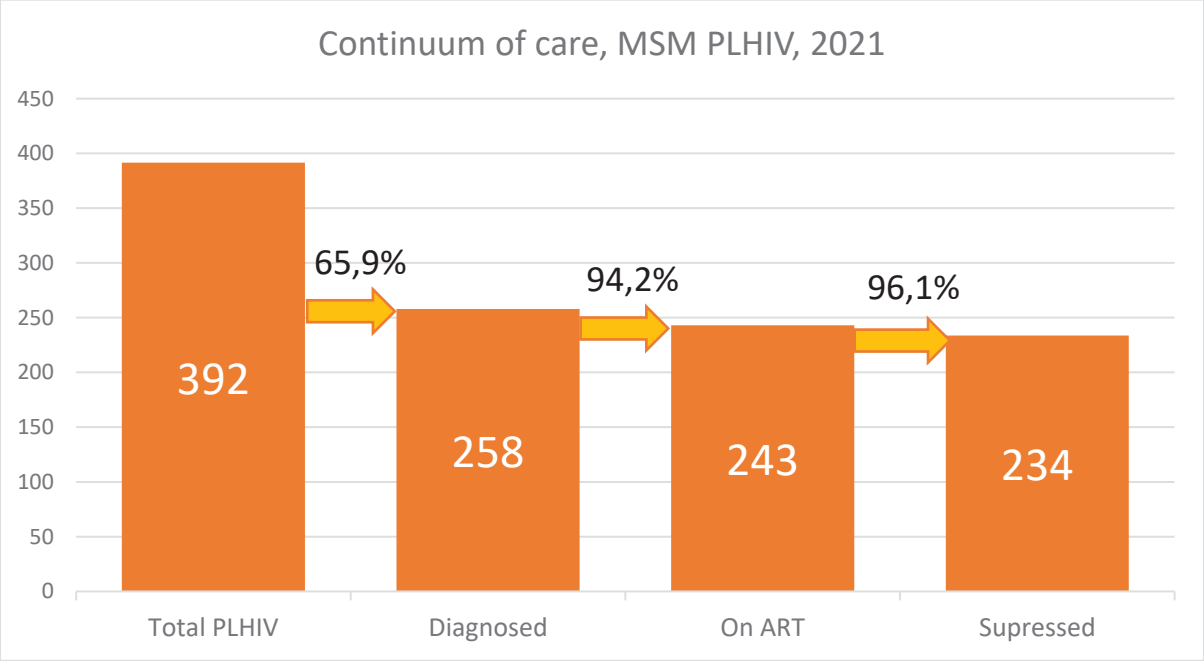
Stage 3: On ART

243 have at least one record of ART dispensed in 2021 after accounting for in-migration, out-migration, deaths and lost-to-follow. Out of 258 diagnosed, 94.2% were on ART in 2021

Stage 4: Virally supressed

234 is the estimated number on ART whose most recent HIV viral load measurement in 2021 was <200 copies/ml, or below the level of detection of the assay. Out of 243 on ART, 96.1% were virally supressed in 2021. The estimated number supressed was calculated from the number suppressed (n=224) among those tested (n=233), multiplied by the total number of people on treatment (n=243). This assumes that levels of suppression in the untested population are the same as those in the tested population.

Figure 3. The continuum of HIV care in men who have sex with men in North Macedonia



Discussion

Achievement of the 95–95–95 targets

This analysis shows progress in achieving the 95-95-95 targets. The targets for the third "95" seem to be achieved with 96.2% of diagnosed PLHIV having achieved viral suppression and almost achieved for the second "95" with 94,5% of patients being on ART. The largest gap remains in the first "95", i.e. the number of people diagnosed. According to the results we received, 70.3% of PLHIV were aware of their HIV status at the end of 2021, showing significant need to scale-up HIV testing and ease access to prevention and testing for all populations with focus on the most affected population of MSM. Based on the results of the analysis, MSM have a lower level of HIV status awareness, which may be explained by a rise in the new HIV infections which is not matched by the up-take of HIV testing services.

For comparison with other countries in the European Centre sub-region, 80% of PLHIV have been diagnosed in the region (range: 50%–91%) [11]. Confirming the need for further efforts to reach diagnosed rates in other countries in the region. When comparing the number of PLHIV on ART, 84% were on ART in the European Centre sub-region (range 57–98%) showing that North Macedonia has achieved considerably better result than the average. Lastly, 64% were virally suppressed (range 49–98%) in the Centre sub-region, showing that North Macedonia is performing exceptionally better in the third stage of the continuum than most countries in the region.

According to programmatic data from 2021, a total of 818 MSM were tested through HIV testing services provided by CSOs, which is not a significant number and moreover it is showing a downward trend compared to 2020 and 2019 when 1,010 and 1,097 MSM were tested respectively, and almost 50% decrease compared to 2018, when 1,614 MSM were tested. The small portion of the total number of MSM in North Macedonia suggests a need for intensified HIV testing among MSM.

As in the previous assessment of the continuum of HIV care, we can conclude that once people living with HIV know their status, the vast majority of them have good treatment outcomes. The high coverage with ART (94.5% of those diagnosed) can be attributed to the comprehensive system for care with strong linkages between the Clinic for Infectious Diseases, community-based support and the services provided by civil society organizations working in the field of HIV prevention among key populations. However, there is an opportunity to reach those who are not on ART – primarily because of not being diagnosed.

The high proportion of viral suppression (96.2%) can be explained with high adherence to treatment among patients, an individualized approach to the choice of treatment regimens accompanied with psychosocial and peer support services. The team at the Clinic for Infectious Diseases sends regular reminders for the patients who did not show up for regular check-up in due time, which also contributes to the adherence.

In this analysis we have estimated the viral suppression level using UNAIDS guidelines with a formula for countries where coverage of viral load tests is above 50% as explained in the Methods section. In North Macedonia, 95.9% PLHIV on ART had viral load measurement in 2021.

The UNAIDS 95-95-95 targets are part of UNAIDS 2025 targets which also include emphasis on removing societal and legal impediments to service delivery, and on linking or integrating the provision of HIV services with the other services needed by people living with HIV and communities at risk to stay healthy and build sustainable livelihoods. This includes targets not measured by this report, such as 95% of people at risk of HIV use combination prevention, less than 10% experience stigma and discrimination and other targets. [12]

Comparison with the previous studies

This is a fourth study to assess the continuum of HIV care in North Macedonia done at the national level, focusing both on the total population of people living with HIV and on men who have sex with men specifically. This study shows progress in reaching the goal for the first target; in the 2018 analysis, 65.1% of the estimated total number of people living with HIV were aware of their status at the end of 2018, while in this analysis we received an improved result for this parameter – at 70.3%. There are improvements in the other two indicators, with percentage on ART increasing from 87.8% to 94.5% and percentage virally suppressed 84.4% to 96.2%.

There is a similar estimated number of the undiagnosed PLHIV. In the 2018 analysis the estimated number of undiagnosed was in a range of 104 to 180 (midpoint=142), while in this analysis it ranges from 99 to 193 (midpoint=147). There has been no noticeable progress in the decreasing of the number of undiagnosed.

The results for MSM also show improvement when compared with 2018, with increase in the first target (diagnosed) from 53.6% to 65.9%, second target (on ART), 91.2% in 2018 compared to 94.2% and increase in virally supressed from 81.2% to 96.1%.

These improvements are partly explained by higher quality of data, in particular with more effort invested in better classification of out-migrations and lost-to-follow-up cases and in minor changes in the calculation approach for viral suppression. However, the results show high quality-of-care standards in the country.

The estimates for MSM living with HIV are still lower than the estimates obtained based on the last bio-behavioral survey and population size estimation performed at the end of 2017 and the beginning of 2018 (n=597) [14]. The limitations of the estimates obtained through the bio-behavioral survey – only MSM living in Skopje were included – may have contributed to overestimating the prevalence of HIV among MSM and accordingly the number of MSM living with HIV. On the other hand, the ECDC HIV Platform tool could have underestimated the number of MSM living with HIV considering that newly diagnosed MSM with HIV may not always have disclosed having had sex with other men.

Limitations

The estimates may be affected by the quality of data, in particular as some PLHIV who died or migrated out may have not been recorded. Each estimate of the number of PLHIV and number undiagnosed is calculated based on a model with confidence intervals. These should be taken into account when observing differences between years.

In constructing the continuum of HIV care specifically for men who have sex with men we relied on the officially reported surveillance data on the mode of transmission. However, it can be assumed that a certain number of men diagnosed with HIV never disclosed having same-sex sexual relations, especially in the early years, when no adequate system for psychosocial support existed in the country. Also, the subset of data of MSM is smaller – potentially leading to less precision in estimates.

This estimated number of PLHIV is based on the ECDC HIV platform; we have not used other methods, such as those based on the Spectrum tool, to compare results.

Recommendations

In order to increase the number and proportion of diagnosed people living with HIV, it is paramount to scale up the HIV testing programmes, especially focusing on men who have sex with men, where HIV prevalence and incidence is the highest.

Access to HIV testing should be increased by introducing lay-provider testing within the existing community-based services and options for self-testing. Targeted awareness raising among men who have sex with men, including through the social media, should be done at a higher scale.

The Ministry of Health should increase funding for targeted prevention interventions with special focus on men who have sex with men, building on the existing mechanism. In addition to the above mentioned approaches, these interventions should include a scale-up of the recently introduced PrEP services, as they have the potential to contribute to reducing HIV incidence leading to a decrease in number of undiagnosed.

Furthermore, the Government and the Parliament should ensure an adequate legal framework to enable continued engagement of civil society and community-based organizations in the outreach and service delivery to key affected populations, in particular men who have sex with men.

Community-based and other civil society organizations should be proactive in learning from good practises from around the world and should propose innovative strategies to reach out to men who have sex with men, considering their diverse needs and the specific subgroups of MSM.

There is a need for regular cross-sectional studies among key populations, especially MSM, in order to determine the HIV and STIs prevalence and to determine risk factors and factors associated with not testing, so that the impact of prevention programmes can be evaluated and future activities could be better tailored. It is also important that new integrated biobehavioural surveys among MSM be planned in the near future. Seeking additional technical support regarding estimations may need to be considered.

Should new strategies to diagnose more people living with HIV prove to be successful in the next 2 to 3 years, the Ministry of Health must be ready to provide treatment and care for an increased number of patients, in order to maintain the high results in stages 3 and 4 of the continuum of care. Strategies to reduce costs for ARVs should be considered in parallel.

Recommended actions of priority

- Increase testing among men who have sex with men with a targeted strategy.
- Increase funding for community-based testing.
- Diversify HIV testing by strengthening community-based service delivery, introducing lay providers and self-testing and considering other options.
- Targeted awareness raising and promotion of HIV testing among MSM.
- Up-date and scale up prevention programs for men who have sex with men and offer comprehensive package of services including PrEP and PEP.
- Support innovative strategies to reach out to men who have sex with men considering their diverse needs and the specific subgroups of the population.
- Conduct new integrated bio-behavioural survey and population size estimation within a period of two years in order to reassess trends in the epidemic and in behavior
- Plan for increased need of treatment and care as a result of a strengthened strategy to diagnose more people living with HIV.

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