

# Going the extra mile to end the HIV epidemic

Learning from selected high-income countries' efforts to reach 2030 UNAIDS HIV goals

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# Foreword

Ending the Human Immunodeficiency Virus (HIV) epidemic is possible. Over the past four decades, advocacy, research and investment has enabled us to develop initiatives, tools and treatments. This progress has been fundamental for providing a range of prevention methods, scaling-up effective treatment and exploring potential cure pathways. The United Nations has mobilized unprecedented and ongoing leadership commitment to progress, through a series of high-level meetings and political declarations that include accountability metrics and reporting commitments, and through the Sustainable Development Goal 3.0.

There are now many ways to support people who are at risk of acquiring HIV. People living with HIV (PLWH), who have access to treatment, have a near normal life expectancy and, with an undetectable viral load, are unable to transmit the virus. In fact, those diagnosed early who start and stay on treatment are able to enjoy a similar life expectancy as people not living with HIV. There is much to celebrate.

Yet, disparities persist and the innovations in care and treatment that we have available are not experienced by all of those who need them most. The progress in reducing new infections has been too slow to reach the global targets. Many individuals at risk for HIV infection still do not have access to innovative HIV prevention tools. HIV is still incurable and associated with a substantial burden, such as lifelong treatment and an excess risk of comorbidities. Many people at risk of or living with HIV face stigma and discrimination that impedes our HIV responses. Countries need to employ innovative tools on an impactful scale and remove structural and social barriers to end the epidemic. It is clear that all countries have more to do—by looking in more detail and targeting differentiated interventions to close the disparities that remain.

We are grateful to BCG for analysing what is working and can be more widely implemented, showcasing what is possible when prioritizing HIV as a public health threat. This report provides insights, best practices and recommendations to achieve what is required to end the epidemic, and emphasizes the importance of a multi-sectorial response, including the strong commitment of the government and the vital roles of community-led services.

The report is a reminder for us all that we must draw upon the many tools and service solutions we have to sustain good progress across the HIV care cascade while continuing to drive ongoing innovation. But it is a timely challenge that without key enablers, we are at risk of falling short of the 2030 targets.



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# Executive Summary

Since the beginning of the HIV epidemic in the 1980's, 86 million people globally have been impacted with HIV and 40.4 million people have died of HIV<sup>1</sup>. Since then, the HIV epidemic has been transformed through years of concerted efforts by people living with HIV, advocates, governments, policy makers, researchers, clinicians, and pharmaceutical companies across the world. These combined efforts have enabled (i) scientific innovations, (ii) mitigation of barriers to access care and treatment, and (iii) healthcare systems designed to meet the changing needs of all those impacted by HIV, reducing global HIV-related deaths to their lowest since 1994.

Despite the achievements to date, the HIV epidemic is not over. In 2022, 39 million people globally were living with HIV, 1.3 million people newly acquired HIV and 630,000 people died from HIV-related causes. What has become apparent is that ending the HIV epidemic will require a redoubling of the collective efforts.

Eliminating persistent HIV-related stigmas, overcoming existing inequalities in accessing testing, treatment, and care, achieving sustained viral suppression, and enabling better quality of life (QoL) by treating co-morbidities are, among others, the main challenges that need to be overcome to end the HIV epidemic.

To focus and accelerate efforts to end the HIV epidemic, global organizations such as the United Nations and the World Health Organization (WHO) have defined HIV strategies, targets, and milestones to reflect the principles of addressing health inequities, serving person-centric needs, and ensuring financial sustainability of healthcare systems (4). Governments have signed up for the global commitments of ending the HIV epidemic as a public health threat by 2030, but only a few countries are on track to achieve that goal.

A set of high-income countries selected for the scope of this report (Australia, Canada, France, Germany, Italy, Japan, Spain, United Kingdom, United States) have achieved significant progress on UNAIDS targets. However, even in these countries, additional effort is required to go the “extra mile”, especially to ensure robust prevention and early diagnosis efforts, and to reduce HIV-related stigma:

- Countries with more progress on UNAIDS “95%-95%-95%” targets (95% of people aware of their HIV status, 95% on treatment and 95% virally suppressed), such as the UK, have intensified their focus of policies and interventions for HIV prevention, given the impact that effective prevention measures have downstream in the HIV care cascade.

- In countries that have made less progress in achieving the UNAIDS HIV targets, such as Japan, the focus of spending is still on HIV care post-diagnosis without intensified investments in prevention. We see an opportunity to leverage the learnings from other countries and enhance focus on prevention.

BCG set out to understand the progress that these high-income countries have made, as well as best practices that have contributed to progress and developed a perspective on learnings and experiences along the HIV prevention and care continuum to inform the path to end the HIV epidemic. The objective of this assessment is for selected higher-income countries and other countries to take stock of lessons learned and leverage the learnings for more targeted action toward ending the HIV epidemic. Based on those learnings, we recommend high-income countries continue investing in ending new HIV transmissions, focusing on four key interventions:

- **Allocate resources to PrEP (Pre-Exposure Prophylaxis) promotion to increase uptake**, especially among key populations where access, misinformation and stigma still represent key barriers to higher uptake.
- **Incorporate an “opt-out” approach for HIV screening and diagnosis** following a status neutral cascade approach, focusing on healthcare settings where each country has the largest gaps in diagnosis rates – e.g., emergency departments (EDs), high-prevalence cities – to ensure financial sustainability.
- **Expand HIV care delivery beyond traditional healthcare settings** (e.g., community-based care) to ensure universal access to care and treatment, and retention in care, by providing differentiated service delivery models of care that focus on the individual's needs.
- **Define and implement tools to measure health-related quality of life (HrQoL)<sup>2</sup>** (e.g., Patient Reported Outcomes Measures, Patient Reported Experience Measures), as a measure to monitor quality of life and ensure long term success.

The above-mentioned interventions need to be part of a **national HIV strategy** that sets out the country's ambition, priorities and commitments on HIV. This strategy also needs an **action plan** with executable initiatives to fulfil country commitments, funding to resource those initiatives, clear **accountabilities** to define and drive progress on HIV interventions, and a comprehensive **monitoring system** to measure and report progress on a recurring basis.

Although these priority interventions have proven to have high impact in ending the HIV epidemic, we have observed three critical **enablers to accelerate efforts** along the HIV prevention and care cascade:



- **Enabler 1 – Sustained funding:** Many countries have been investing significantly in HIV prevention and care in order to make progress in achieving the global UNAIDS targets. Despite those major investments to date, there is a clear case for sustained and continuous funding, with each country focusing spend on the key unmet needs in the country. For example, countries with the highest progress will likely focus a larger proportion of HIV funding on prevention to limit the increase in HIV incidence rates.



- **Enabler 2 – Innovation:** Innovation across the HIV prevention and care cascade has transformed the HIV epidemic in many ways by ensuring access to biomedical prevention, speeding viral load suppression, increasing quality of life and, ultimately, enabling an environment to pursue a cure for HIV. Among the different types of innovation (e.g., biomedical innovation in therapies, new diagnostic technologies, innovation in care / services, etc.), biomedical innovation has played an important role in controlling the HIV epidemic, with the large-scale expansion of antiretroviral therapy (ART) driving a decrease in global HIV-related deaths as well as reducing transmission rates and improving quality of life. Some examples of the benefits reached through biomedical innovation include:

- o **Innovative ART** has led to rapid and sustained viral suppression for people living with HIV, eliminating the possibility of viral transmission (Undetectable = Untransmittable).
- o **Preventative innovative therapies** - Pre-exposure prophylaxis (PrEP) and Post-exposure prophylaxis (PEP) - have been developed for priority populations to block the transmission of the virus when in contact with people living with HIV who do not have undetectable levels of viral load.
- o **Enhanced modes of administration**, e.g., injectable PrEP vs. single-tablet regimen PrEP, improve quality of life of key populations by decreasing the burden of care and reducing the risks of non-adherence.

Going forward, innovation beyond biomedical therapies, e.g., in diagnostic technologies and services, across the HIV care cascade will be essential to ongoing progress.



- **Enabler 3 – Differentiated service delivery models:** care delivery models need to evolve from the one-size-fits-all, traditional clinic-based model to differentiated service delivery for HIV prevention and care – a person-centred approach that simplifies and adapts HIV care services across the cascade in ways that both serve the needs of people living with and vulnerable to HIV and optimize the available resources in health systems<sup>3</sup>.

Ending the HIV epidemic requires a strong commitment from all relevant stakeholders. Governments, public health leaders, healthcare providers, community organizations and society have the opportunity to learn from the lessons of those who have tried a range of interventions and take real action now.

- **Governments** need to be a driving force to end the HIV epidemic and the facilitator of initiatives to be implemented by other stakeholders, ensuring continuous funding, and streamlining access to innovation.
- **Public health leaders** need to be, more than ever, the catalysts that ensure policies, promote and deliver differentiated service delivery models and facilitate the implementation of initiatives to end the HIV epidemic.
- **Healthcare providers** need to play a pivotal role in this effort through innovation – by providing wider and more innovative HIV treatments and services-, accessibility, education, collaboration and advocacy, and pharmaceutical companies need to invest in biomedical innovations to improve health-related quality of life of people living with HIV and, ultimately, develop a cure for HIV.
- **Community-led organizations and people living with HIV** need to advocate for people living with HIV and vulnerable populations at risk, driving policy and strategy, innovative service delivery, and accountability to ensure what is being promised is being delivered.
- **Society** needs to provide a safe environment for everyone to feel included and empowered to access care.



## Introduction

Since the beginning of the HIV epidemic, 86 million people globally have been infected with the HIV virus and 40.4 million people have died of HIV (1). Since then, the HIV epidemic has been transformed through years of combined effort of people living with HIV, advocates, governments, researchers, clinicians, and pharmaceutical companies across the world that has sought to:

- Advance science, with the large-scale expansion of antiretroviral therapy to treat and prevent the HIV infection.
- Address the inequalities that act as barriers to care and treatment.
- Reform and adapt healthcare systems to meet the changing needs of all those living with HIV or those who may benefit from preventative care and services.

As of 2022, global new HIV infections have declined 59% since the peak in 1995, and a total of 29.8 million people are accessing antiretrovirals (ARVs), an almost four times increase since 2010 (7.7 million). AIDS-related deaths have been reduced by 69% since peaking in 2004 (2)(10).

Despite the achievements to date, the HIV epidemic is not over. In 2022, 39 million people globally were living with HIV, 1.3 million people newly contracted HIV and 630,000 people died from AIDS-related illnesses (2).

To accelerate progress, global organizations, such as the **United Nations** and **WHO**, have defined HIV strategies, targets, and milestones to advance towards ending the HIV epidemic.



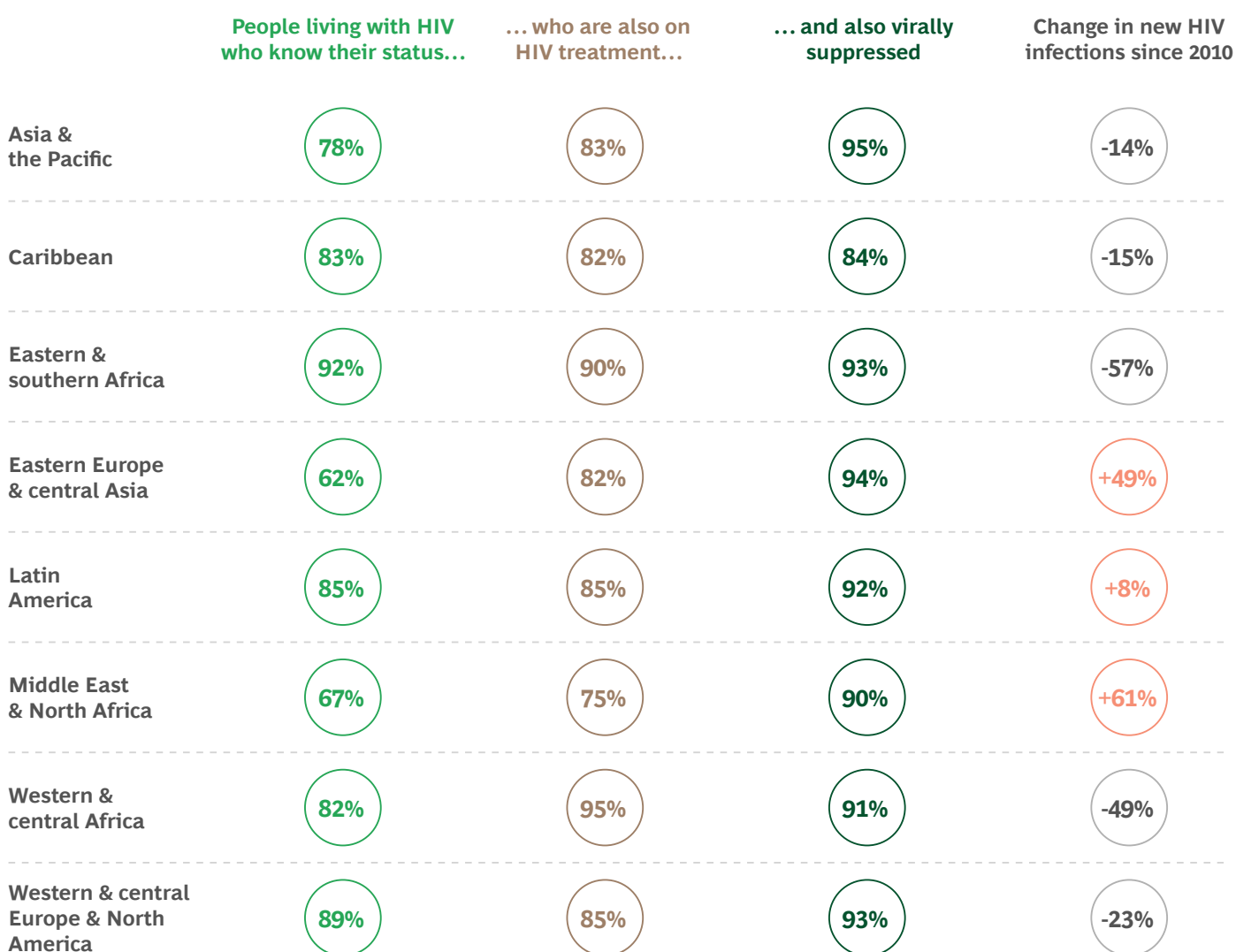
The Joint United Nations Programme on HIV/AIDS (UNAIDS) has set three target areas for people living with HIV and communities at risk that are tailored to their needs:

- **Societal enablers** (the 10s), aiming countries to provide an environment that is free of societal, political, legal, and economic barriers.
- **Integrated services** (the 90s), promoting the implementation of approaches that are people-centred and context-specific.
- **Coverage of HIV services** (the 95s), ensuring that 95% of people at risk of HIV infection use combination prevention options, and 95% of people living with HIV in each affected groups are aware of their HIV status, initiate treatment and is virally suppressed (3).

WHO has also identified HIV targets and milestones to be accomplished by 2025 and 2030 in its “Global health sector strategies on HIV, viral hepatitis and sexually transmitted infections (STIs) for the period 2022-2030” which are fully aligned with the UNAIDS targets (4).

In 2022, worldwide, it is estimated that **86%** of people living with HIV are **aware of their status**, **89%** of those are **on HIV treatment** and **93%** of those on treatment **are virally suppressed** (10). However, those statistics imply that 5.5 million people living with HIV still do not know their HIV status and some regions, especially Eastern Europe & central Asia and Middle East & North Africa, are clearly lagging behind on meeting the targets and have increased their new diagnoses since 2010 (Figure 1) (2).

**Figure 1 - 2022 Regional performance vs. UNAIDS 95-95-95 testing and treatment targets and change in new HIV infections per region**



Although global efforts to address the HIV epidemic have achieved significant advancements during the last decades and some countries are getting closer to the 95-95-95 testing and treatment targets defined by UNAIDS, most countries are still falling short of these goals and going the extra mile to end the HIV epidemic will require specific interventions.

The goal of this report is to **consolidate the learnings and most impactful experiences** from selected high-income countries with a long history and experience in managing the HIV and AIDS epidemic. Our hope is that all countries can leverage these learnings for more targeted action toward ending the HIV epidemic.

When assessing the progress made by those countries, **three overarching principles** stand out as the driving force to ending the HIV epidemic:

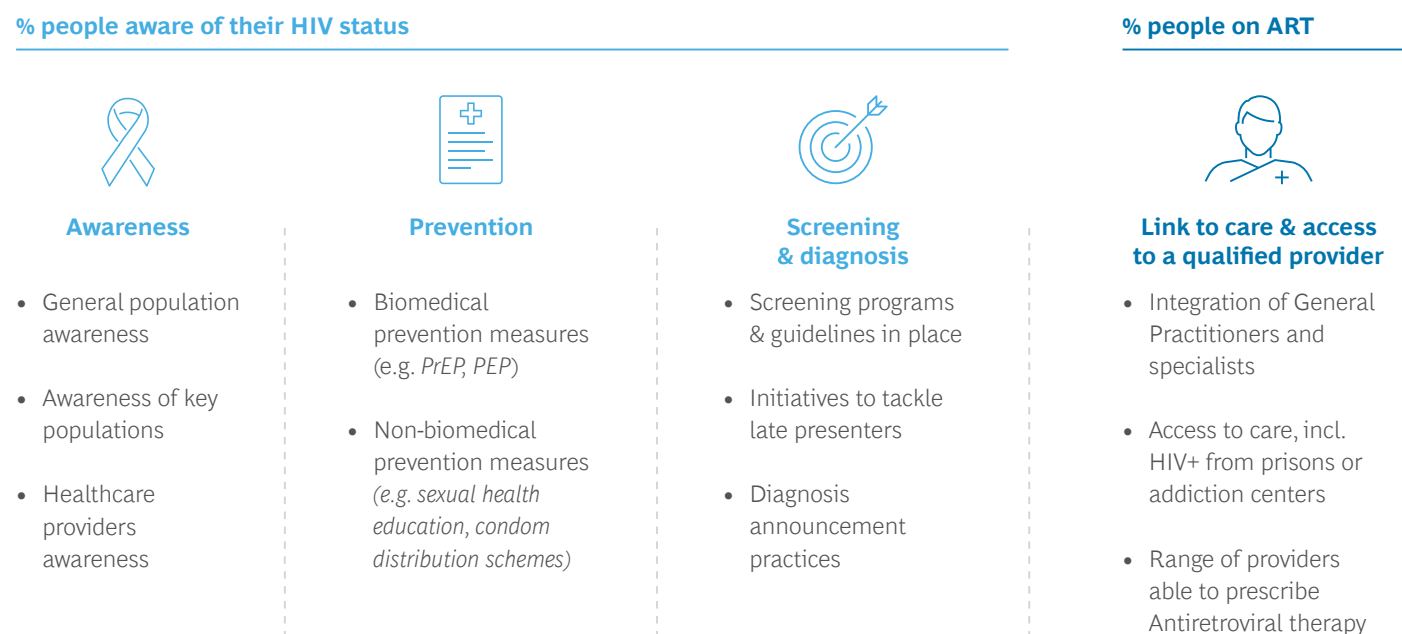
- **Health equity**, ensuring that all populations experience positive health outcomes so that everyone can attain their full potential for health and well-being (5). This can only be achieved by eliminating all barriers (e.g., punitive, legal or policy environments) to accessing prevention, care and innovative treatments and addressing the social determinants of health, such as poverty and discrimination.

- **Person-centricity**, focusing all efforts on the unique needs of individuals, letting people be the guidepost for designing, delivering, and assessing health services (2). Impactful interventions have evolved from a virus- or disease-focused approach to a whole person, needs-based approach. Empowering individuals by involving them in the decision-making process around treatment and care, in order to increase the probability to be retained in care and achieve better health outcomes (9).

- **Financial sustainability**, aiming to implement models and interventions that are feasible and cost-effective from both a health outcomes and financial perspective. Smart use of available resources, by allocating them to the most impactful interventions from a cost humanization point of view (e.g., infections and deaths prevented, better quality of life for people living with HIV, etc.) would help maximize not only progress on ending the HIV epidemic, but also contribution to society from people living with HIV.

As a result of the assessment, we seek to identify the key recommendations and best practices along the HIV prevention and care cascade (Figure 2) that could enable countries to improve their performance against the UNAIDS targets, along with the enablers that would help accelerate this journey.

**Figure 2 - Framework to assess the HIV prevention & care pathway**



**The HIV prevention and care cascade** is the framework used in this report to understand step-by-step the progress made by selected high-income countries:

1. **Awareness:** degree of HIV knowledge and level of stigma and discrimination across different populations groups (general population, key populations, and healthcare providers). Special attention has been given to how countries address structural stigma and whether the new WHO guidelines on Undetectable = Untransmittable (U=U), confirming that there is no transmission when viral load is undetectable or suppressed, are being incorporated in training to healthcare providers (6).
2. **Prevention:** main biomedical and non-biomedical prevention efforts implemented, with particular focus on availability, access (e.g., eligibility criteria, financial coverage, distribution of centres, etc.) and uptake to all types of PrEP by different key populations.
3. **Screening & diagnosis:** screening programs and guidelines for HIV testing in place, share of late diagnoses and initiatives to tackle them, and the existing practices to communicate a positive diagnosis.
4. **Link & access to care:** referral systems to link people to an HIV specialist and care, range of providers able to prescribe HIV treatment, time between diagnosis and treatment start, and differences in access to care across different settings.
5. **Access to medication:** coverage of HIV treatment by national health systems (NHS) or private health insurances and how friendly the innovation environment is (e.g., rapid registration and pricing & reimbursement processes, incentives for healthcare providers to prescribe generic options rather than innovative treatments, coverage of innovative treatments by NHS, etc.).
6. **Retention in care & long-term success:** main efforts and challenges to improve retention in care, viral load suppression, quality of life and long-term success.
7. **Evaluation & monitoring:** assessment of how granular and timely the HIV surveillance systems are and what tools are in place to evaluate health outcomes.

**% people virally suppressed**



**Access to medication**

- Coverage of HIV treatment (Generics vs. non-Generics) and dedicated funding
- Innovation / Access to Antiretroviral therapy
- Treatment guidelines and protocols



**Retention in care & long-term success**

- Retention in care
- Long term success



**Evaluation & monitoring**

- HIV surveillance
- Evaluation of outcomes



# The state of progress in selected high-income countries

## Introduction

For decades, several countries have been dealing with the HIV epidemic, investing significant resources in their healthcare systems, and implementing a set of policies, strategies, and initiatives towards ending the HIV epidemic as a public health issue. These efforts have consistently lowered the incidence of HIV/AIDS.


These nine countries (Australia, Canada, France, Germany, Italy, Japan, Spain, United Kingdom, and United States) have dedicated substantial investment to eliminating new HIV transmissions and represent 26% of total global spending on HIV in 2015 (1). In this chapter, these nine countries will be assessed with the objective of










understanding the state of progress in each step of the HIV prevention and care cascade in terms of:

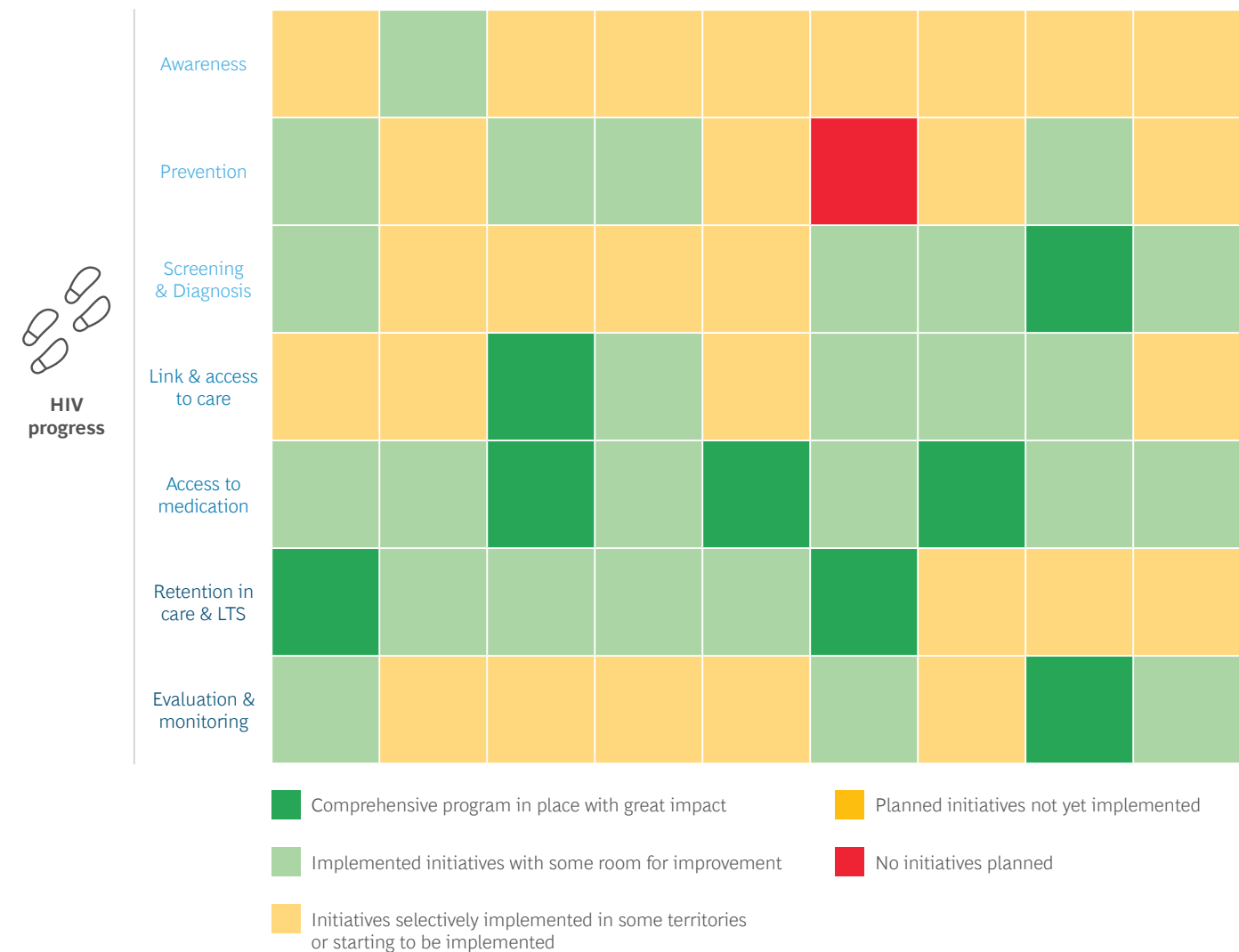
- Definition of comprehensive policies.
- Launch of initiatives to implement those policies.
- Identification of good practices and opportunities for improvement.

The outcome of this assessment will help to identify and leverage lessons learned, best practices and impactful solutions effectively implemented across countries, while being aware and reflecting on how to overcome the identified challenges.

# Figure 3 - Overview of HIV-related policies, performance & initiatives implemented along the HIV prevention & care cascade



	 <b>Australia</b>	 <b>Canada</b>	 <b>France</b>	 <b>Germany</b>	 <b>Italy</b>	 <b>Japan</b>	 <b>Spain</b>	 <b>UK</b>	 <b>USA</b>
Strategic plan in place	✓	N/A	✓	✓	✓	✓	✓	N/A	✓
Action plan or roadmap in place	✓ Regional	✓ National	✓ National	N/A	✓ Regional	N/A	✓ Regional	✓ National	✓ Federal
Progress reporting	Annually	Annually	Multi-annually	Annually	Annually	Annually	Annually	Annually	Annually
Progress vs. 2025 UNAIDS <sup>1</sup> targets <sup>1</sup>	91 92 98	90 87 95	87 95 96	90 97 96	94 93 92	86 95 99	93 97 90	94 98 97	87 75 88



1. Light blue percentage refers to people aware of their HIV status; medium blue percentage refers to people diagnosed on antiretroviral therapy; and dark blue percentage refers to people diagnosed on antiretroviral therapy and virally suppressed.

The first assessment was to understand whether countries had a clear national HIV strategy setting the ambitions and priorities on HIV, an action plan with executable initiatives and a monitoring system reporting up-to-date data on progress and metrics.

All selected countries – except Canada and the UK – have defined national HIV strategies and most of them – except Germany and Japan – have action plans in place with specific interventions to reach the 2030 UNAIDS goals. Some of them have the action plans at national level (e.g., France), some others at regional or state level (e.g., Spain, Italy and United States), leading to some variations on the actions implemented across the territory, especially in the United States, where state-based those variations could be significant. In the UK, England, Scotland, and Wales have comprehensive action plans, with England having specific objectives and milestones updated regularly. Finally, Australia and Japan have their HIV strategic plans currently under review and will be updated in 2023-2024 to renew the policies and priorities to drive progress on ending the HIV epidemic.

Canada has no national HIV strategy but has a Pan-Canadian STBBI Framework for Action launched in 2019 establishing concrete actions and implementation plans. Germany has a national strategy on HIV & other STIs released in 2016, but no national or regional action plans have been defined with actions to implement the priority areas defined by the strategy.

Finally, all selected countries have monitoring systems to measure the progress towards their ambition and key UNAIDS targets. However, there is great variation among countries on the methodologies used to report the 95-95-95 testing and treatment targets performance, reporting mandate, and the level of granularity and cadence of the data reported.

- Some countries, like Australia, the UK and the US, have very comprehensive HIV surveillance systems, with integrated data updated yearly on performance progress (although the US cycle of the data reporting is often a year behind in reporting national numbers to UNAIDS).
- Additionally, the US does not collect or report data on the second and third 95%-95%-95% targets as per UNAIDS definition, but still tracks reception of HIV treatment and viral load suppression through the following three metrics<sup>2</sup>:

- I. % of people with diagnosed HIV receiving HIV medical care, at least one CD4 or viral load test in a given year – metric used in this report to estimate the share of people living with HIV that are on HIV treatment
  - II. % of people with diagnosed HIV retained in care – two or more CD4 or viral load tests, performed at least, three months apart
  - III. % of people with diagnosed HIV who achieved viral load suppression, at least one viral load result available during the measurement year – reference used in this report to estimate the share of people on HIV treatment that are virally suppressed, over metric (I)
- Other countries like France have established the obligation to report new HIV diagnoses, but this reporting obligation is not consistently followed by the relevant healthcare providers and there are multiple non-integrated databases, compromising the quality of data.
  - Lastly, some countries like Spain have yearly updated reporting, but data is mostly based on estimations (e.g., using algorithms), and not integrated using real figures reported by healthcare providers.

A comprehensive policy-definition to Ending the HIV Epidemic (EHE) is a necessary but not sufficient condition. Having a wide-ranging implementation of effective initiatives that reach all people with methods they find culturally acceptable within countries is key to achieve further progress.

When analysing the different steps of the HIV prevention and care cascade, a common weakness identified in most countries is on evaluation & monitoring, especially on the factors to be measured to assess health-related quality of life of people living with HIV.

Additionally, whilst all countries other than Japan have access to Pre-Exposure Prophylaxis (PrEP), there is inequitable access, with certain key populations (such as migrants or populations with limited access to healthcare or racial/ethnic groups) who would benefit from PrEP and are not doing so.

2. The US does not collect data on UNAIDS' goals 2 and 3. Instead, the US measures progress along the HIV care continuum based on four metrics: (1) % of people living with HIV with known status, (2) % of people with diagnosed HIV receiving HIV medical care – at least one CD4 or viral load test in a given year, (3) % of people with diagnosed HIV retained in care – two or more CD4 or viral load tests, performed at least, three months apart, and (4) % of people with diagnosed HIV who achieved viral load suppression – at least one viral load result available during the measurement year. US performance on 95-95-95 targets has been assessed based on calculations using metrics 1, 2 and 4, respectively.

On the performance against the UNAIDS goals, most countries seem to be on track to achieve the 95-95-95 testing and treatment targets by 2025, except for Japan and the US. Although France reports 87% of people are aware of their HIV status, that percentage is as of 2018, so we assume current levels of reporting are similar to that of other countries. However, national progress on global UNAIDS goals does not always set out the inequities existing among key populations. For example, Australia reports 91% of people are aware of their HIV status, but this percentage is lower among people who use drugs (87%) and heterosexual population (85%), and higher among men that have sex with other men (MSM) (93%).

In summary, we observe gaps in the level of awareness of the general population, underserved key populations and healthcare providers, mainly driven by the existing structural stigmas among countries, and in the specificity and timeliness of HIV surveillance data reported. Whilst most countries have good linkage to care and access to medication, there are some concerns on the general availability of innovative treatments.

# TRAFALGAR







# Australia<sup>3</sup>

## Executive summary

Australia is making swift progress toward UNAIDS' 95-95-95 testing and treatment goals for 2025, backed by a 2018 national HIV strategy (to be updated by the end of 2023) aiming to nearly eliminate HIV transmission. This strategy focuses on priority groups, reducing mortality and morbidity related to HIV, combating stigma and discrimination, and minimizing the personal and social impact of HIV.

Australia's main strengths are on access to medication, with the Pharmaceutical Benefits Scheme covering all innovative treatments, and monitoring & evaluation, with a very comprehensive and up-to-date HIV surveillance system. Additionally, it has a broad range of HIV prescribers, including General Practitioners (GPs) and Nurse Practitioners (NPs), to facilitate access to care & treatment.

However, there are still some challenges, especially on awareness, screening & diagnosis, and link & access to care, that should be addressed to improve performance of the first two 95s:

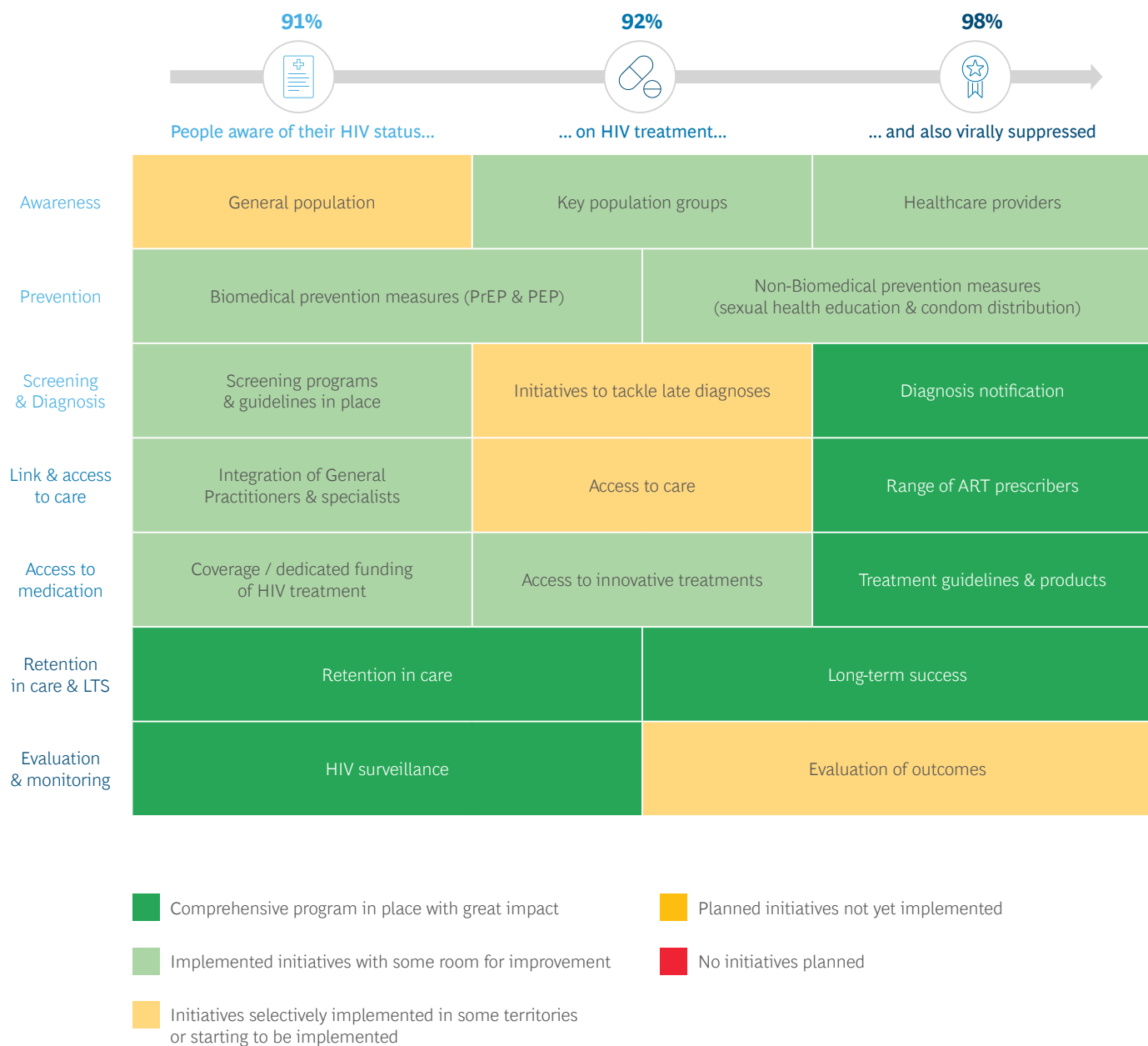
- Insufficient HIV awareness and knowledge among the general population leads to stigmatization of people living with HIV, with 38% of the population displaying negative attitudes toward people living with HIV.
- Low awareness among international migrants results in low testing rates among them, being South Asian and Latin American the highest proportion of undiagnosed population.
- No formal referral system to engage new diagnoses, potentially leading to patients not engaged in care.

3. Source: interviews with local stakeholders and primary research




Considering current state of progress in Australia, the immediate focus should be on 6 interventions:

- Culturally appropriate awareness campaigns for migrants and indigenous people to increase HIV knowledge and diagnoses rates among those most affected populations.
- Opt-out approach in Emergency rooms to tackle late diagnoses and underdiagnosed population.
- HRQoL ambition to ensure long term HIV care and definition of patient-reported outcome measures (PROMs) and patient-reported experience measures (PREMs) to direct efforts.
- PrEP free-of-charge for non-citizens (as for HIV treatment).
- Clear guidelines and directives to encourage rapid initiation of treatment.
- Removal of co-payment for ART across states, already implemented in Queensland as of Oct.' 23.

**Figure 4 - Australia country scorecard** (performance status, policy & initiatives implemented)



# Good practices & opportunities for improvement

	 <b>Good practices</b>	 <b>Opportunities for improvement</b>
 <b>Awareness</b>	<ul style="list-style-type: none"> <li>✓ National HIV strategy updated every 5 years</li> <li>✓ High number of campaigns to increase gay &amp; MSM awareness</li> <li>✓ Voluntary trainings to increase HCPs awareness</li> </ul>	<ul style="list-style-type: none"> <li>! Stigma remains an issue</li> <li>! Limited awareness among underserved groups (migrants &amp; indigenous people), in need of culturally engaging testing and care services</li> <li>! Legislation leading to criminalization of people living with HIV</li> </ul>
 <b>Prevention</b>	<ul style="list-style-type: none"> <li>✓ Free distribution condom schemes</li> <li>✓ Sexual education implemented</li> <li>✓ PrEP available through 3 channels &amp; coverage schemes</li> <li>✓ Guidelines defining PrEP eligibility</li> <li>✓ Successful needle and syringe programs, +4,000 services offered</li> </ul>	<ul style="list-style-type: none"> <li>! Some challenges to access PrEP (e.g., socioeconomic status or low knowledge of alternatives to daily PrEP)</li> </ul>
 <b>Screening &amp; Diagnosis</b>	<ul style="list-style-type: none"> <li>✓ HIV screening mandatory &amp; recommended in several situations</li> <li>✓ 550+ centers offering HIV testing in a variety of settings</li> <li>✓ 91.1% are aware of their status</li> <li>✓ National guidelines to convey people with HIV infection (HIV+) results</li> </ul>	<ul style="list-style-type: none"> <li>! Southeast Asian and Latin America with highest % of undiagnosed people living with HIV</li> <li>! ~48% of late diagnoses in 2021 (cases transmitted through heterosexual sex &amp; injecting drug use experiencing the highest increase)</li> <li>! Missed diagnostic opportunities in Emergency Rooms and Primary Care Practices</li> </ul>
 <b>Link &amp; access to care</b>	<ul style="list-style-type: none"> <li>✓ Wide range of HCPs prescribing HIV treatment</li> <li>✓ National HIV peer support guidelines</li> </ul>	<ul style="list-style-type: none"> <li>! Uneven geographical distribution of centers</li> <li>! 54% of new diagnoses initiated ART within 2 weeks</li> <li>! No formal referral system</li> </ul>
 <b>Access to medication</b>	<ul style="list-style-type: none"> <li>✓ ASHM guidelines on ART</li> <li>✓ 91.5% diagnosed patients on ART</li> <li>✓ Non-citizens ineligible for Medicare can access free ART</li> <li>✓ Convenient ART dispensing efforts</li> <li>✓ Reg &amp; P&amp;R processes not a barrier</li> </ul>	<ul style="list-style-type: none"> <li>! Use of innovative (patented) ART is only 33% of total doses of ART</li> <li>! Affordability of co-payment as one key barrier</li> </ul>
 <b>Retention in care &amp; LTS</b>	<ul style="list-style-type: none"> <li>✓ 97.8% virally suppressed</li> <li>✓ Integrated health services for PLWH</li> <li>✓ National plan includes improve QoL as a goal</li> </ul>	
 <b>Evaluation &amp; monitoring</b>	<ul style="list-style-type: none"> <li>✓ Comprehensive HIV surveillance data, including monitoring of people retained in care</li> <li>✓ Statutory reporting of new diagnoses</li> <li>✓ HIV specific tools to measure QoL</li> </ul>	<ul style="list-style-type: none"> <li>! Limited ethnicity data collection (beyond indigenous vs. non-indigenous or Australian born vs. overseas born)</li> </ul>

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# Canada<sup>4</sup>

## Executive summary

Canada is on right track to achieve the UNAIDS global targets for 2030, especially on awareness and screening, and on achieving viral load suppression. In 2020, 90% of people living with HIV were aware of their HIV status, with significant progress in the last years (vs. 79% in 2014), but only 87% are on treatment. Among those on treatment, 95% have achieved viral load suppression, already reaching the UNAIDS global target for 2025. The Pan-Canadian Sexually Transmitted and Blood-Borne Infections (STTBI) Framework for Action has been the reference to achieve this goal since 2019, promoting: (1) the reduction of STTBI incidence, (2) the improvement of access to testing, treatment and ongoing care, and (3) the reduction of stigma and discrimination associated with STTBI.

Canada's main strength is on retaining PLWH in care, mostly due to the high accessibility to ART, with a wide range of HCPs able to prescribe and broad coverage on treatment costs in most provinces.

However, significant differences exist across provinces, with some of them (e.g., Manitoba, Saskatchewan), still facing relevant challenges (mainly on prevention, access to and retention in care and access to medication) that explain why Canada has not been able to progress faster towards the HIV global targets:

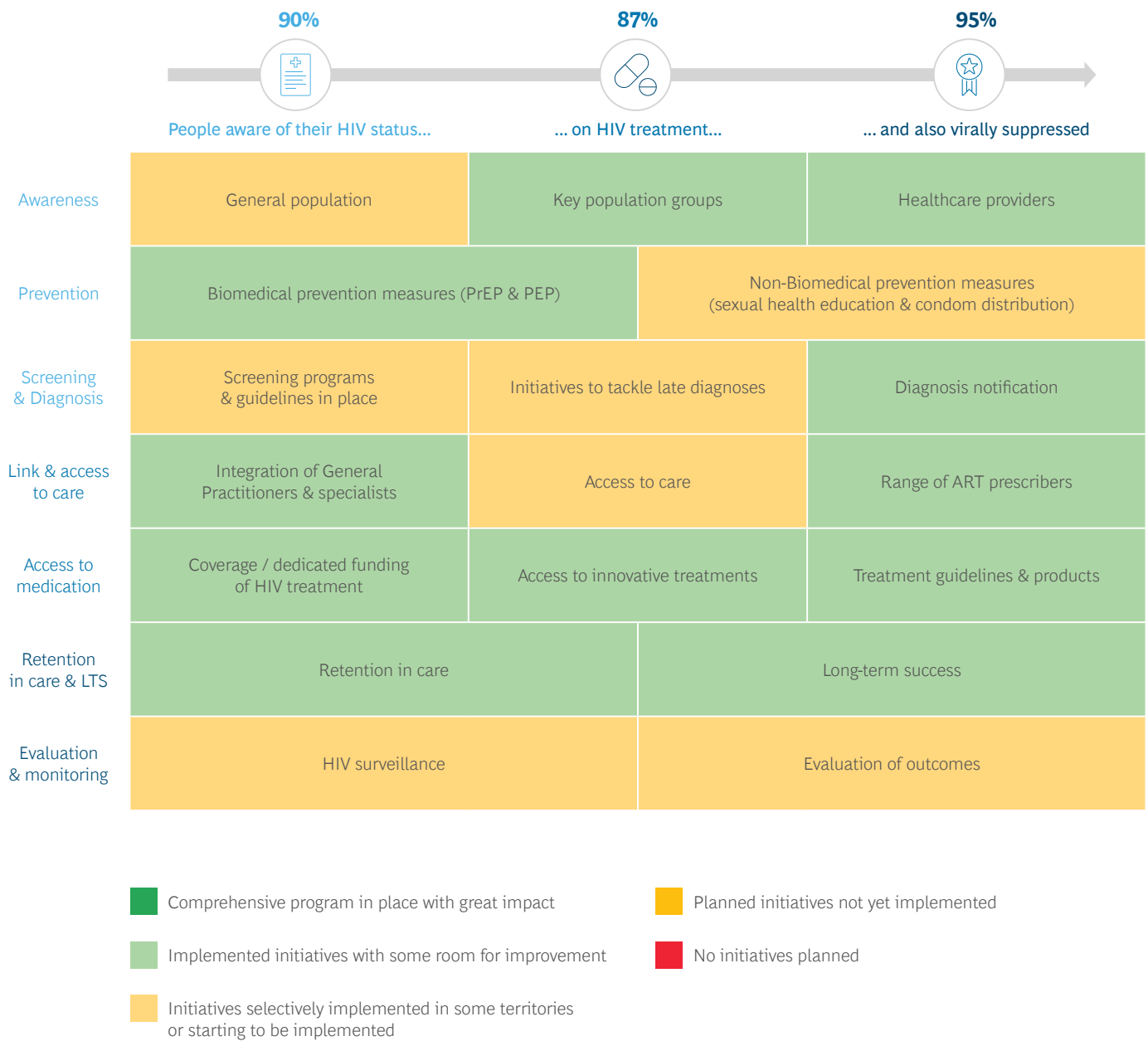
- Stigma and low HIV awareness among populations with increasing HIV incidence (e.g., indigenous, People Who Use Drugs).
- Geographical, socio-demographic & cultural differences explaining inequalities in access to care, with some provinces having deductibles and/or copayments that limit access to vulnerable populations.

4. Source: interviews with local stakeholders and primary research.

Considering the current state of progress in Canada, the immediate focus should be on 6 interventions:

- Awareness campaigns co-designed with communities for underserved populations – indigenous & people who use drugs (PWUD).
- Community-based settings as PrEP dispensing channels.
- Broad screening guidelines considering factors such as risk behaviours, demographics, etc.
- Community and peer to peer support to engage underserved populations in care.
- Decentralized HIV care delivery to ensure retention in care.
- HRQoL ambition to ensure long term success and definition of PROMs and PREMs to direct efforts.

**Figure 5 - Canada's country scorecard** (performance status, policy & initiatives implemented)



# Good practices & opportunities for improvement

	 <b>Good practices</b>	 <b>Opportunities for improvement</b>
 <b>Awareness</b>	<ul style="list-style-type: none"> <li>✓ Awareness initiatives focused on key populations</li> <li>✓ High awareness among Infectious Disease (ID) specialists</li> </ul>	<ul style="list-style-type: none"> <li>! No National Plan on HIV</li> <li>! Stigma &amp; misinformation as biggest barriers</li> <li>! Low awareness effort among the general population and some pop. groups (e.g., indigenous, PWUD)</li> </ul>
 <b>Prevention</b>	<ul style="list-style-type: none"> <li>✓ PrEP and PEP widely available</li> <li>✓ Multiple PrEP and PEP mostly generic options</li> </ul>	<ul style="list-style-type: none"> <li>! Limited branded PrEP options available across the country</li> <li>! Low PrEP uptake in non-MSM, due to minimal efforts in broadening patient categories</li> <li>! Decreased relevance in non-biomedical prevention efforts</li> </ul>
 <b>Screening &amp; Diagnosis</b>	<ul style="list-style-type: none"> <li>✓ HIV screening mandatory or recommended in several situations</li> <li>✓ HIV testing is free</li> <li>✓ HIV screening available through multiple centres, incl. self-testing and rapid tests</li> </ul>	<ul style="list-style-type: none"> <li>! 90% of PLWH aware of their status</li> <li>! 25-50% late diagnoses (end of 2019)</li> <li>! Stigma, decreasing HCP resources, lack of broad guidelines &amp; limited testing clinics as main barriers</li> </ul>
 <b>Link &amp; access to care</b>	<ul style="list-style-type: none"> <li>✓ Treatment services for free</li> <li>✓ Broad range of HCPs prescribing ART</li> <li>✓ Rapid treatment start in most locations</li> </ul>	<ul style="list-style-type: none"> <li>! Geographical and cultural differences leading to inequalities</li> <li>! Limited number of qualified ID specialists</li> <li>! Several factors leading to loss of engagement</li> </ul>
 <b>Access to medication</b>	<ul style="list-style-type: none"> <li>✓ Updated regional HIV treatment guidelines (2020-21)</li> <li>✓ ART covered by NHS / private insurance (with deductibles / co-pays)</li> <li>✓ Innovative ART typically covered</li> <li>✓ Convenient ART dispensation efforts</li> </ul>	<ul style="list-style-type: none"> <li>! Only 87% diagnosed people on ART</li> <li>! Long product approval time</li> <li>! Distance to care centre &amp; cost burden as main barrier</li> <li>! Dispensing models often challenging for vulnerable populations</li> <li>! Use of innovative (patented) ART is only 37% of total doses of ART</li> </ul>
 <b>Retention in care &amp; LTS</b>	<ul style="list-style-type: none"> <li>✓ 95% of PLWH virally suppressed</li> <li>✓ Retention in care and long-term treatment success as new key priorities</li> <li>✓ Initial efforts to measure / ensure HRQoL &amp; long-term care</li> <li>✓ Case management for multidisciplinary care</li> </ul>	<ul style="list-style-type: none"> <li>! Lack of community funding and co-location of services as challenges for long term success</li> <li>! Social determinants as key challenge for retention</li> </ul>
 <b>Evaluation &amp; monitoring</b>		<ul style="list-style-type: none"> <li>! Fragmentation of data registries &amp; accuracy gaps</li> </ul>







# France<sup>5</sup>

## Executive summary

France is making relatively good progress towards UNAIDS' 95-95-95 testing and treatment goals for 2025, with a National Sexual Health Strategy (2017-2030) and a 2021-2024 roadmap driving the strategy through 30 actions along 5 goals: (1) providing the necessary information about different prevention methods, (2) improving access to screening and means of prevention, (3) having a range of sexual health services (SHS) easily understandable and accessible, (4) responding to unmet needs by implementing population related approaches, and (5) influencing public policy on sexual health using responding data and research.

France's main strengths are on link to care and access to medication, already achieving the UNAIDS' second and third 95s, mainly driven by a well-established referral program to link people diagnosed with HIV to a specialist, and the provision of universal access to treatment, with a broad range of HCPs treating HIV.

However, there are still some challenges, especially on awareness, prevention, and screening & diagnosis that limit progress on the first 95 target, where the country reports only 87% of people aware of their HIV status (according to 2018 data, but it is likely that progress on this target has been made during the last 5 years):

- Insufficient HIV awareness and knowledge among the general population and HCPs (beyond ID specialists), leading to stigma and discrimination of PLWH, with 25% of the population feeling embarrassed to work with a PLWH.

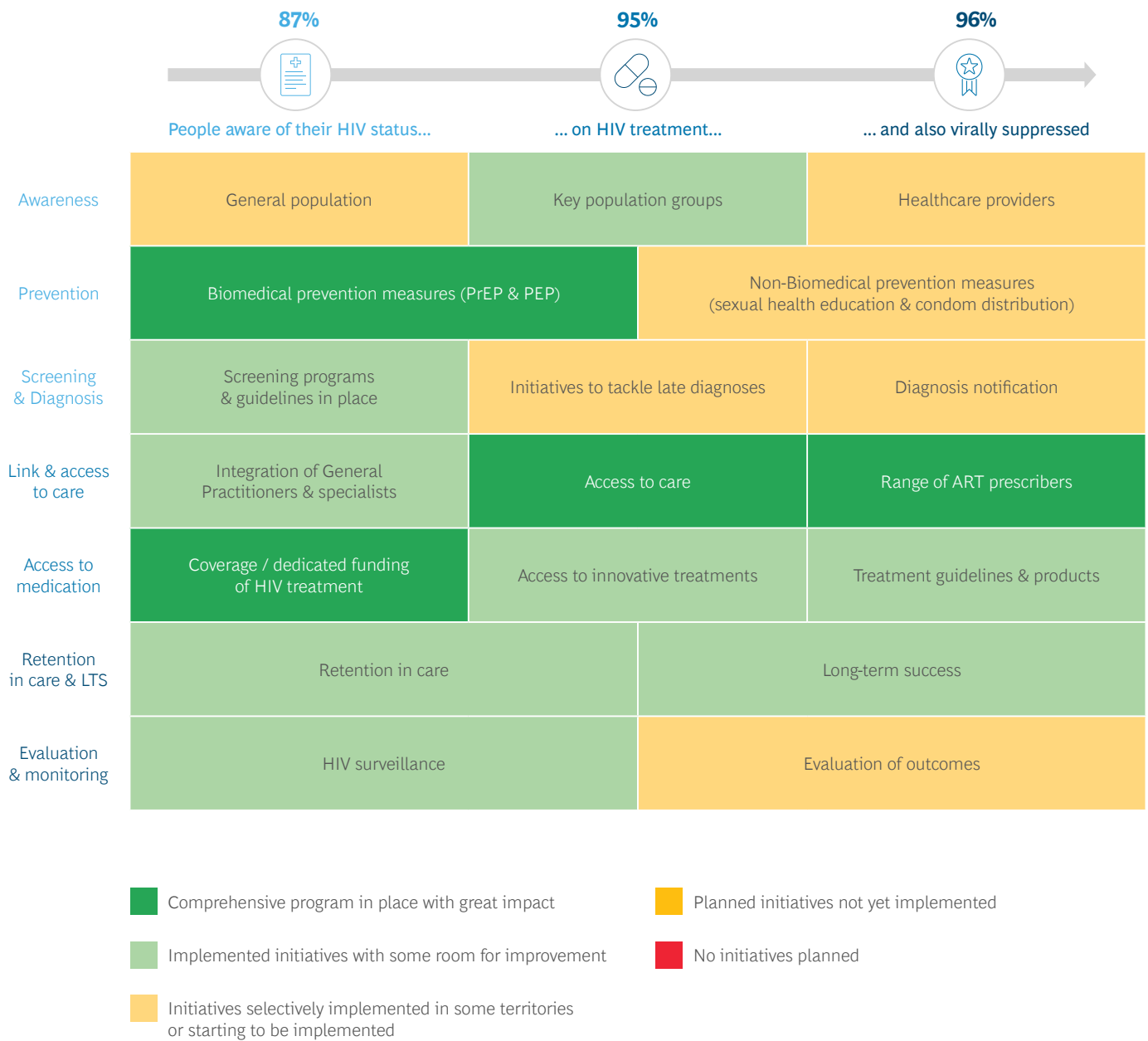
- Lack of initiatives to tackle late presenters, as an opt-in approach prevents a broader view of the diagnosis situation and an early adoption of treatments.
- Rapid start not implemented in a systematic way, potentially leading to patients not retained in care after diagnosis.

Considering current state of progress in France, the immediate focus should be on 4 interventions:


- Opt-out approach in EDs to tackle late diagnoses and destigmatize HIV testing.
- System support to enable GPs to identify individuals requiring HIV testing and reduce missed diagnostic opportunities.
- Defined guidelines to encourage rapid initiation of treatment.
- Tracing models to identify patients lost in care and re-engage them into care.

5. Source: interviews with local stakeholders and primary research.

**Figure 6 - France's country scorecard** (performance status, policy & initiatives implemented)



# Good practices & opportunities for improvement

	 <b>Good practices</b>	 <b>Opportunities for improvement</b>
 <b>Awareness</b>	<ul style="list-style-type: none"> <li>✓ National Sexual Health Strategy framework (2017-2030)</li> <li>✓ Awareness campaigns among the general populations and key populations</li> </ul>	<ul style="list-style-type: none"> <li>! Stigma and discrimination still a key challenge among general population</li> <li>! Low awareness among HCPs beyond ID specialists</li> </ul>
 <b>Prevention</b>	<ul style="list-style-type: none"> <li>✓ PrEP widely available, with generic options covered by NHS</li> <li>✓ PrEP prescribed by ID specialists &amp; GPs</li> <li>✓ Uptake of PrEP well above EU4 + UK average</li> <li>✓ Free condom distribution schemes</li> </ul>	<ul style="list-style-type: none"> <li>! Sexual health education objectives not well implemented</li> <li>! Challenges in access to PrEP in underserved populations, e.g., migrants, people who exchange sex for commodities, women</li> </ul>
 <b>Screening &amp; Diagnosis</b>	<ul style="list-style-type: none"> <li>✓ HIV screening mandatory or recommended in several situations</li> <li>✓ +23,500 centres for HIV screening</li> </ul>	<ul style="list-style-type: none"> <li>! Only 87% of individuals aware of their status</li> <li>! ~57.2% late diagnoses,</li> <li>! Flaws in diagnosis announcement, stigma and opt-in as main barriers</li> </ul>
 <b>Link &amp; access to care</b>	<ul style="list-style-type: none"> <li>✓ Well-established navigation referral platform</li> <li>✓ Treatment services available at multiple hospitals across France</li> <li>✓ GPs able to renew ART prescription (beyond ID specialists)</li> </ul>	<ul style="list-style-type: none"> <li>! Immediate ART start not systematically implemented, but short time between link to care and treatment initiation</li> </ul>
 <b>Access to medication</b>	<ul style="list-style-type: none"> <li>✓ European treatment guidelines followed</li> <li>✓ 95.4% diagnosed patients on ART</li> <li>✓ Free access to ART for everyone</li> <li>✓ Convenient ART dispensing efforts</li> <li>✓ Short registration &amp; reimbursement processes</li> </ul>	<ul style="list-style-type: none"> <li>! Use of innovative (patented) ART is only 31% of total doses of ART</li> <li>! Limited knowledge and stigma as barriers</li> </ul>
 <b>Retention in care &amp; LTS</b>	<ul style="list-style-type: none"> <li>✓ 95.2% HIV+ achieved viral load suppression</li> <li>✓ National guidelines for long-term care</li> </ul>	<ul style="list-style-type: none"> <li>! Quality of life not considered in the National Plan</li> </ul>
 <b>Evaluation &amp; monitoring</b>	<ul style="list-style-type: none"> <li>✓ Nadis software with Electronic Health Records</li> <li>✓ 2 key databases with data on PLWH</li> </ul>	<ul style="list-style-type: none"> <li>! Flaws in reporting of cases (although mandatory)</li> </ul>



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# Germany<sup>6</sup>

## Executive summary

Germany has achieved significant progress in the last years, reaching two out of three 95-95-95 testing and treatment UNAIDS targets for 2025. In 2016, a national HIV strategy was approved with a focus on 5 priority areas: (1) creating an enabling environment, (2) expanding demand-oriented services, (3) integrating prevention, testing and care services, (4) promoting cross-sectoral networking and cooperation, (5) expanding knowledge base and data utilization.

Germany's main strengths are the provision of a universal and free healthcare system and a high-quality integrated care that supports patients to be retained in care.

However, there are still several challenges, specially impacting the first 95% target and the first steps of the HIV prevention and care cascade (awareness, prevention and screening & diagnosis):

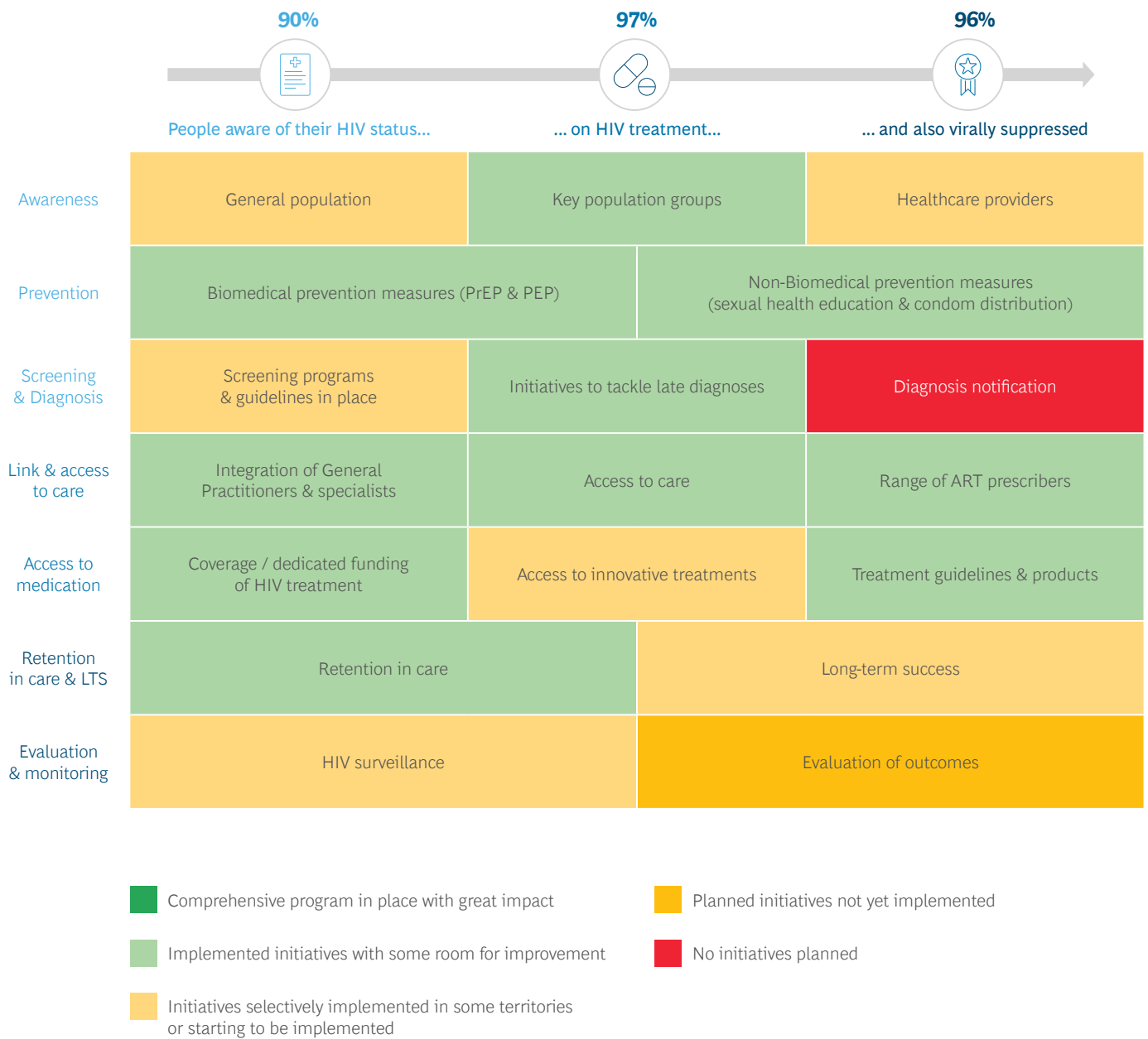
- Lack of a defined action plan – either at national or regional level – to guide the implementation of the national HIV strategy.
- Relatively high level of structural stigma in healthcare settings of non-HIV specialists, creating a barrier to increased testing rates due to fear of being discriminated.
- Uneven distribution of specialized clinics / hospitals providing PrEP or HIV treatment, with people living in rural areas having to travel long distances to access prevention or care.

Considering current state of progress in Germany, the immediate focus should be on 6 interventions:

- An action plan to implement the national HIV strategy, with detail on a national screening strategy.
- Awareness efforts for HCPs beyond HIV specialists on how to combat stigma in healthcare settings.
- Increasing the availability of HIV testing in specific settings, e.g., emergency departments, refugee shelters, prisons.
- Promotion of an innovation friendly environment to expand coverage of innovative HIV treatments by the statutory health insurances.
- Integrated and up-to-date HIV data collection system.
- Expansion of telemedicine and Electronic Health Records implementation.

6. Source: interviews with local stakeholders and primary research.

**Figure 7 - Germany's country scorecard** (performance status, policy & initiatives implemented)



# Good practices & opportunities for improvement

	 <b>Good practices</b>	 <b>Opportunities for improvement</b>
 <b>Awareness</b>	<ul style="list-style-type: none"> <li>✓ National strategy from 2016</li> <li>✓ High awareness among Gay, Bisexual, MSM &amp; trans communities</li> <li>✓ Training efforts for HCPs beyond HIV specialists to increase HIV knowledge</li> <li>✓ Some tailored campaigns for vulnerable populations</li> </ul>	<ul style="list-style-type: none"> <li>! No action plan defined (national or regional)</li> <li>! Structural stigma &amp; discrimination due to disinformation among general population</li> <li>! Limited awareness initiatives for prisoners &amp; migrants</li> </ul>
 <b>Prevention</b>	<ul style="list-style-type: none"> <li>✓ PrEP widely available, with generic options covered by NHS</li> <li>✓ PrEP guidelines with eligibility criteria &amp; dispensation options</li> <li>✓ Several community-based checkpoints across Germany</li> <li>✓ High availability of free or affordable condoms</li> <li>✓ High range of “safer use” programs</li> </ul>	<ul style="list-style-type: none"> <li>! Sexual health education varies across regions, with some resistance from parents, educators or community groups</li> <li>! Penetration of PrEP well below the EU4+UK average</li> <li>! Lack of sufficient PrEP prescribers and uneven distribution of clinics</li> </ul>
 <b>Screening &amp; Diagnosis</b>	<ul style="list-style-type: none"> <li>✓ HIV screening recommended in several situations</li> <li>✓ Multiple settings offering HIV testing, aggregating to 450+ centres</li> </ul>	<ul style="list-style-type: none"> <li>! 90.4% aware of their status</li> <li>! ~61% late diagnoses, of which 55% had CD4 &lt; 200 cells</li> <li>! Stigma, uneven distribution of testing centres &amp; low HIV knowledge by HCPs</li> <li>! No guidelines for HCPs beyond HIV specialists on the process &amp; resources to inform patients about test results</li> </ul>
 <b>Link &amp; access to care</b>	<ul style="list-style-type: none"> <li>✓ High quality of HIV care, with treatment services available at clinics for free</li> <li>✓ Guidelines recommending ART start as soon as possible</li> </ul>	<ul style="list-style-type: none"> <li>! Uneven geographical distribution of treatment centres / clinics</li> <li>! Shortages in the number of trained &amp; qualified HIV specialists, with ageing physicians and lack of next generation of qualified HIV specialist</li> <li>! No formal referral guidelines</li> </ul>
 <b>Access to medication</b>	<ul style="list-style-type: none"> <li>✓ 96.3% diagnosed patient on ART</li> <li>✓ Free ART for almost everyone (incl. legal residency status, temporary residence permit)</li> <li>✓ Some ART dispensation efforts</li> <li>✓ Fast access to innovation</li> <li>✓ Reg and Price &amp; reimbursement processes not a barrier</li> </ul>	<ul style="list-style-type: none"> <li>! Use of innovative (patented) ART is only 42% of total doses of ART</li> </ul>
 <b>Retention in care &amp; LTS</b>	<ul style="list-style-type: none"> <li>✓ 96.4% patients viral suppressed</li> <li>✓ Telemedicine and digital health available (although usage is limited)</li> <li>✓ High-quality of HIV care supporting retention in care</li> </ul>	<ul style="list-style-type: none"> <li>! National HIV strategy not addressing QoL or long-term care, although it is a core issue for HCPs</li> </ul>
 <b>Evaluation &amp; monitoring</b>	<ul style="list-style-type: none"> <li>✓ HIV case reporting compulsory</li> </ul>	<ul style="list-style-type: none"> <li>! National HIV monitoring and evaluation of patient outcomes with room for improvement (lack of national HIV cohort)</li> </ul>







## Italy<sup>7</sup>

### Executive summary

Italy has achieved relevant progress in the last few years on managing the HIV epidemic, particularly on engaging PLWH in treatment and retaining individuals into care to achieve viral suppression). In 2019, a national plan was approved focused on four key objectives: (1) promote combined prevention, (2) facilitate access to test and ensure a rapid linkage to care, (3) ensure universal access to care and support the retention of diagnosed and treated patients, and (4) improve the state of health and well-being of PLWH.

The key strength of Italy's healthcare system is the universal provision of free HIV care services and treatment.

However, Italy still faces some challenges that should be addressed in order to achieve the global targets, specifically on awareness, prevention, diagnosis and linkage to care:

- Structural stigma and discrimination as a result of low awareness of the general population and misinformation among HCPs beyond Infectious Disease specialists, leading to low diagnosis rates and high rates of late presenters (~63% of new diagnosis in 2021).
- Scarce institutional effort for non-biomedical prevention measures, such as sexual health education or condom distribution schemes.
- Limited type and number of HCPs providing ART, with only ID specialists as ART prescribers.

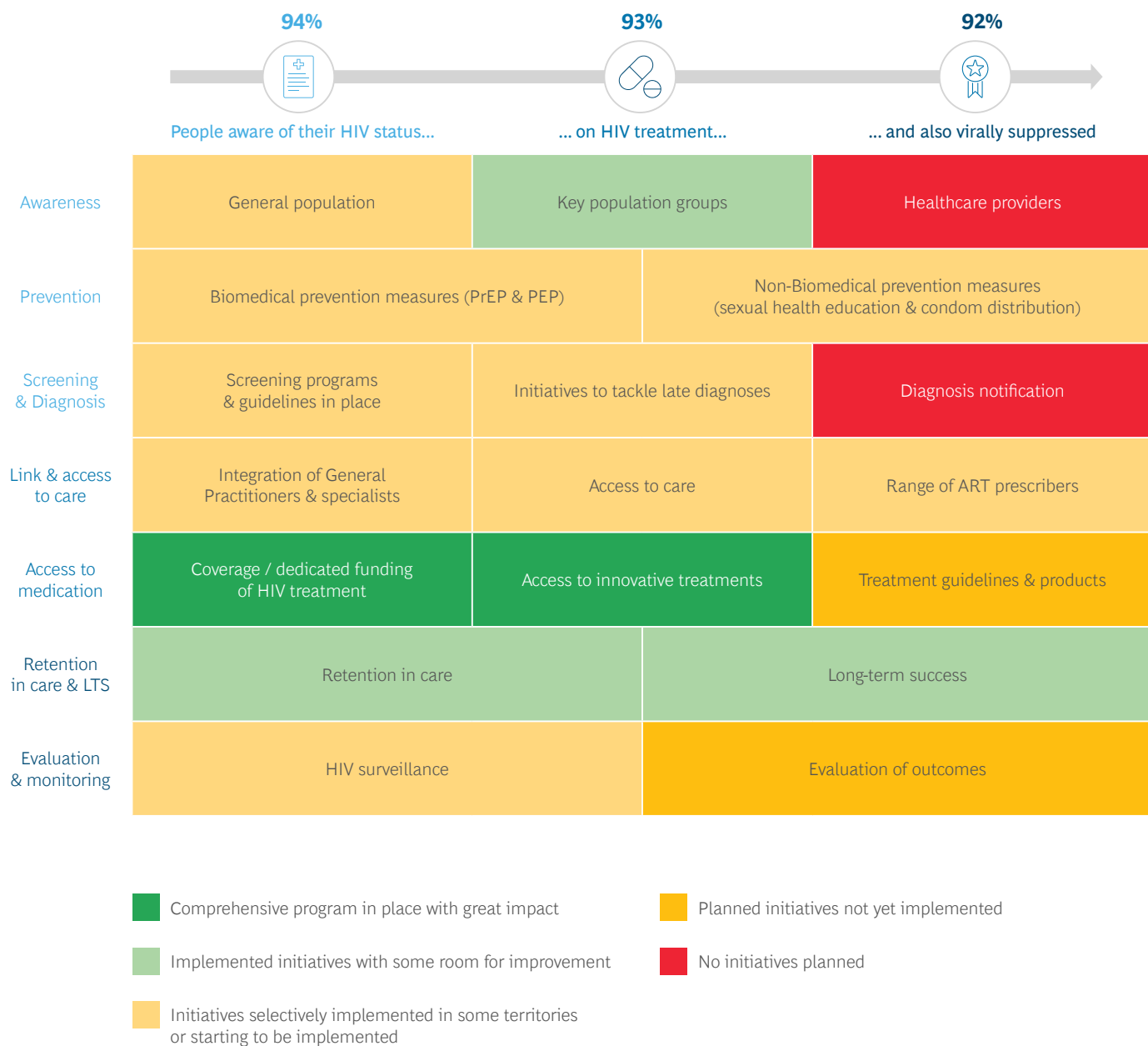
Also, uptake of PrEP is unknown, as generic PrEP has only started to be reimbursed by the National Health System since April 2023 for key population groups.

Considering current state of progress in Italy, the immediate focus should be on 7 interventions:

- Awareness campaigns for the younger population based on direct communication (e.g., social media).
- Training for HCPs beyond ID specialists on HIV to combat stigma and discrimination.
- Compulsory sexual education at schools and condom distribution schemes widely available.
- Opt-out approach to tackle late diagnoses.
- Formal referral system to engage PLWH in care.
- Decentralized HIV care delivery to ensure retention in care.
- HRQoL ambition to ensure long term success and definition of PROMs and PREMs to direct efforts.

7. Source: interviews with local stakeholders and primary research.

**Figure 8 - Italy's country scorecard** (performance status, policy & initiatives implemented)



# Good practices & opportunities for improvement

	 <b>Good practices</b>	 <b>Opportunities for improvement</b>
 <b>Awareness</b>	<ul style="list-style-type: none"> <li>✓ National plan updated in 2019</li> <li>✓ High awareness among key populations</li> </ul>	<ul style="list-style-type: none"> <li>! Structural stigma among general population</li> <li>! Misinformation among HCP besides ID specialists</li> <li>! Limited awareness campaigns for undocumented migrants</li> </ul>
 <b>Prevention</b>	<ul style="list-style-type: none"> <li>✓ 8 HIV checkpoints to foster prevention</li> <li>✓ PrEP &amp; PEP widely available &amp; generic versions reimbursed</li> </ul>	<ul style="list-style-type: none"> <li>! Sexual health education not compulsory in schools</li> <li>! Prescription of PrEP only by ID specialist</li> </ul>
 <b>Screening &amp; Diagnosis</b>	<ul style="list-style-type: none"> <li>✓ HIV screening mandatory or recommended in several situations</li> <li>✓ 546 centres for HIV screening</li> <li>✓ Initiatives to guide GPs with potential HIV+ cases</li> <li>✓ Diag. announcement including ID specialist &amp; counselling</li> <li>✓ 94% of PLWH aware of their status</li> </ul>	<ul style="list-style-type: none"> <li>! ~63 % late diagnoses</li> <li>! Stigma and opt-in approach as main barriers</li> </ul>
 <b>Link &amp; access to care</b>	<ul style="list-style-type: none"> <li>✓ Free treatment services</li> </ul>	<ul style="list-style-type: none"> <li>! Referral systems not structured</li> <li>! Only ID specialist prescribing ART</li> <li>! Number of ID specialists &amp; long waiting list as main barriers</li> <li>! ART initiation usually takes days/weeks</li> </ul>
 <b>Access to medication</b>	<ul style="list-style-type: none"> <li>✓ 93% diagnosed patients on ART</li> <li>✓ Free access to ART for everyone</li> <li>✓ Fast-track designation for innovative ART</li> </ul>	<ul style="list-style-type: none"> <li>! HIV treatment guidelines updated in 2017</li> <li>! Inequities in access to innovative ART across regions</li> <li>! ART dispensed only at hospital pharmacies</li> <li>! Use of innovative (patented) ART is only 35% of total doses of ART</li> </ul>
 <b>Retention in care &amp; LTS</b>	<ul style="list-style-type: none"> <li>✓ 92% people virally suppressed</li> <li>✓ Lobbying to introduce a 95% target on quality of life</li> <li>✓ Peer support program in place</li> </ul>	<ul style="list-style-type: none"> <li>! Drug reimbursement decisions not considering impact on QoL</li> </ul>
 <b>Evaluation &amp; monitoring</b>		<ul style="list-style-type: none"> <li>! Flaws in data collection &amp; exploitation</li> <li>! New cases reporting is not automated yet</li> </ul>





# Japan<sup>8</sup>

## Executive summary

Japan has achieved some progress in the last years, reaching two out of three 95-95-95 testing and treatment UNAIDS targets, but it is still lagging behind on the first target in 2025, with only 85.6% of people aware of their HIV status. In 2018, a national HIV plan was approved with focus on 4 priority areas: (i) increase general awareness of prevention measures, (ii) enhance testing and consultation systems, (iii) raise general knowledge on early detection and appropriate treatment to prevent the onset of AIDS, and (iv) position health care centres as the core of the previous measures.

Japan's main strengths are on access to medication, with updated HIV treatment guidelines (2023) and a friendly environment to innovative HIV therapies, and on evaluation & monitoring, with up-to-date HIV surveillance and multidisciplinary teams to ensure QoL and long-term care of people living with HIV.

However, there are still several challenges, mainly impacting UNAIDS' first 95% target and the first steps of the HIV prevention and care cascade (awareness, prevention and screening & diagnosis):

- PrEP is not approved in Japan yet, being one of the only high-income countries without this prevention measure in place, despite national studies demonstrating its efficacy.
- Still relatively high level of structural stigma and discrimination from the general population, with PLWH having a real fear of job loss due to no laws forbidding discrimination against PLWH.

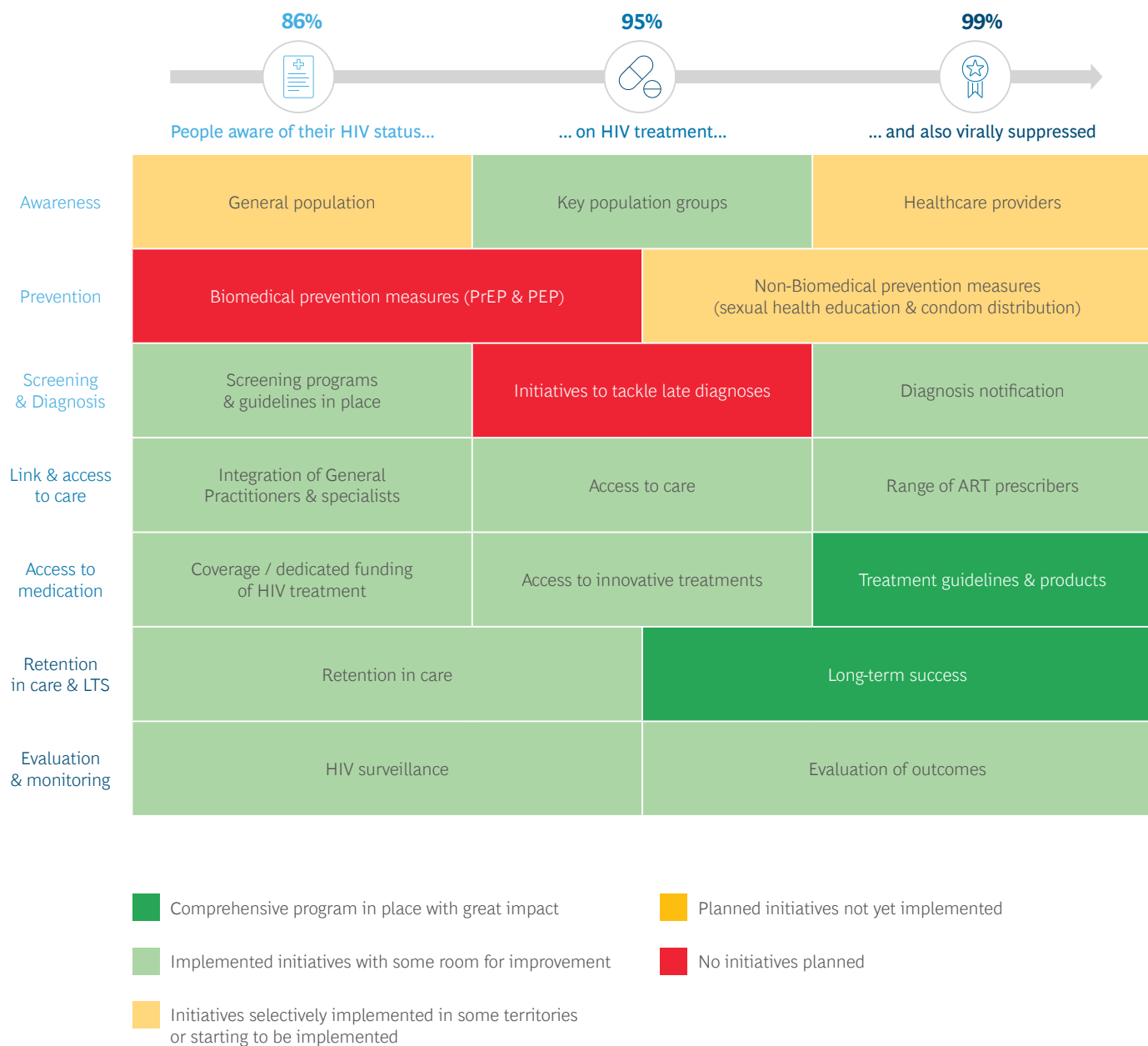
- Limited testing options, with most diagnosis being carried out in person in public health centres, which leads to low diagnosis rates and high rates of late diagnosis (73% of diagnosis with CD4 count < 350 cells/mm<sup>3</sup> due to stigma and low awareness among HCPs).
- Rapid ART implementation not widely implemented, with 78 days median between diagnosis and treatment start.

Considering current state of progress in Japan, the immediate focus should be on 6 interventions:










- Awareness on PrEP, by working with medical patient associations to foster PrEP implementation.
- Self-testing as a screening method to combat stigma.
- System support to enable a wider range of HCPs to identify individuals requiring HIV testing.
- National guidelines and directives to encourage rapid initiation of treatment.
- Decentralized HIV care delivery to ensure retention in care.
- Standardized measurement of HRQoL data across hospitals, including PROMs and PREMs, in order to ensure long term HIV care.

8. Source: interviews with local stakeholders and primary research.

Figure 9 - Japan's country scorecard (performance status, policy & initiatives implemented)



# Good practices & opportunities for improvement

	 <b>Good practices</b>	 <b>Opportunities for improvement</b>
 <b>Awareness</b>	<ul style="list-style-type: none"> <li>✓ Very low burden, rate &lt;1 case per 100k population in 2021</li> <li>✓ Multiple nationwide and prefecture campaigns, especially on testing information and focused on MSM</li> </ul>	<ul style="list-style-type: none"> <li>! National Plan on prevention of HIV last updated 2018 (not including PrEP approval)</li> <li>! Low level of awareness among general population, leading to stigma &amp; discrimination</li> <li>! Limited HIV knowledge among HCPs due to low HIV prevalence</li> </ul>
 <b>Prevention</b>	<ul style="list-style-type: none"> <li>✓ Compulsory sexual education at schools</li> <li>✓ Condom distribution schemes for key populations backed by community centres</li> </ul>	<ul style="list-style-type: none"> <li>! PrEP not approved yet, imported by some physicians to MSM (out-of-pocket)</li> <li>! PEP approved, only covered for occupational purposes</li> <li>! Misinformation about condoms, understood as a contraceptive measure rather than STI prevention</li> </ul>
 <b>Screening &amp; Diagnosis</b>	<ul style="list-style-type: none"> <li>✓ HIV testing recommended in several situations</li> <li>✓ HIV screening available through 660 centres</li> <li>✓ Defined guidelines for HIV+ announcement to reduce stigma and empower individuals' engagement</li> </ul>	<ul style="list-style-type: none"> <li>! Only 85.6% of PLWH aware of their status</li> <li>! ~73% diagnoses are late presenters, of which 71% had CD4 &lt; 200 cells/mm<sup>3</sup> (AIDS)</li> <li>! COVID 19 and stigma as main barriers</li> </ul>
 <b>Link &amp; access to care</b>	<ul style="list-style-type: none"> <li>✓ Well-established informal referral process (but no national protocols to follow-up referral within different regions)</li> <li>✓ Over 300 centres for HIV care</li> <li>✓ Any doctor allowed to treat PLWH and prescribe ART</li> </ul>	<ul style="list-style-type: none"> <li>! Rapid treatment start not implemented, with median 78 days, mainly due to the process to qualify for additional subsidies for ART, including:                             <ul style="list-style-type: none"> <li>- 2 CD4 and viral load tests at two timepoints 30 days apart</li> <li>- CD4 &lt; 500 cells/mm<sup>3</sup></li> <li>- Viral load over 5,000 copies/mL</li> </ul> </li> </ul>
 <b>Access to medication</b>	<ul style="list-style-type: none"> <li>✓ Updated HIV treatment guidelines (2023)</li> <li>✓ 94.5% diagnosed patients on ART</li> <li>✓ Convenient ART dispensing efforts</li> <li>✓ 63% uptake of innovative treatments</li> <li>✓ Fast Registration processors of new drugs</li> </ul>	<ul style="list-style-type: none"> <li>! High number of patients delay the start of treatment due to increased coverage for advanced HIV cases</li> </ul>
 <b>Retention in care &amp; LTS</b>	<ul style="list-style-type: none"> <li>✓ 99.6% patients with viral load suppression</li> <li>✓ Multidisciplinary teams to ensure QoL and long-term care</li> </ul>	
 <b>Evaluation &amp; monitoring</b>	<ul style="list-style-type: none"> <li>✓ Reporting of new diagnosis compulsory &amp; stored in a national database</li> <li>✓ Treatment guidelines encourage CD4 count monitoring quarterly</li> </ul>	<ul style="list-style-type: none"> <li>! KPIs &amp; milestones towards 2030 goals not clearly outlined</li> </ul>







# Spain<sup>9</sup>

## Executive summary

Spain is on the right track to reach the UNAIDS goals and has already achieved the second 2025 target on people living with HIV on treatment (96.6% of people living with HIV aware of their status). It has approved a comprehensive national plan in 2021 focused on four objectives: (1) promoting combined prevention, (2) early diagnoses, (3) early treatment and chronic HIV management, and (4) improving QoL of PLWH.

The main strength of the country is the healthcare system itself, which is free and accessible for everyone (including both services provided and prevention & care treatment).

However, there is still some work to do, especially on awareness & prevention and evaluation & monitoring. Four main challenges should be addressed:

- Low level of awareness and knowledge of the general population and HCPs, which results in stigma and discrimination, improvable diagnosis rates and high percentage of late presenters (currently ~50% of new diagnosis, which negatively affects HIV global results).
- Low uptake of PrEP, mainly driven by scarce resources (creating long waiting lists) and limitations in PrEP dispensation.
- Lack of an integral health approach (besides some big hospitals), which results in lower quality of life of people living with HIV and limited ageing and co-morbidity management.

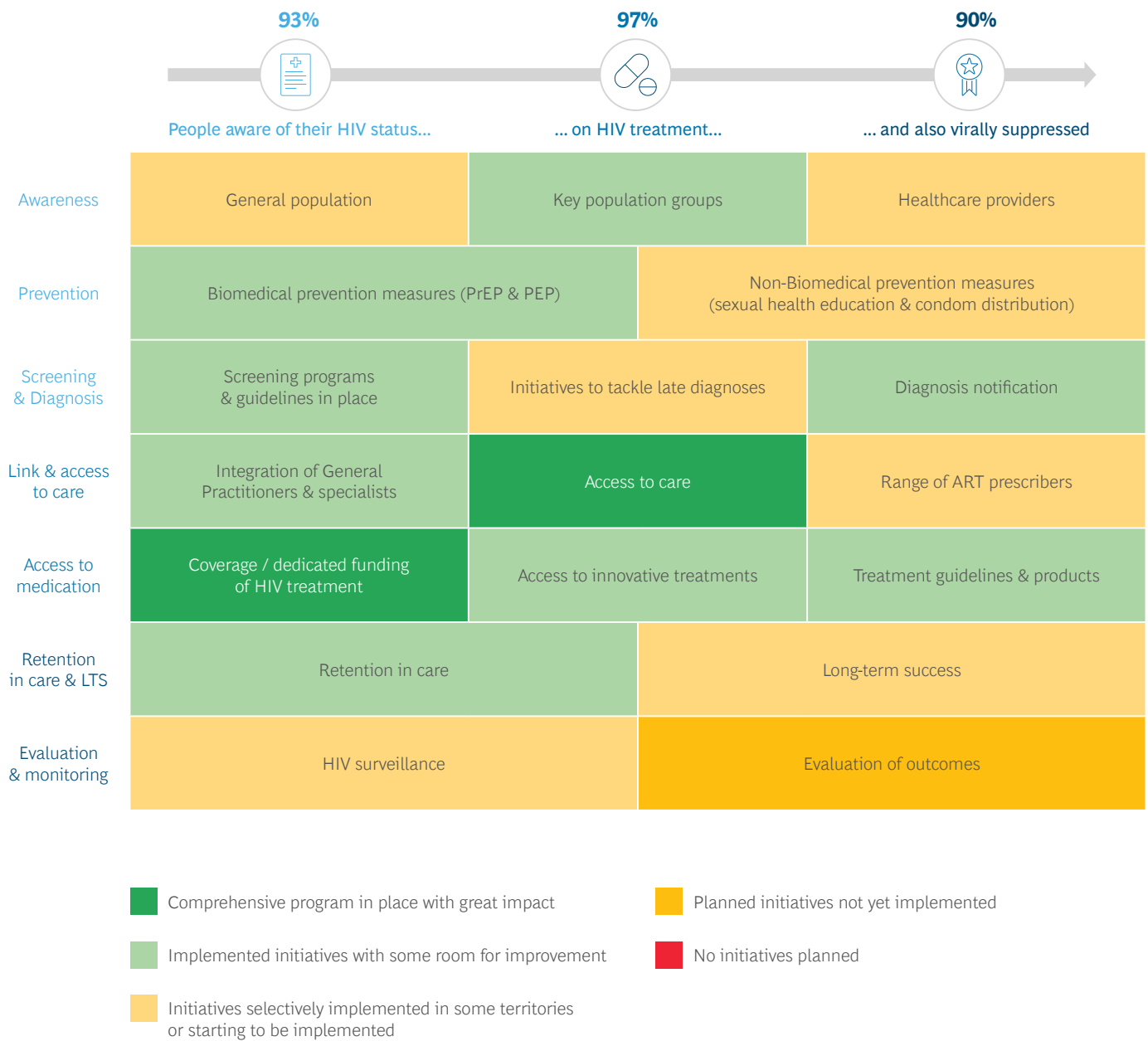
- Inadequate reporting and evaluation of outcomes, due to lack of integrated and automated information systems among regions, resulting in people lost in care and uncomprehensive efforts.

Considering current state of progress in Spain, the immediate focus should be on 7 interventions:








- Training for HCPs beyond ID specialists to combat stigma and discrimination and better identify a test request.
- Wider range of PrEP / PEP prescribers in order to make it more easily available and boost uptake.
- Opt-out approach in Emergency Departments to tackle late diagnoses.
- Formal referral system to engage PLWH in care.
- Decentralized HIV care delivery to ensure retention in care.
- HRQoL ambition to ensure long term success and definition of PROMs and PREMs to direct efforts.
- Integrated HIV data collection system, with breakdown by key populations, & exploitation of data to direct efforts on awareness, retention, etc.

9. Source: interviews with local stakeholders and primary research.

**Figure 10 - Spain's country scorecard** (performance status, policy & initiatives implemented)



# Good practices & opportunities for improvement

	 <b>Good practices</b>	 <b>Opportunities for improvement</b>
 <b>Awareness</b>	<ul style="list-style-type: none"> <li>✓ National Plan on HIV &amp; STI Prevention &amp; Control</li> <li>✓ Some campaigns on awareness initiatives at regional and local level focused on some key population groups (Gay, Bisexual and MSM)</li> </ul>	<ul style="list-style-type: none"> <li>! Structural stigma &amp; discrimination mainly due to disinformation among general population</li> <li>! Low awareness efforts among HCPs and some population groups (e.g., undocumented migrants, PWUD &amp; chemsex users)</li> </ul>
 <b>Prevention</b>	<ul style="list-style-type: none"> <li>✓ PrEP widely available, with generic options covered by NHS for key populations</li> <li>✓ PrEP usage is systematically monitored across regions</li> <li>✓ Condom distribution schemes consistently implemented across regions</li> </ul>	<ul style="list-style-type: none"> <li>! Sexual health education efforts are scarce, with only a few regions including it in schools as voluntary</li> <li>! Penetration of PrEP is well below the EU4 + UK average due to access limitations</li> </ul>
 <b>Screening &amp; Diagnosis</b>	<ul style="list-style-type: none"> <li>✓ HIV screening is mandatory in 3 situations (blood donations, transplants &amp; assisted reproductive treatments) &amp; recommended in several cases</li> <li>✓ 475 testing centres across the country</li> <li>✓ 92.5% know their status, suggesting Spain is on track to reach 2030 goals</li> </ul>	<ul style="list-style-type: none"> <li>! ~50% diagnoses are late presenters</li> <li>! Stigma, access to effective screening &amp; waiting lists are the main barriers preventing population from testing</li> <li>! Room for improvement in healthcare settings on the process &amp; resources to inform patients about positive test results</li> </ul>
 <b>Link &amp; access to care</b>	<ul style="list-style-type: none"> <li>✓ Some regional initiatives to refer patients from Primary Care to specialty care</li> <li>✓ Treatment services available at hospitals for free</li> </ul>	<ul style="list-style-type: none"> <li>! Uneven geographical distribution of treatment centres / clinics</li> <li>! Limited number of trained &amp; qualified ID specialists &amp; inadequate structure of ID departments</li> <li>! Narrow range of ART prescribers</li> <li>! Immediate treatment start not implemented across the board</li> </ul>
 <b>Access to medication</b>	<ul style="list-style-type: none"> <li>✓ Updated HIV treatment guidelines</li> <li>✓ 96.6% diagnosed patients on ART</li> <li>✓ Free access to ART for everyone with legal residency status</li> <li>✓ Convenient ART dispensation efforts</li> </ul>	<ul style="list-style-type: none"> <li>! Long Registration and Price Reimbursement processes to ensure availability and access to new drugs</li> <li>! Use of innovative (patented) ART is only 36% of total doses of ART</li> </ul>
 <b>Retention in care &amp; LTS</b>	<ul style="list-style-type: none"> <li>✓ 90.4% of people living with HIV virally suppressed</li> <li>✓ Virtual consultations available and recommended based on patient's profile</li> </ul>	<ul style="list-style-type: none"> <li>! Limited resources to ensure QoL and long-term care (e.g., insufficient personnel)</li> </ul>
 <b>Evaluation &amp; monitoring</b>	<ul style="list-style-type: none"> <li>✓ Ministry of Health is committed to HIV outcomes</li> </ul>	<ul style="list-style-type: none"> <li>! Data collection and exploitation with several flaws (e.g., lack of connection among regional databases)</li> <li>! New cases reporting is not automated</li> </ul>



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# United Kingdom<sup>10</sup>

## Executive summary

Within the UK, prevalence of HIV is concentrated in England, (>90% of people living with HIV), which has already hit the three 95-95-95 UNAIDS goals. England has a defined national action plan published in 2021 focused on four objectives: (1) ensuring equitable access and uptake of HIV prevention programs, (2) scaling up HIV testing, (3) optimizing rapid access to treatment and retention in care, and (4) improving quality of life of people living with HIV.

The UK has contributed to the progress in global HIV targets, building on four key strengths:

- Good awareness and use of PrEP among gay and bisexual men.
- Screening & diagnosis with a range of testing options available (incl. systematic testing in some EDs), low rates of undiagnosed infection and most people starting treatment within 90 days.
- HIV treatment as part of the national healthcare system that is free at the point of access regardless of residency status.
- High quality HIV surveillance data, with several data-driven tools to focus prevention & care efforts.

However, there are still some engrained challenges that should be addressed, especially on awareness and evaluation & monitoring of progress:

- There are variable and often low levels of HIV knowledge and awareness in the general population; knowledge is low among HCPs that do not specialize in HIV, sexual health or infectious diseases.

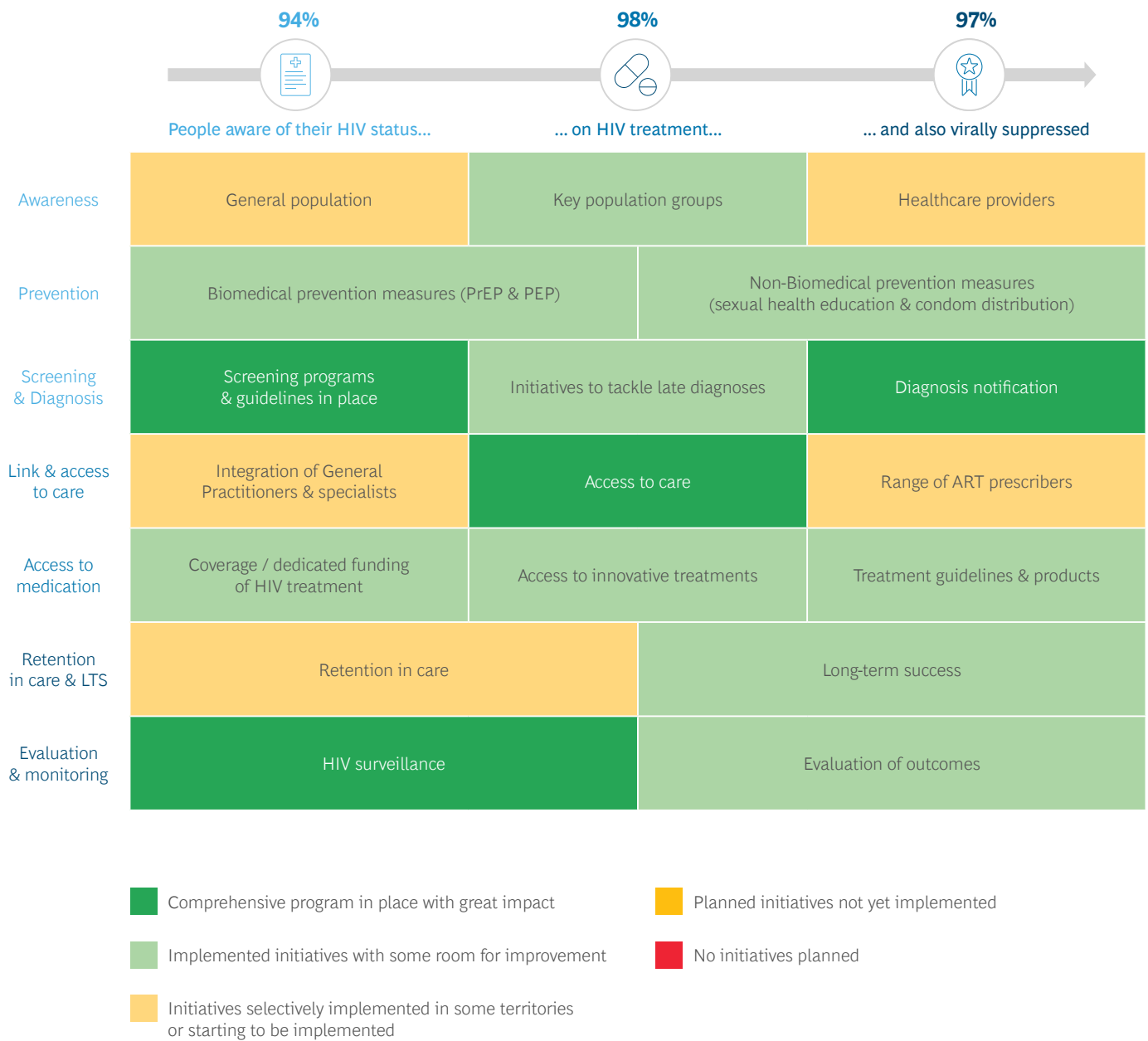
- Despite high usage of PrEP among some communities of gay and bisexual men there is very low coverage in other populations such as heterosexual men and women, as well as trans communities.
- There can be time delays in accessing newer treatments as there are multiple barriers to access, meaning that not all people are able to benefit from the most advanced technologies.
- High number of people living with HIV not in care (4k – 18K) in England, as well as just under 1,000 in Scotland, approximately 15% of all people living with HIV.
- Addressing stigma and supporting improvements in quality of life are not sufficiently prioritized or resourced nationally or in local decision making.

Considering current state of progress across the UK, the immediate focus should be on 6 interventions:

- Promotion and expansion of training on HIV for HCPs beyond HIV, sexual health or ID specialists to combat stigma and discrimination and improve diagnosis rates.
- Additional PrEP delivery options to improve equity of access to PrEP.
- Opt-out ED testing approach expanded to all hospitals in areas of high HIV prevalence.
- Integration of clinical and peer support services for everyone living with HIV.
- Access to innovative treatments for everyone living with HIV.
- National commitment to support and fund programs to re-engage those not in care back into the health system.

<sup>10</sup>. Source: interviews with local stakeholders and primary research.

**Figure 11 - UK's country scorecard** (performance status, policy & initiatives implemented)<sup>11</sup>



11. Most of the assessment is based on England action plan and initiatives implemented.

# Good practices & opportunities for improvement

	 <b>Good practices</b>	 <b>Opportunities for improvement</b>
 <b>Awareness</b>	<ul style="list-style-type: none"> <li>✓ Comprehensive national Plans on HIV</li> <li>✓ Several campaigns on awareness initiatives at national or local level focused on gay, bisexual and other MSM</li> <li>✓ Specific training to increase awareness and knowledge on HIV among HCPs</li> </ul>	<ul style="list-style-type: none"> <li>! Stigma is still deeply entrenched (~83% of PLWH often face negative judgement from others in society)</li> <li>! Low awareness among some key populations (e.g., Black Caribbeans, Migrants, Non-white gay, bisexual and MSM)</li> </ul>
 <b>Prevention</b>	<ul style="list-style-type: none"> <li>✓ Some non-biological prevention efforts in place, including statutory sexual education in schools and free condom distribution schemes</li> <li>✓ PrEP available and free in all UK</li> <li>✓ Coverage of PrEP is slightly higher than EU4+UK average</li> </ul>	<ul style="list-style-type: none"> <li>! Low levels of PrEP knowledge and awareness outside of MSM populations</li> <li>! Systemic barriers to accessing PrEP include restrictive eligibility criteria and lack of provider awareness of different populations who may benefit from PrEP</li> <li>! Missed opportunities to introduce PrEP (not everyone who could benefit is identified in SHS and not everyone who could benefit is offered PrEP)</li> </ul>
 <b>Screening &amp; Diagnosis</b>	<ul style="list-style-type: none"> <li>✓ HIV screening is free and recommended in a number of health settings</li> <li>✓ Wide range of settings offering HIV tests such as GP Texting for Testing in Wales</li> <li>✓ 95% aware of their status in the UK, due to implemented initiatives such as HIV Testing week</li> <li>✓ Opt-out testing in EDs of very high prevalent areas</li> </ul>	<ul style="list-style-type: none"> <li>! Missed opportunities for testing</li> <li>! Although a positive diagnosis should come with psychological support, this is not happening in all SHS clinics</li> <li>! Proportion of people being diagnosed late increasing over time, from 36% in 2015-2017 to 43% in 2020-2022 period</li> </ul>
 <b>Link &amp; access to care</b>	<ul style="list-style-type: none"> <li>✓ Specialist HIV care services available for free through NHS centres</li> <li>✓ Peer support offered in selected locations (with some geographical variations)</li> <li>✓ Great progress in speeding up linkage to care (with differences across HC setting)</li> </ul>	<ul style="list-style-type: none"> <li>! Geographical distribution of treatment centres / clinics requires some patients to travel far &amp; can contribute to patients disengaging from care</li> <li>! Limited capacity, limited peer support options and narrow opening hours for HIV appointments</li> </ul>
 <b>Access to medication</b>	<ul style="list-style-type: none"> <li>✓ Guidelines including the whole HIV care cascade for PLWH</li> <li>✓ 98% HIV+ aware of their status on ART</li> <li>✓ Free access to ART for everyone</li> <li>✓ ART home delivery in place for stable patients</li> <li>✓ Fast Registration process to ensure availability &amp; access to new drugs in UK</li> </ul>	<ul style="list-style-type: none"> <li>! Several limiting factors to access innovative treatments (e.g., cost driven tender and prescribing framework)</li> <li>! Use of innovative (patented) ART is only 36% of total doses of ART</li> </ul>
 <b>Retention in care &amp; LTS</b>	<ul style="list-style-type: none"> <li>✓ 97% of people living with HIV with viral load results are virally suppressed</li> <li>✓ National plan states improvement on QoL as one of its key goals</li> </ul>	<ul style="list-style-type: none"> <li>! Retention in care, a major challenge to reach 2030 goals</li> <li>! Limited integrated health services for PLWH with comorbidities</li> </ul>
 <b>Evaluation &amp; monitoring</b>	<ul style="list-style-type: none"> <li>✓ HIV surveillance data &amp; several data-driven tools to focus efforts</li> <li>✓ Reporting of data from HIV services after diagnoses is very high (despite being voluntary)</li> </ul>	<ul style="list-style-type: none"> <li>! Monitoring and evaluation of outcomes to measure progress, such as PROMs with room for improvement</li> </ul>







## USA<sup>12</sup>

### Executive summary

The US has made progress on ending the HIV epidemic despite challenges associated with the complexity and fragmentation of the US healthcare system, characterized by a variety of public and private payers and state-based policies and initiatives. By the end of 2021, there were approximately 1.2 million people living with HIV, with a noteworthy 23% decrease in annual new diagnoses since the introduction of the National HIV/AIDS Strategy (NHAS) in 2010. The NHAS 2022-2025 aims to: (1) prevent new HIV infections, (2) enhance HIV-related outcomes for PLWH, (3) reduce HIV-related health disparities, and (4) achieve a cohesive approach to address the HIV epidemic.

Given this context, the main strengths of the US HIV response include (1) a national policy recommending routine testing and an opt-out approach, (2) comprehensive HIV surveillance systems collecting population specific data used for targeted programming, and (3) the Ryan White HIV/AIDS Program (RWHAP) providing funding for a patient-centred care model encompassing clinical & non-clinical services for low-income individuals living with HIV.

However, fragmentation in programs / policies across states and local jurisdictions, including social safety net gaps, continue to present challenges along the HIV prevention and care cascade that need to be addressed to further progress on UNAIDS' 95-95-95 targets – in particular:

- Dwindling HCP capacity due to decreasing number of ID and HIV specialists, and lack of provider literacy among non-ID and HIV specialists on HIV (including PrEP).

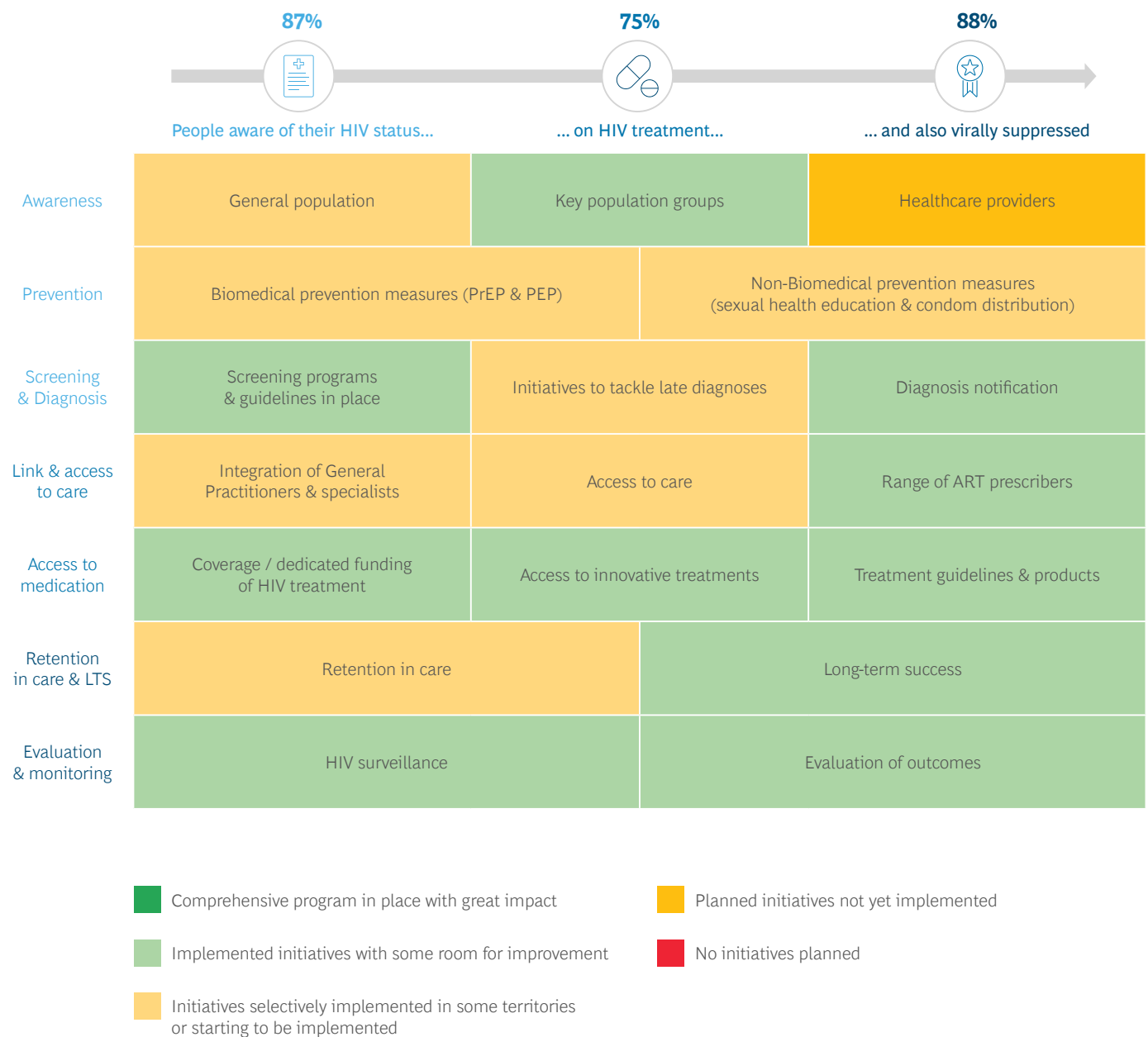
- Stigma and social determinants of health presenting barriers to (1) accessing HIV prevention, treatment and care, and (2) ensuring retention in care.
- Low uptake of PrEP, with only 30% of adoption nationwide.

Considering the current state of progress in the US, the immediate focus should be on 6 key interventions, supported and co-led by community-based organizations:

- Increasing HIV literacy among underserved key populations, communities and among HCPs on HIV to support HIV prevention & screening (e.g., U=U).
- Expanding decentralized access to PrEP and PEP to increase uptake (e.g., primary care centres, sexual health clinics, telemedicine, OB/GYN).
- Increasing HIV testing in a wide range of settings to increase diagnosis rates, e.g., community-based testing, EDs, self-testing, harm reduction settings, etc.
- Expanding Rapid Start & Restart programs to expedite and improve linkage & engagement in care.
- Ensuring open access and patient/provider choice for innovative HIV medicines and limiting barriers such as prior authorization and step therapy.
- Extending multidisciplinary and holistic models of care for PLWH, including mental health services, case management etc., to improve QoL and long-term health of people aging with HIV.

12. Source: interviews with local stakeholders and primary research.

**Figure 12 - USA country scorecard** (performance status, policy & initiatives implemented)<sup>13</sup>



13. The US does not collect data on UNAIDS’ goals 2 and 3. Instead, the US measures progress along the HIV care continuum based on four metrics: (1) % of people living with HIV with known status, (2) % of people with diagnosed HIV receiving HIV medical care – at least one CD4 or viral load test in a given year, (3) % of people with diagnosed HIV retained in care – two or more CD4 or viral load tests, performed at least, three months apart, and (4) % of people with diagnosed HIV who achieved viral load suppression – at least one viral load result available during the measurement year. US performance on 95-95-95 targets has been assessed based on calculations using metrics 1, 2 and 4, respectively.

14. Source: HIV-Related Training and Correlates of Knowledge, HIV Screening and Prescribing of nPEP and PrEP Among Primary Care Providers in Southeast United States, 2017 - PubMed (nih.gov)

# Good practices & opportunities for improvement

	✓ Good practices	! Opportunities for improvement
 Awareness	<ul style="list-style-type: none"> <li>✓ National HIV/AIDS Strategy (2022-2025)</li> <li>✓ Multiple campaigns at federal and state level to raise awareness among key populations (e.g., “I am a work of ART”, “Let’s Stop HIV Together”)</li> </ul>	<ul style="list-style-type: none"> <li>! Stigma and misinformation (e.g., self perception of risk, inaccurate information about HIV transmission) among general population</li> <li>! Low awareness among HCPs (with only 36% of GPs<sup>34</sup> having received HIV-related training) and southern states</li> </ul>
 Prevention	<ul style="list-style-type: none"> <li>✓ National recommendation for coverage of PrEP with no cost sharing for those with increased risk of HIV</li> <li>✓ Multiple PrEP &amp; PEP options available via prescription in multiple HC settings (telehealth, pharmacies)</li> <li>✓ Wide range of PrEP prescribers e.g., General Practitioners, Nurse Practitioners, Physician Assistants</li> </ul>	<ul style="list-style-type: none"> <li>! Low uptake of PrEP (only 30% adoption), driven by low awareness / lack of HIV literacy among people who may benefit from PrEP and non-HIV specialist providers, stigma and discrimination, access barriers, and out-of-pocket cost burden, with some payers not complying with federal policy</li> <li>! Sexual health education not compulsory in all states, only mandated in 39 states</li> </ul>
 Screening & Diagnosis	<ul style="list-style-type: none"> <li>✓ Routine HIV testing and opt-out approach recommended nationally</li> <li>✓ Testing is available for free or at low cost for uninsured patients</li> <li>✓ Multiple testing modalities (e.g., self testing, community-based testing) implemented</li> <li>✓ Screening &amp; testing guidelines available to HCPs</li> </ul>	<ul style="list-style-type: none"> <li>! Only 87% of PLWH aware of their status</li> <li>! Opt-out testing not widely implemented despite policy recommendations</li> <li>! Stigma, dwindling public HCP capacity &amp; medical mistrust as main barriers</li> <li>! 21% of diagnoses occur at late stage (AIDS, stage 3 with CD4 count &lt; 200 cells/mm<sup>3</sup>)</li> </ul>
 Link & access to care	<ul style="list-style-type: none"> <li>✓ Rapid start &amp; restart successfully implemented in some jurisdictions and spreading across nation</li> <li>✓ Wide range of ART prescribers e.g., General Practitioners, Nurse Practitioners, Physician Assistants</li> </ul>	<ul style="list-style-type: none"> <li>! Loss of engagement due to several factors such as:               <ul style="list-style-type: none"> <li>• Housing instability and homelessness</li> <li>• Loss/lack of healthcare coverage</li> <li>• Racial and socioeconomic disparities in access to care and treatment</li> <li>• Dwindling public HCP capacity and provider literacy</li> </ul> </li> </ul>
 Access to medication	<ul style="list-style-type: none"> <li>✓ Policies on open access to HIV medicines and patient-provider choice (e.g., Six Protected Classes policy in Medicare Part D)</li> <li>✓ Registration and Pricing &amp; Reimbursement process typically not representing a barrier to access innovative (patented) ART (59% uptake)</li> <li>✓ Multiple ART dispensing methods, (e.g., mail-order pharmacies, home delivery)</li> </ul>	<ul style="list-style-type: none"> <li>! Only 75% of diagnosed people are receiving treatment</li> <li>! Only 88% of people living with HIV on treatment are virally suppressed</li> <li>! Insurance barriers (prior authorization, step therapy, out-of-pocket cost), lack of transportation, housing instability, racism and medical mistrust as main barriers to access medication</li> </ul>
 Retention in care & LTS	<ul style="list-style-type: none"> <li>✓ NHAS including initiatives to improve QoL for people aging with HIV</li> <li>✓ Funding for patient-centred comprehensive care model that includes support for both clinical and non-clinical services (e.g., RWHAP)</li> </ul>	<ul style="list-style-type: none"> <li>! 46% of patients diagnosed lost in care after treatment initiation</li> </ul>
 Evaluation & monitoring	<ul style="list-style-type: none"> <li>✓ Reporting of new HIV cases is mandatory</li> <li>✓ Population-specific HIV data collected to evaluate disparities and outcomes, e.g., NHSS for trends in diagnosis &amp; care</li> <li>✓ Tracing models implemented to improve retention in care (e.g., RWHAP)</li> </ul>	<ul style="list-style-type: none"> <li>! Inconsistent reporting of new HIV case-related data across states</li> <li>! Data reporting often not timely and with appropriate granularity to take action (leading to US progress rarely being included in the global progress of ending the HIV epidemic)</li> </ul>



# Best practices along the prevention and care cascade to EHE

## Introduction

Achieving global UNAIDS' 2025-2030 targets and WHO 2022-2023 strategy in our collective efforts to end the HIV epidemic requires countries to develop, fund and implement robust HIV strategies tailored to their progress to date, the communities with remaining disparities and key population groups they need to address, and the characteristics of their HC delivery system.

This chapter outlines the **key recommendations** along the HIV prevention and care cascade that, independent to the status and specificities of each country, any government or health system could adapt to its individual context to move forward in ending the HIV epidemic.

The set of recommendations are **informed by the best** practices identified among countries in scope. We selected 10 case studies from various countries that have implemented innovative initiatives to progress HIV prevention and care. The case studies illustrate how countries have been successful at implementing those initiatives adapted to the progress made so far and their healthcare delivery systems and are focused on underserved populations.

### **AWARENESS**

Stigma and discrimination still represent key challenges to end the HIV epidemic across many high-income countries. HIV-related stigma should be tackled from scratch, starting from the first step of the HIV prevention & care cascade: **awareness.**

# Figure 13 - Global recommendations to end the HIV epidemic

	Key initiatives	Recommendations & learnings	Best practices
Awareness	<ul style="list-style-type: none"> <li>Awareness campaigns for key populations</li> <li>Training and education for HCPs beyond ID specialist on key topics</li> </ul>	<ul style="list-style-type: none"> <li>Focus efforts on underserved populations to increase their level of awareness on prevention measures and HIV testing</li> <li>Increase HIV knowledge across healthcare providers beyond ID specialists to reduce stigma in healthcare settings and provide a better care service</li> </ul>	 <p>Your health, your faith, a faith-based Project</p>  <p>Can't Pass it On! Training for HCPs on U=U</p>
Prevention	<ul style="list-style-type: none"> <li>Statutory sexual education at schools</li> <li>Condom distribution schemes widely available</li> <li>Universal access to PrEP / PEP, with a wider range of PrEP / PEP prescribers</li> </ul>	<ul style="list-style-type: none"> <li>Expand sexual health education at schools to reduce risky behaviors</li> <li>Promote condom distribution to new young generations to provide the tools for preventive measures</li> <li>Improve access to PrEP &amp; PEP to reduce HIV transmission and overcome barriers to boost uptake</li> </ul>	 <p>Barcelona Checkpoint</p>  <p>"FORMAPREP", online training for GPs</p>
Screening & Diagnosis	<ul style="list-style-type: none"> <li>Systematic opt-out testing in specific settings</li> <li>Self-testing &amp; self-sampling</li> <li>Targeted screening in Primary Care</li> </ul>	<ul style="list-style-type: none"> <li>Intensify opt-out approaches selectively to diagnose underserved populations</li> <li>Implement home delivery self-testing to overcome access barriers to HIV testing centers</li> <li>Leverage eHealth records to flag individuals requiring HIV testing in order to reach underserved populations in Primary Care</li> </ul>	 <p>Emergency department Opt-out testing</p>
Link & access to care	<ul style="list-style-type: none"> <li>Rapid referral to an HIV specialist</li> <li>Rapid treatment initiation</li> </ul>	<ul style="list-style-type: none"> <li>Reduce time between diagnosis and first appointment to increase number of people linked to care</li> <li>Shorten time to viral suppression, increase retention in care and reduce HIV transmission</li> </ul>	 <p>GPs &amp; NPs prescribers</p>  <p>Rapid (Re-) Start program</p>
Access to medication	<ul style="list-style-type: none"> <li>Better access to innovative HIV treatments</li> <li>Decentralized access to ART</li> <li>Free ART for everyone living with HIV</li> </ul>	<ul style="list-style-type: none"> <li>Improve access to innovation to all key populations to promote adherence and enhance long-term health outcomes</li> <li>Leverage convenient forms of ART dispensation to reach underserved populations</li> <li>Expand the free provision of treatment to reduce HIV transmission levels</li> </ul>	 <p>Free ART for non-citizens ineligible for NHS</p>
Retention in care & LTS	<ul style="list-style-type: none"> <li>Decentralized HIV care delivery</li> <li>Multidisciplinary teams for long term HIV care</li> <li>Tracing models identifying people not kept in care</li> </ul>	<ul style="list-style-type: none"> <li>Decentralize HIV care services delivery to overcome access barriers and ensure retention</li> <li>Encourage collaboration among different specialties and services to improve quality of life</li> <li>Implement tracing models or approaches to identify people not kept in care and re-engage them</li> </ul>	 <p>Tracing model to re-engage individual in care</p>  <p>Ryan White HIV/AIDS program</p>
Evaluation & Monitoring	<ul style="list-style-type: none"> <li>National Health-related QoL ambition for long-term success</li> </ul>	<ul style="list-style-type: none"> <li>Promote use of PROMs and PREMs as tools to measure health-related quality of life and get data that could help focus further efforts to improve long-term care for people living with HIV</li> </ul>	 <p>Comprehensive HIV surveillance model</p>

Since the beginning of the epidemic, HIV awareness campaigns were largely focused on key populations, mainly lesbian, gay, bisexual, transexual, and queer (LGBTQ+), populations where awareness is now relatively high. However, campaigns have failed to serve several segments of the general population: underserved population (e.g., the young population, migrants) and healthcare providers.



Awareness campaigns for **key populations**



**Training and education for healthcare providers** beyond Infectious Disease specialists on key topics

HIV-related stigma has a strong negative impact on prevention and care as it is usually associated with increased risk-taking behaviour and can lead to feelings of shame, fear of disclosure, isolation and despair. **Mass communication efforts** may be used to help the general population better understand a health condition and dispel myths about how the virus is transmitted and who is at risk (1). These efforts could be materialized in different ways to effectively reach different segments of the general population, e.g.:

- Leveraging social media young influencers (e.g., YouTube, Instagram, TikTok, Twitter) to directly communicate with young people (2)
- Using public figures to promote and normalize recurrent testing (3)
- Integrating HIV in cultural manifestations (e.g., TV shows, literature, music) (4)

For campaigns addressing **young people**, selecting a well-thought communicator is key, as associating the message with an individual rather than an institution is demonstrated to be more successful, according to a US study on HIV-related messages (5):

- HIV-related tweets from individuals had 77% greater odds of being engaged with than tweets for institutions
- For each additional year in user's estimated age, the odds of a tweet being engaged with fell by 8%
- Each additional 100 followers that a user had was associated with a 0.5% increase in the chance of their tweet being engaged with



When the level of awareness among general population is already high, efforts should be focused on **underserved key populations (e.g., indigenous or aboriginal)**.

Several key success factors identified when launching awareness efforts among indigenous population, that could be extrapolated to any ethnicity or niche population group not well-addressed in a country:

- Campaigns should be **designed by peers from those ethnicities** to increase the probability that the message goes through & is effective
- Both the **HIV prevention and care cascade and HIV biomedical approaches should be adapted** to ensure they are flexible enough to incorporate the holistic Indigenous approach of well-being, which includes spiritual, emotional and mental health as well as physical health (6)

Examples of countries following this approach:



Additionally, **healthcare providers** are supposed to have a higher level of awareness and HIV knowledge, and they should make both people living with HIV and individuals at risk feel comfortable and accepted in healthcare settings. Stigma in health facilities and providers undermines diagnosis, treatment and successful health outcomes (7). Based on a survey on HIV-related stigma in healthcare settings in Germany, 8% of respondents reported being refused healthcare or elements of healthcare on the basis of their HIV status and, in relation to dental care, the proportion was as high as 16% (8). Training and education of healthcare providers should be a priority, both to raise awareness of stigma and discrimination within healthcare settings, and to help combat the underlying attitudes that give rise to it (9).

Some of the key topics that should be covered in HIV trainings for healthcare providers should be:

- **Undetectable = Untransmittable (10)**. WHO issued in 2022 new guidelines where it is stated that successful ART with viral suppression prevents HIV transmission to sexual partners: there is no transmission when viral load is undetectable or suppressed (less than or equal to 1000 copies/ML) (11)
- **Pre-exposure prophylaxis (PrEP) and post-exposure prophylaxis (PEP)**
- **Communication skills** to interact with individuals on HIV-risk behaviours.
- **HIV, mental health issues and other comorbidities.**

# YOUR HEALTH, YOUR FAITH, A FAITH-BASED PROJECT

## KEY POPULATION



African faith-based communities

## LOCATION



Germany



## PURPOSE

Communicate HIV-related messages in a culturally sensitive manner within their communities

## WHAT IT IS SOLVING

- High stigma and discrimination
- Limited information on prevention services
- Low awareness and knowledge of HIV
- Cultural and language barriers

## WHAT IS THE MODEL ABOUT?

Multilingual faith-related events to reach African-faith communities with the aim of addressing stigmatization and enhancing prevention towards HIV



## POINTS OF CONTACT



Churches



## STAKEHOLDERS

- National AIDS Services Organization
- African Communities
- African pastors
- Local AIDS service organizations (ASOs)

## HOW DOES IT WORK?



Concept workshops with key stakeholders (e.g., African pastors) and doctors to define prevention contents / messages, methods and forms of cooperation, summarized in a booklet



Mobile educational theatre plays to facilitate communication about taboo subjects such as HIV/AIDS



Preaching that links HIV prevention messages with relevant passages of the Bible, linked to debates with ASOs and public health authorities to raise awareness and reduce stigma



Mobile training series on HIV/AIDS supported by doctors to increase knowledge of African pastors

## KEY MESSAGES

Get tested! HIV Test can save lives

If you are sick: take pills and pray!

Love your neighbor as yourself!

## IMPACT

Established a successful model to reach a culturally and linguistically diverse group and increase their HIV awareness and knowledge, and reduce stigma

~5,000

People reached from 2016 to 2018

20-25

Multilingual events per year

8

Cities involved: Bremen, Essen, Cologne, Saarbrücken, Berlin, Dortmund, Hamburg & Magdeburg



# "CAN'T PASS IT ON", TRAINING FOR HCPs ON U=U

KEY POPULATION



Healthcare providers

LOCATION



United Kingdom



## PURPOSE

Train HCPs about U=U, providing scientific evidence, to raise awareness and to dismantle stigma

## WHAT IT IS SOLVING

- Poor HIV knowledge among non-HIV specialists HCPs
- Low awareness of U=U among HCPs
- HCPs reluctance to discuss U=U with their HIV positive patients
- Limited knowledge of HCP on how to interact with PLWH

## WHAT IS THE MODEL ABOUT?

Free self-directed e-learning resource for HCPs (accessible to anyone), providing scientific evidence to substantiate that PLWH with an undetectable viral load can't pass the virus on to sexual partners



## RESOURCES

- Terrence Higgins Trust
- Educational grant via pharma company
- Ireland Fellowship Program



## Canada

CATIE (Canada's source for HIV and HCV information) also developed, with support from Terrence Higgins Trust, a U=U guide for healthcare providers

## HOW DOES IT WORK?



## WHO?

Anyone can access the training for free at the Terrence Higgins Trust website - although training is aimed at HCPs or person working with people living with HIV



## WHAT?

Multiple learning materials developed by HIV experts:

- ▶ PowerPoint presentations
- ▶ Case studies
- ▶ Downloadable posters & leaflets
- ▶ Background research
- ▶ Activities to earn required professional development goals
- ▶ Webinars
- ▶ Modules to train other HCPs

"It covers all the main learning objectives in a clear and concise way. I went away feeling very informed and confident in my knowledge, knowing the scientific research backing up the information."

General Practitioner receiving training

## IMPACT

# 225

Quizzes completed by HCPs or people accessing the training in the first 6 months of the program

# 4,603

Website visits in the first 6 months of the program

Increased HIV knowledge (U=U) among HCPs through a free online learning program





## PREVENTION

It is commonly understood among HIV stakeholders that to reduce new infections, it is imperative to intensify combination prevention (12). As set out by UNAIDS, 95% of people at risk of HIV should have access to and use appropriate, prioritized, person-centred and effective combination prevention options. Combination prevention is defined by rights-, evidence-, and community-based programs that promote a combination of biomedical, behavioural, and structural interventions designed to meet the HIV prevention needs of specific people and communities (13). Although all three types of interventions should be implemented – ideally simultaneously –, our key recommendations are behavioural and biomedical interventions, which, in any case, should be adapted to country religions, beliefs, or cultural behaviours.



**Universal access to PrEP**, with a wide range of prescribers



**Condom distribution schemes** widely available



Compulsory **sexual education** at schools

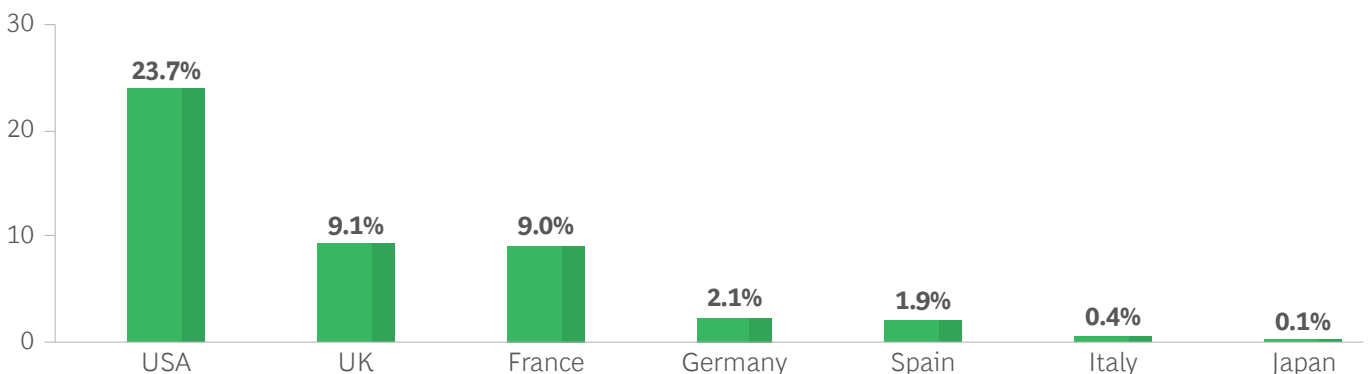
A key biomedical intervention to reduce incidence of HIV is the **usage of biomedical solutions such as PrEP**. For example, the Centers for Disease Control and Prevention in the US estimated that successful expansion of PrEP access, in combination with other interventions, can be expected to prevent as many as 1 in 5 new HIV infections each year (14). However, currently, uptake of PrEP is <25% of those who would benefit from PrEP (according to the eligibility criteria from each country) in high-income countries (Figure 14), suggesting there is room for additional interventions to further implement PrEP as prevention measure.

To improve the health outcomes of people at risk, access and uptake to PrEP should be equitable among all population groups, which does not seem to be the case in most countries. For instance, a survey to physicians prescribing PrEP in France assessed the main barriers encountered to prescribe PrEP to migrant population, e.g., difficulty in following people who started PrEP, lack of knowledge of this method of prevention by this group or language barriers. A suggested intervention to overcome these barriers would be to partner with community-led associations who can more easily reach this population group (15).

PrEP should not only be recommended for the obvious public health reasons, which would be avoiding further new diagnoses of HIV, but also because it has been demonstrated to be cost saving for countries in the long-term. A study by IrsiCaixa in the region of Catalonia, Spain, estimates that cost savings are realized after 14-16 years

### Figure 14 - Uptake of PrEP in high-income countries, 2021

**Uptake of PrEP 2021** (% of people who would benefit from PrEP)



Source: DRG Clarivate

(depending on the discount rate); and after 40 years, 81 million € are saved globally – 93.8 million € saved from a healthcare perspective minus 12.8 million € of additional savings for patients, due to avoided work absences and savings on transport costs (17).

Considering both medical and social costs (incl. work absences and transport costs associated with required medical appointments), **PrEP costs are notably lower than costs associated with HIV treatment for a single individual:** during first year of treatment, PrEP costs are ~20% of HIV treatment costs (1,776.56€ vs. 8,936€) and approximately ~23% (1,772.72€ vs. 7,628.22€) on the following years in the absence of any adverse event (Figure 15). Additionally, PrEP might not be used for the entire lifetime as HIV medication would need to be (16).

However, the full potential of PrEP is still to be realized. Although the total number of people using PrEP has increased more than 10x from 2019 (233,000) to 2022 (2.6 million), all regions are far behind the 2025 PrEP target of reaching 10 million users worldwide in less than 3 years (12).

Two initiatives have proven to increase the uptake of PrEP:

**1**

**Broaden the range of PrEP prescribers** to general practitioners, other specialists beyond Infectious Disease specialists, nurse practitioners or even pharmacists in order to reduce saturation & waiting lists among Infectious Disease specialists

Examples of countries following this approach:



**2**

**Increase dispensing or delivery options beyond hospital pharmacy,** making PrEP available at...

 **Community-based centers** (e.g., Barcelona checkpoint)

 **Community pharmacies**

 **Mobile clinics** (18)




 **Home delivery,** through personal importation (19)

... and **extend cadence of supplies** (e.g., up to 6 months supply) to increase access and reduce social costs

It is unanimously accepted that **condom distribution** schemes are highly effective to prevent HIV, and further promotion should be implemented globally to increase their use, especially among young people. This initiative should go hand in hand with sexual health education, as new generations of young people are lacking adequate information about condoms and access to them (12). Additionally, lubricants should be available alongside condoms, particularly for men who have sex with men, as they are central to avoid condom breakage (19).

**Sexual health education** is the most relevant behavioral intervention and should be tackled from a clinical perspective instead of the traditional way of addressing sexual education from a values' perspective. Adopting a clinical perspective would allow sexual education to be statutorily and uniformly implemented in schools and further promoted by local institutions (e.g., though activities carried out in civic centers). This position would not only provide young people with the necessary tools and information to understand how HIV, and other sexually transmitted infections, are transmitted and could be prevented, but also help destigmatize people living with HIV.

**Figure 15 - Cost comparison of PrEP and ART in Spain**

Costs	Time	PrEP	HIV Tx
 <b>Medical costs</b>	First year	1,433.84€	8,534€
	Onwards	1,419€	7,451.42€
 <b>Social costs</b>	First year	353.72€	402€ or 482.40€
	Onwards	353.72€	176.80€
 <b>Total</b>	First year	1,776.56€	8,936€ / 9,016.4€
	Onwards	1,772.72€	7,628.22€

# BARCELONA CHECKPOINT

## KEY POPULATION



Gay, bisexual, MSM & transgender women

## LOCATION



Barcelona, Spain



## PURPOSE

Virtual elimination of HIV among gay, bisexual, MSM & transgender women, through early diagnosis and treatment, PrEP and facilitated care & support services

## WHAT IT IS SOLVING

- Fear of stigma in traditional HC settings
- Narrow HIV information
- Insufficient support services in traditional HC settings
- Limited resources to test for HIV
- Saturated access to PrEP in traditional HC settings

## WHAT IS THE MODEL ABOUT?

Community sexual health clinic:

- providing free of charge prevention and supporting services entirely run by a team of peers
- collaborating in national and international research projects



## HUMAN RESOURCES



Multi-disciplinary team of 14 (physicians, psych., nurses)



12 service facilitators



6 Administrative staff (incl. communication)



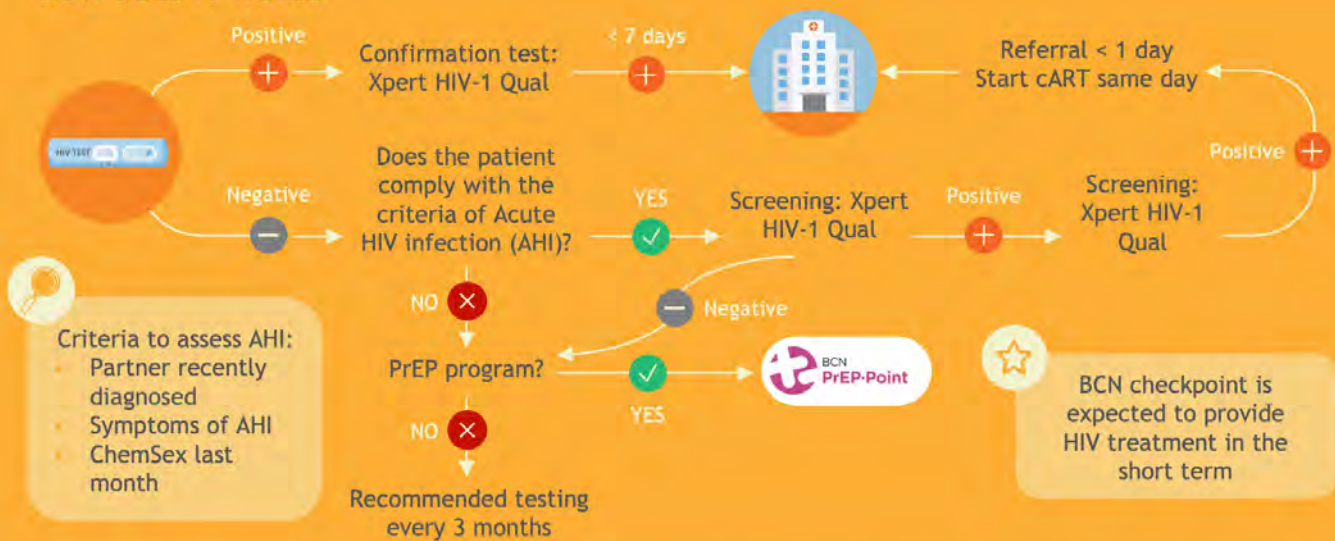
3 in Management Team



## FINANCIAL RESOURCES

- Public funds (government of Catalonia)
- Private donations (from individuals, pharmaceutical companies, EU funded projects)

## HOW DOES IT WORK?



## IMPACT



Community intervention model certified by WHO, UNAIDS and ECDC

**~18k** Tests performed annually

**83%** Lower HIV incidence in a decade - when comparing 2020-2021 cohort (0.7% HIV incidence) vs. 2009-2011 (4.2%)

**~90%** Direct referral to an HIV unit through an appointment hospital

**4.75** Average days to directly refer the newly diagnosed individual to an HIV unit

Source: <https://www.bcncheckpoint.com/>

**Reduced rate of late presenters, broadened access to PrEP and improved support & counselling services**

## Research projects

### MISTRAL

EU-funded Project on the relationship between the gut microbiota and HIV

*Crossing Countries, Crossing Communities (4C)*

EU funded Project seeking to strengthen community-based organizations to scale-up best practices that protect people most at risk from HIV, STIs & viral hepatitis (specifically, migrants)



# "FORMAPREP", ONLINE PREP TRAINING FOR GPs

## KEY POPULATION



General Practitioners & other HCPs

## LOCATION



France



## PURPOSE

Increase level of awareness and knowledge on PrEP to boost uptake among potential PrEP users

## WHAT IT IS SOLVING

- Limited knowledge on PrEP by General Practitioners and other HCPs beyond Infectious Disease specialists
- Low uptake of PrEP

## WHAT IS THE MODEL ABOUT?

Certified online training on PrEP launched in 2021 aimed at general practitioners, who are allowed to initiate PrEP prescription since June 2021 - before that, general practitioners were allowed only to renew prescription



## ORGANIZATIONS INVOLVED

- ✓ Led by the French Society for the Fight against AIDS (SFLS)...
- ✓ ... in collaboration with other organizations (FormaVIH, College de la Medicine General, AIDES, Societe Française de Dermatologie and Trt 5 CHV)



## Australia

Training on HIV PrEP for Primary Care Providers, with focus on screening for PrEP eligibility, how to prescribe it and monitoring patients on PrEP

## HOW DOES IT WORK?

MODULS



### HIV Epidemiology & PrEP rationale

- Key population who would benefit from PrEP
- Approach for national & regional implementation of PrEP in 2019
- Scientific rationale for PrEP
- Epidemiological results of combination prevention programs



### Prevention of HIV and STIs

- Biomedical strategies for combined HIV prevention
- Recommendations of HIV testing
- First-line diagnostic and therapeutic management of an STI in a person using PrEP



### PrEP in practice

- Indications of PrEP
- Initial consultation and initial assessment
- Administration schedules
- Primary prescription
- Clinical and biological follow-up of PrEP



### Sexual Health

- Indications of PrEP
- Initial consultation and initial assessment
- Administration schedules
- Primary prescription
- Clinical and biological follow-up of PrEP



Certified training



Online



-1h modules



Ongoing update of modules

## IMPACT

~80k

Prescriptions initiated or renewed by General Practitioners between July 2021 and June 2022

39%

Increase in uptake of PrEP from the 2021 (1st semester) to 2022 (2nd semester)

3k+

Regular learners per year

2.3k+

Hours of online training per year

Broadened access to PrEP and enhanced provision of HIV services by General Practitioners



## SCREENING & DIAGNOSIS

Despite the progress achieved in the last decade on increasing diagnosis rates (86% in 2022 vs. 71% in 2015 (12)), in 2022 an estimated 5.5 million people living with HIV still do not know their status, highlighting a refractory problem with late diagnosis, who are not being met with the current programs. Thus, the focus of screening efforts should not only be generally increasing diagnosis rates, but also reducing the consistently high rate of late diagnosis in most countries (e.g., in Europe the rate of late diagnosis has been stagnant at ~50% during recent years (20)).

Stigma is one driver of late diagnosis, with several studies demonstrating correlation between perceived HIV stigma and delayed testing (21)– e.g., people living with HIV who perceived high stigma were about 3 times more likely to be diagnosed late than those who did not perceive HIV stigma (22). In Germany, for instance, 28% of people participating in the people living with HIV stigma index survey (n=101) reported that their patient file was marked specially, and still 26% reported the avoidance of physical contact by non-HIV-related healthcare providers (n=95) (23). However, late diagnosis might also be a consequence of limited testing settings and insufficient or ineffective awareness efforts to increase HIV knowledge and other socioeconomic factors, such as financial instability or education (24).

The challenge of low diagnosis rate and late diagnosis should be addressed for three reasons:

- From the individual’s perspective, early diagnosis significantly increases the chance of better health outcomes and is key to successful treatment.
- From a community perspective, it limits onwards HIV transmission, as people who are diagnosed and on successful treatment cannot pass HIV to their partners.
- From an economic perspective, financial benefits for the health system arise by keeping people living with HIV healthy and reducing the likelihood of further HIV transmission. Calculations made by the Elton John AIDS Foundation suggest that cost savings amount to an estimated £220,000 per person – based on £140,000 for the costs of treating people with advanced HIV and £80,000 avoided by reduced onward transmission (25).

Three initiatives are recommended to address this gap:



**Systematic output testing in specific settings**



**Self-testing or self-sampling**



**Targeted screening** (e.g., e-health record flagging in PCPs or CBO testing campaigns)

The first approach would be **systematic opt-out testing approach** in specific settings where there is a gap in HIV diagnosis. For example, England has already started implementing this initiative in Emergency Departments in the highest areas of HIV prevalence (26), with successful results in increasing the percentage of people aware of their HIV status, particularly among those disproportionately affected by a late diagnosis (including women, older people, and those from Black African communities, all groups who are less likely to access sexual health services). Although cost effectiveness of opt-out testing will vary according to several factors, including HIV prevalence in the population to be screened (27), the long-term cost savings to the NHS of an opt-out strategy might not be insignificant. The first 100 days of opt-out testing cost £2 million to the NHS but with an estimated minimum saving of £6–8 million in care costs (28).

Additionally, the US, among other countries, has also included universal opt-out HIV testing for all pregnant women early in every pregnancy, as a recommendation from the Center for Disease Control and Prevention (29). This approach is recommended to be implemented in hotspots identified by countries as a gap in early diagnosis (e.g., emergency departments, primary care centres of rural areas).

The second approach would be availability of **HIV self-testing or self-sampling**. The COVID-19 pandemic was the catalyst for a number of countries providing remote HIV testing options to keep up with the diagnosis rates. However, this initiative should stay beyond the COVID-19 emergency and be scaled-up – e.g., by including HIV self-testing kits at primary care settings and facilities where PrEP is provided for initiation, re-initiation and continuation - to overcome some barriers to access HIV testing settings. A successful implementation of self-testing is, for example, the “Together Take Me Home” project in the US, where they are distributing up to 1 million free HIV self-tests over the next 5 years. Tests can be ordered through a website by anyone who is 17 years or above, regardless of health insurance or residency status, and arrive at home in 3-5 days (30).

A third intervention would be on **testing in:**

- **Primary Care centres.** It has been acknowledged that General Practitioners might be missing opportunities to detect primary infection as a flu-like illness (31). To tackle this issue, some countries (e.g., Italy, Spain or USA) are implementing “ehealth record flagging” when some specific indicators that could be related to an HIV infection appear. The goal is to help the General Practitioners identify people living with HIV unaware of their status already in first line and recommend an HIV test.
- **Community-based settings.** While going the extra mile to end the HIV epidemic, countries need to find alternative testing initiatives to reach underserved populations. Community-based organizations should be leveraged to target those populations as they usually have a

# EMERGENCY DEPARTMENT OPT-OUT TESTING

## KEY POPULATION



General population

## LOCATION



High prevalence cities, England



## PURPOSE

Increase HIV diagnosis rates & reduce HIV transmission

## WHAT IT IS SOLVING

- People living with undiagnosed HIV
- Persistently high rates of late HIV diagnosis
- Low levels of HIV testing outside key populations and pregnant women
- People living with diagnosed HIV that aren't engaged with treatment and care services
- People declining a test when offered separately

## WHAT IS THE MODEL ABOUT?

Systematic HIV (and HBV/HCV) screening upon Emergency Department (ED) admission when a blood test is requested, unless patient opts out



## HUMAN RESOURCES

Emergency Departments (London, Brighton, Manchester, Salford & Blackpool)



## FINANCIAL RESOURCES

- £20M investment in 3 years (2022-2024)
- 33 Emergency Departments testing for HIV

## HOW DOES IT WORK?



Posters in ED about BBV<sup>1</sup> testing and how to opt out



Automatic BBV screening of all adults having blood tests unless they opt out



Automatic referral of all positive results to the relevant specialist team for follow up



HIV & Hepatitis specialist services manage all positive results



Linkage to care & re-engagement in care



Monthly site-level reporting



Data dashboard accessible to providers and stakeholders



## IMPACT

**-7%**

Proportion of all new HIV diagnosis (343 new diagnoses)

**2x**

Rate of diagnoses among people of Black ethnicity is double that of all settings (45% at EDs vs. 22% nationwide)

**-4%**

Previously diagnosed with HIV but not currently in care (209 of all positive testing in EDs in scope)

**£6-8M**

Savings in care costs for every £2M invested (estimation based on first 100 days)

Demonstrated effectiveness for identifying new cases and re-engaging people in care especially among populations with Higher rates of late diagnosis



more diverse group of workers or volunteers (incl. people living with HIV) than traditional healthcare settings, being better positioned to reach people from communities disproportionately impacted by HIV. For example, a study carried out in North Carolina suggested that community settings (e.g., concerts, health fairs or nightclubs) may be more effective sites for promoting HIV testing, identifying new positives, and for reaching African Americans than STD clinics (32).

#### LINK & ACCESS TO CARE

Rapid linkage to care and rapid ART initiation after a HIV diagnosis is crucial for two main reasons (33):

- From an individual perspective, it optimizes health outcomes.
- From a public health perspective, it increases the likelihood that the individual initiates treatment reaches viral suppression and becomes undetectable and untransmittable, thus reducing transmission rates (34)

**Rapid linkage to an HIV specialist** increases the probability that patients will engage with care. Defining a **streamlined linkage process** and **pathways that allow direct referral from testing centre to specialist care** without any intermediary steps would help decrease the time between diagnosis and link to care through, e.g.,

- **Community centres** with direct contact to hospital HIV units to schedule an appointment with the HIV specialist and avoid the administrative burden of visiting the General Practitioner to request the appointment with the HIV specialist.
- **A New role of “Referral consultant”** is appointed in each primary care centre to support newly diagnosed patients with their transfer to HIV specialists.

**Rapid ART initiation** is also key to shorten time to viral suppression, increase retention in care and reduce HIV transmission (35). A scientific study demonstrated that ART initiated within 30 days of diagnosis leads to rapid and reliable viral suppression in acute, early, and chronic HIV infection, in particular when integrase inhibitor-based regimens were used (36). Currently, WHO guidelines strongly recommend:

- Rapid initiation, i.e., within 7 days, to be offered to all people living with HIV following confirmed diagnosis and clinical assessment.
- Same day initiation based on the person’s willingness and readiness to start ART immediately, unless there are clinical reasons to delay treatment.

Although both recommendations should apply to all populations and age groups, people with advanced HIV disease should be given priority for clinical assessment and treatment initiation (37).

Several countries have already included these recommendations in their treatment guidelines. For example, the European AIDS Clinical Society recommends immediate initiation of ART in the setting of primary HIV infection or in a setting where loss to follow-up is more likely if ART is not started the same day. Likewise, the Department of Health & Human Services of the US recommends initiation immediately or as soon as possible, highlighting the importance of educating people with HIV about the benefits of ART and deploying strategies to optimize care engagement and treatment adherence (38).

#### ACCESS TO MEDICATION

**Ensuring rapid ART start for all newly diagnosed people** is key to sustaining rapid viral suppression and long-term health outcomes and thus, reducing the risk of transmission.

The effectiveness of **Treatment as Prevention (TasP)** has been well established through several observational studies and clinical trials. Ecological studies and projection models further demonstrate the substantial potential for population-level HIV prevention from expanded treatment across a wide variety of geographies, epidemic types, and populations (39).

For example, studies show that Highly Active Antiretroviral Therapy (HAART) expansion between 1996 and 2012 in British Columbia (Canada) was associated with a sustained and profound population-level decrease in morbidity, mortality and HIV transmission.

These findings support the long-term effectiveness and sustainability of HIV treatment as prevention within an adequately resourced environment with no financial barriers to diagnosis, medical care or antiretroviral drugs (40).

#### Impact of Highly Active ART expansion between 1996 and 2012 in British Columbia

- 80% Decrease in AIDS incidence
- 80% Decrease in HIV-related mortality
- 66% Decrease in new HIV diagnoses
- 1.2% Decrease in estimated HIV incidence for each increase of 100 individuals on HAART
- 1% Decrease in estimated HIV incidence for every 1% increase in the number of individuals suppressed on HAART

# ACCREDITED GPs & NPs PRESCRIBING HIV TREATMENT

KEY POPULATION



People living with HIV

LOCATION



Australia



## PURPOSE

Improve access to HIV care and Quality of Life of PLWH

## WHAT IT IS SOLVING

- Limited access to HIV treatment
- Long distances to SHS clinics
- Waiting lists for HIV specialist appointments
- Low HCPs HIV knowledge

## WHAT IS THE MODEL ABOUT?

Accredited General Practitioners (GPs) and Nurse Practitioners (NPs) with experience in care and management of PLWH able to prescribe HIV treatment



## RESOURCES

- Public investment to provide the training to GPs and NPs for free



## France

General Practitioners can prescribe PrEP since June 2021 and can renew HIV treatment, although treatment needs to be initiated by HIV specialist

## WHO CAN BE AN ACCREDITED PRESCRIBER?

1

GPs and NPs receiving \$100 Prescriber Course



**Pre-course requisite:** self-directed modules to be completed within 12 months prior to the prescribed course  
**Course:** 2-day onsite course or 4-week online course  
**Post-course assessment:** online case-based multiple-choice exam to be completed within one month of the training



**Learning objectives:**

- Understand ART initiation
- Evaluate complex factors influencing treatment decisions
- Develop a clinical management plan when on therapy
- Etc.



## Requirements to maintain accreditation

- Accrue 7 HIV CDP<sup>1</sup> points annually (by participating in HIV case conferences activities, online learnings, etc.)
- Demonstrate an established link with an experienced HIV specialist located at an HIV treatment unit in a public hospital

2

HCPs with substantial experience managing HIV/AIDS cases in general practice, teaching hospital or sexual health clinic

## IMPACT

Additional HC settings prescribing HIV treatment (besides HIV clinics or hospitals with HIV specialists), has contributed to:

- Faster access to a specialist, due to shorter waiting lists
- Higher probability of access to care, due to reduced travel distances to access an accredited General Practitioners and Nurse Practitioners, typically closer to e.g., rural areas vs. HIV specialists

## Improved service delivery and Quality of Life for people living with HIV





# RAPID (RE-) START PROGRAM

KEY POPULATION

LOCATION



People diagnosed with HIV



Some cities and jurisdictions in USA



## PURPOSE

Providing immediate ART to all HIV-diagnosed people to benefit their health.

## WHAT IT IS SOLVING

- Delay in start of HIV treatment.
- Risk of transmission due to lack of treatment.
- Inequitable care and barriers to ART.
- Suboptimal linkage to care and retention rates.
- HIV associated morbidity and mortality.

## WHAT IS THE MODEL ABOUT?

Rapid HIV treatment initiation or re-initiation (immediate start or within 7 days from diagnosis) to:

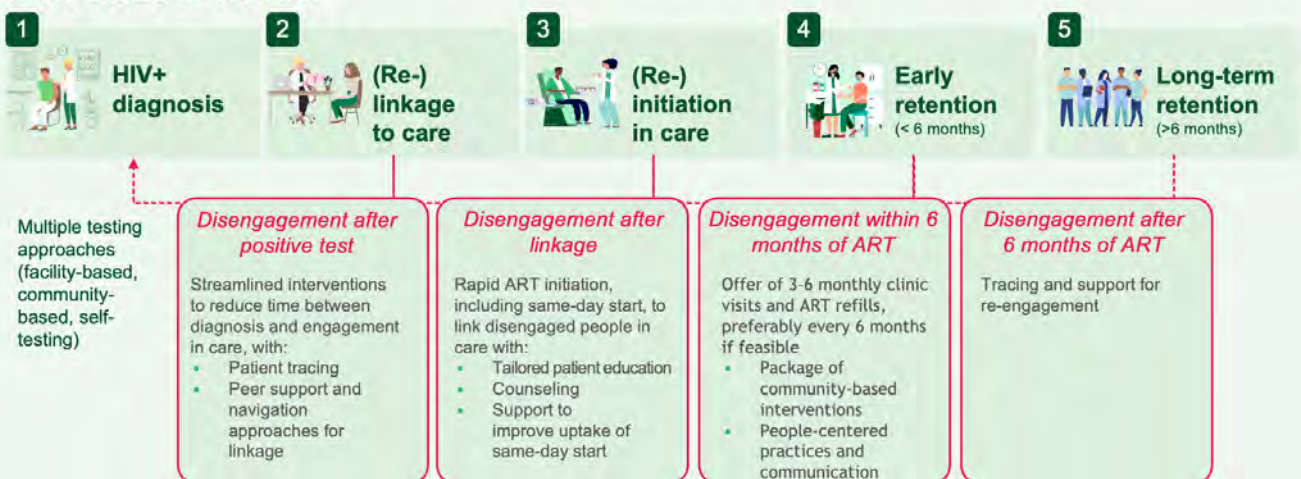
- (rapid start) support patients at risk for poor linkage to care (primarily people with high rates of homelessness, mental illness, and active substance use), including nursing, social work, and bridging to primary care.
- (rapid re-start) re-engage people living with HIV previously in care back into care to ensure healthy outcomes towards achieving viral suppression.

## PROGRAM EXPANSION



First developed in San Francisco, then expanded to other cities in California and beyond (e.g., Florida, Georgia, Louisiana, New York, Maryland, Rhode Island)

## HOW DOES IT WORK?



## Approaches to help individuals stay in care and on treatment

**Guide** individuals to identify possible barriers to reduce

**Connect** individuals with social services

Use **open-ended** questions to involve individuals in decision making

**Communicate** with individuals about importance of persistence in care



**Encourage** discussions on mental health, SUD and sexual behavior

**Strategize** with individuals to identify new goals and healthy behaviors

**Address barriers** to care from first interaction

**Support and educate** individuals about their options

## IMPACT



Reduced time required to achieve long-term success & viral load suppression



Reengagement in care, reduced inflammation and immune activation, and U=U



Ending the HIV epidemic

Given the effectiveness of treatment for reducing the transmission of HIV, it is increasingly important to consider **cost-effective ways** of further implementing TasP (39). **Three interventions** could be implemented to ensure access to treatment:



**Access to innovative HIV treatments** to promote adherence and improve long-term outcomes



**Decentralized access to ART**, through convenient forms of ART dispensation



**Free ART for everyone** living with HIV

**Innovation in ART** has proven to help increase adherence and improve long-term outcomes in people living with HIV. From an individual perspective, 28 years ago, a recently diagnosed person in their twenties was expected to live another 10 years, at most (41), while an early diagnosis today with modern ART treatment can expect a similar lifespan as people living without HIV (42).

Thus, it is essential that the healthcare systems adopt innovations quickly and consider equitable access to innovation at every stage of planning and implementation (43).

A second intervention to ensure access to treatment is to **decentralize access to ART** to promote adherence to treatment. Two initiatives could help reduce the barriers to retention in HIV care, such as long lines at public facilities, distance to healthcare settings, stigma, and inability to pay for ancillary services, testing and medical mistrust (44):

- **Extending ART dispensing intervals to 6 months** appears to result in similar retention to 3-month intervals (45). Additionally, 6-monthly dispensing is modestly saving costs for providers as well as for patients, through less time spent in accessing care and avoiding potential income losses (46). Some countries, like Ethiopia, have already started implementing this 6-month approach, which was perceived as having benefits for both clients and health systems, including perceived improvements in efficiency, quality and convenience of HIV treatment services (47).
- **Broadening the offer of locations / settings, ensuring provider access to culturally appropriate ART dispensing / care**, allows for greater flexibility. Some examples that are currently implemented are:

**Community / retail pharmacies** offering more convenient opening hours, shorter travel distances and shorter waiting times than public sector clinics or private doctors. Also, some studies indicate that intervention driven by community pharmacists have led to a boost in adherence and patients' ability to manage chronic conditions such as hypertension and asthma (48).

Some country examples



**Home delivery of ART**, leveraging postal/courier services as a feasible client-centered approach that helps expand access to care, both when access to health services is disrupted (e.g., COVID-19 pandemic) and under routine circumstances (49).

Some country examples



**Community-based distribution**, leveraging community centers to either provide HIV treatment in their settings (as some of them are already going for PrEP) or to dispense ART through their health workers or peer volunteers, who would be the liaison between pharmacies and people living with HIV.

Some country examples



A third intervention would be to provide **free ART to everyone**. Even if many national health systems offer full coverage for ART, not all of them include the entire population living in the country (e.g., non-citizens, people with irregular residence status). For example, in Germany, although ART is generally covered by the statutory health insurance, undocumented migrants are not covered. It is worth recalling that free access to ART is a relevant initiative to limit the spread of HIV. In fact, the rollout of free ART in a single country reduced annual mortality by 27% and decreased the likelihood of reporting poor health by 36% for black Africans aged 25–49 (50).



# FREE ART FOR NON-CITIZENS INELIGIBLE FOR NHS

KEY POPULATION



Uninsured PLWH

LOCATION



Australia



## PURPOSE

Reduce HIV incidence by maintaining a low / undetectable HIV viral load

## WHAT IT IS SOLVING

Expansion of HIV by individuals not receiving HIV treatment due to limited resources

## WHAT IS THE MODEL ABOUT?

Free access to ART for PLWH who are not covered by the National Healthcare System (e.g., Medicare), such as those lacking a permanent resident visa.



## RESOURCES

- AU\$39M investment by the Australian Government over 5 years...
- ... to cover the cost of HIV ART (not the medical visit)



also provide free access to ART regardless of residency status

## WHO CAN ACCESS ART FREE-OF-CHARGE?

### PLWH that...



- ✓ ...are ineligible for Medicare
- ✓ ...report that they are currently residing in Australia beyond a short-term stay (program excludes short-term visitors or tourists)
- ✓ ...report that they do not have private health that covers HIV ART or prefer not to use it
- ✓ ...are receiving appropriate specialist medical care

## HOW DOES IT WORK?



PLWH not eligible for Medicare goes to an NHS or *s100 community prescribers'* facility



Clinician assesses eligibility criteria based on self-reporting by the patient



Clinician prescribes free ART medication and flags the PLWH in the system as HIV NO MEDICARE dispensing pathway



PLWH goes to a Public Hospital Pharmacy to obtain ART and pharmacist flags the PLWH in the system as HIV NO MEDICARE dispensing pathway

Source: [Changes to ARV access for Medicare ineligible people in Australia - NAPWHA](#)

## IMPACT

# ~1,000

Estimated individuals benefitting from the program every year

Improved health equity & individual health outcomes, lowering HIV transmission



## RETENTION IN CARE & LONG-TERM SUCCESS

When the patients have been successfully linked to care and initiated treatment, it is key to keep them in care to improve quality of life of people living with HIV and long-term success. This could be reached by implementing two recommendations:



**Decentralized HIV care delivery**, facilitating a wide range of care delivery options or services.



**Multidisciplinary teams for long term HIV care** (e.g., holistic care of comorbidities, help aging well with HIV, improve health-related QoL)

Once the first visit with the HIV specialist has been carried out, decentralized HIV care delivery can help provide continuous care to people living with HIV. This approach aims to increase access to quality & timely healthcare, reduce patient travel burden, alleviate stigma, and improve cost-effectiveness (51). For example, patients in rural areas might face more barriers to access Sexual Health clinics or hospital HIV units due to distances to point of care delivery. Two interventions can mitigate the risk of losing the patient:

- **Empower General Practitioners to provide follow-up HIV care.** This would make sense for non-complex cases or virally suppressed patients, and it could be framed as an “HIV shared care model” where both the HIV specialist and the general practitioner agree on a plan to manage each individual, aligning on tailored health care needs (52).
- **Leverage virtual tools by:**
  - i) Offering virtual consultations / telemedicine**, as a complement and not a replacement of the existing health systems (53). For example, instead of physically attending a hospital to review the viral load test results, an online consultation could be conducted if the viral load results are within the expected range.
  - ii) Promoting virtual case management**, with a case manager that assists the “client” as they access services (53). For example, a new HIV positive diagnosis in a city laboratory in France triggers an alert to a “case manager”, who automatically schedules a visit with the HIV specialist, if the patient agrees to do so.

Finally, care of people living with HIV should not be limited to HIV care, but also include additional healthcare services that could impact people living with HIV’s health. **Multidisciplinary team care models** have been shown to improve clinical outcomes among HIV patients (54) and are especially relevant for people who experience “multi-morbidity”. According to data from the UK Positive Voices survey, 72% of people diagnosed with HIV have at least one other long-term health condition (e.g., cholesterol, hypertension, diabetes, arthritis, peripheral neuropath, etc.), and non-integrated services could lead to conflicting advice from different healthcare providers (55). Two initiatives have been implemented in the UK on this topic:

- An ideal model for high prevalent areas would be “**joint clinics**”. These clinics could operate similarly to HIV units of big hospitals. They are a “one-stop shop” for people with specific comorbidities, thereby reducing the treatment burden on the person living with HIV. It offers cost-savings by reducing the number of appointments an individual needs to attend, ensuring a holistic treatment approach rather than focusing solely on the comorbidities presented (55).
- An alternative model for smaller clinics could be a **collaborative or shared care model** (such as the collaboration between General Practitioners and HIV specialists described for decentralized care, but now including other healthcare providers (52)). A tailored plan for the individual would be agreed and recurrently reviewed by all relevant healthcare providers, but the patient would generally only engage with one of them.

# TRACING MODEL TO RE-ENGAGE INDIVIDUALS IN CARE

KEY POPULATION



People living with HIV lost in care

LOCATION



South-East London, UK



## PURPOSE

Increase number of people living with HIV achieving viral suppression and improve Quality of Life

## WHAT IT IS SOLVING

- Overcome barriers that people living with HIV experience in accessing services

## WHAT IS THE MODEL ABOUT?

Tracing and support model to identify people living with HIV that are not in care and support them to re-engage with services



## POINT OF CARE



South-East London clinics

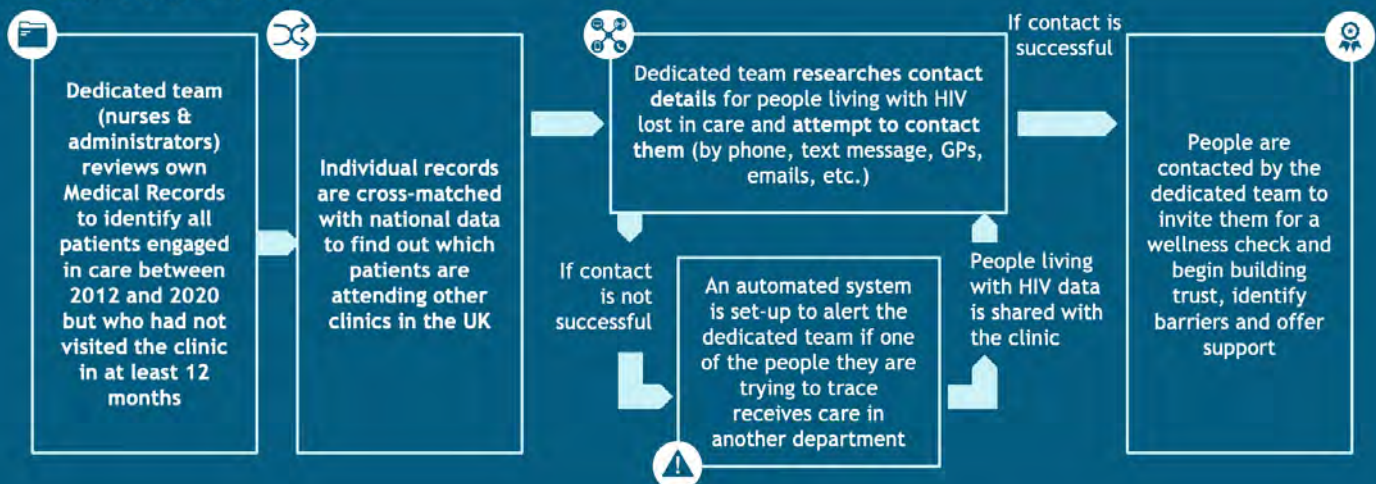


## FINANCIAL RESOURCES

Funding from Elton John AIDS Foundation, providing:

- Baseline investment
- Success fee for every patient re-engaged in care for +1 year

## HOW DOES IT WORK?



## IMPACT

Proven value of tracing models, especially for vulnerable population groups



824

671  
(81%)

153  
(19%)

Number of people living with HIV lost in care (not receiving ART / been followed-up for over a year)

153 people living with HIV successfully re-engaged and retained in care for more than 12 months

57% Women

71% Black African or Caribbean

71% Heterosexual



# RYAN WHITE HIV/AIDS PROGRAM

KEY POPULATION



PLWH

LOCATION



USA



## PURPOSE

Provide direct health care and support services for people living with HIV in the United States

## WHAT IT IS SOLVING

- New HIV infections
- Uneven access to care and suboptimal outcomes for PLWH
- Less coordinated nation response to HIV epidemic
- Health related disparities and health inequities

## WHAT IS THE MODEL ABOUT?

Program offering a patient-centered approach to ensure PLWH receive medical care, medications, and essential support services, improve quality of life & HIV-related health outcomes, and reduce HIV transmission.



## RESOURCES

- Funded by the Health Resources and Services Administration (HRSA)
- \$2.571 B in federal funding FY2023

## HOW DOES IT WORK?

Ryan White HIV/AIDS Program (RWHAP) provides myriad services to PLWH and their families including:



Core medical (75% of funds) & support services (25% of funds) in **Eligible Metropolitan and Transitional Areas** (part A) and **States and Territories** (part B)



**Early Intervention Services** in outpatient settings and **Capacity Development Program** to help organizations improve their ability to develop, enhance, or expand access to high-quality HIV primary health care services (part C)



**Outpatient family-centered primary and specialty medical care and support services** for low-income women, infants, children, and youth with HIV (part D)



Development of innovative models of HIV care and treatment to quickly respond to emerging needs of PLWH (part F), such as:



**Supporting Replication (SURE) of Housing Interventions**



**Developing strategies to improve outcomes for People Aging with HIV**



**Maximizing use of telehealth to improve health outcomes**



**Improving Care and Tx Coordination for Black Women with HIV**

## IMPACT

# 575,661

individuals benefitting from the program in 2021

> 50% of people diagnosed with HIV in the US

# 89.7%

 (n = 366,856)

Viral suppression among RWHAP beneficiaries in 2021

Broadened access to HIV care and services for people living with HIV, with focus on low-income population



## EVALUATION & MONITORING

A comprehensive and timely HIV surveillance system is key to provide data to understand where to focus efforts addressing the unmet needs that exist. Real time and granular data could be used by all relevant stakeholders to tailor resources and initiatives to underserved populations and close the gaps to reach the 95-95-95 UNAIDS' goals (57).

Although most surveillance systems report the number of HIV tests performed by healthcare setting, the number of newly diagnosed, number of people accessing treatment and number of people virally suppressed, only a few of them incorporate data on two key topics: people not in care and health-related quality of life of people living with HIV.

To tackle the **lack of data on people living with HIV that are not in care**, some countries are implementing models to identify through medical records if the patient has not been seen in care (56). The usual approach is to create a list of patients that have not attended services recently, and exclude those that have transferred to other clinics, have died or moved abroad. The remaining patients can then be contacted, to attempt to re-engage them into the healthcare system. However, this burdensome process could be standardized and simplified if HIV surveillance systems provided this data on a routine basis and made it available to healthcare providers.

Additionally, **HIV surveillance systems should also incorporate data measuring health-related quality of life** of people living with HIV. In this context, the 2021-2026 UNAIDS Global AIDS Strategy set as an explicit goal to optimize the quality of life of people living with HIV through integrated people-centred services (57). Likewise, the World Health Organization (WHO) included Health-related quality of life (HRQoL) as a key outcome of the HIV service cascade in its 2022-2030 HIV strategy on HIV, viral hepatitis and sexually transmitted infections (58). However, it is worth noting that HRQoL is not addressed in any of the 14 quantitative targets identified for assessing impact and service coverage (59).

Although CD4 count at diagnosis and viral suppression are necessary indicators to determine the clinical stage of HIV, they are not sufficient parameters to provide a broader view of health as defined by the WHO— i.e., a “state of complete physical, mental and social well-being, and not merely the absence of disease”. Only through recognizing and measuring the entire spectrum of associated health, mental and social outcomes related to HIV will the health status of people living with HIV be fully understood (60). Thus, HIV surveillance and monitoring systems should be expanded to reflect the reality of HIV as a long-term condition (9).

Also, evidence has shown that when people living with and impacted by HIV are proactively involved in managing their own care, the likelihood of success increases. Meaningful involvement helps improve long-term health outcomes, as it improves engagement in care, improves adherence to treatment, and lowers overall healthcare costs (42).

Two useful tools that could be introduced into routine care are Patient-Reported Outcomes Measures (PROMs) & Patient-Reported Experience Measures (PREMs).

**PROMs** are standardized, validated questionnaires completed by patients to measure either their perceptions of their general health or their perceptions of their health in relation to specific diseases or conditions (61). PROMs provide several benefits:

- At an individual level, they can help identify and monitor what matters to patients, and it has been proven that PROMs empower patients and encourages patient engagement with services (62)
- At a healthcare system level, they ensure that care is directed and measured around those outcomes, as they would be helping to:
  - Inform about the prevalence of problems and concerns.
  - Allow comparison within and across services.
  - Develop tailored services to best fit those needs (63).
  - Guide clinical decision-making around switching ART regimens (62).

Although several national plans already include as a priority to improve Quality of Life of people living with HIV, only a few have started implementing specific tools to measure it. In 2022, 13 countries in Europe and Central Asia (out of 55) reported including HRQoL measurement in national monitoring of people living with HIV, but only 4 countries (Germany, Italy, Sweden and Ukraine) reported using PROMs, and only Sweden did it annually (60).

As of today, there is no globally accepted HIV-specific PROM, but there are some country-specific examples that should serve as inspiration to start implementing PROMs:



An Australian partnership among several public and private organizations developed the PozQoL scale, which consists of 13 items / statements that are measured across 5 levels of agreement and assess 4 domains: psychological, social, health concerns and functional wellbeing (64).



The Swedish government established a goal of having 95% of people living with HIV complete a nine-item questionnaire annually, with indicators on physical, psychological and sexual health, medication adherence and satisfaction of care (59).



The Finnish Institute for Health carried out a qualitative study to learn about factors influencing the well-being of people living with HIV in Finland as part of a project to develop a national quality-of-care registry for HIV. According to this study, topics to be covered in HIV-related PROMs would be psychological well-being, stigma, physical health, social well-being, sexual well-being, medication uptake, managing other medications with antiretrovirals, and growing old (65).



**PREMs** are patients' direct interpretations of the quality of care they receive (65) and can inform changes to clinical practice that are necessary to improve quality of care and address the patients' needs (66). As PROMs, there is no

globally accepted HIV-specific PREMs, but there are also a couple of country-specific examples that can illustrate how to start implementing them:

According to the study carried out by the Finnish Institute for Health mentioned before, topics that should be covered in HIV-related PREMs would be:

- Helping patients understand their own health status
- Providing an opportunity for patients to discuss physical health and psychological and sexual well-being
- Supporting the uptake of antiretrovirals
- Assisting patients with medication use
- Showing compassion towards patients
- Empowering patients against stigma (65)



At the HIV unit of Hospital Clínic, Barcelona, they sought PREMs in a cohort of people living with HIV taking as a model similar surveys carried out in other areas of care for chronic patients and the recommendations of the Agency for Quality and Health Assessment of Catalonia. The questionnaire included 11 statements using a Likert scale, on topics such as...

- Appropriateness of the location setting
- Time spent in the waiting room
- Clarity & conciseness of information received
- Adequacy of vocabulary used
- Climate of trust
- Length of the consultation

...and a final question measuring user satisfaction and loyalty through the Net Promoter Score (67).



# COMPREHENSIVE HIV SURVEILLANCE SYSTEM

KEY POPULATION



HIV key stakeholders

LOCATION



Australia



## PURPOSE

Collect up-to-date data on diagnosis, treatment and viral suppression to focus efforts where inequities are identified

## WHAT IT IS SOLVING

Limited visibility on interventions needed to further progress on ending the HIV epidemic, specially on:

- Real gaps along the HIV prevention and care cascade
- Underserved populations that might require tailored interventions

## WHAT IS THE MODEL ABOUT?

Comprehensive and up-to-date HIV surveillance data with significant granularity to focus intervention efforts where inequities are identified across the HIV prevention and care cascade.



## HUMAN RESOURCES

- > 4 epidemiologists
- > 1 mathematical modeller
- > 2 researcher officers
- > 1 administrator
- > 2 biostatisticians

## HOW DOES IT WORK?

### New cases reporting process



### Demographics data included (non-exhaustive)

- |                         |                     |
|-------------------------|---------------------|
| Name code               | Date of diagnosis   |
| Gender                  | CD4+ cell count     |
| Language spoken at home | Source of exposure  |
| Country of birth        | Reason for HIV test |

## People living with HIV...

Estimated based on the European Centre for Disease Prevention and Control (ECDC) HIV Modelling Tool (multi-state back-calculation model)



### ... diagnosed ...

# of unique notifications from that year



Previous years' estimate



Estimate number of deaths



Estimated impact of migration

### ... on ART ...

# of unique patients in the PBS data who filled in at least one script for HIV treatment in the last 12 months



Estimated # of HIV-positive temporary residents taking ART (ineligible for Medicare)

### ...virally suppressed

Estimated based on 3 databases:

- Australian HIV Observational Database (AHOD)
- Central surveillance from the ACCESS network (~70 clinics)
- Self-reported viral load from the gay community periodic survey

## IMPACT

**30** Years exploring accounts of HIV infection and diagnosis

Focused intervention efforts addressing the main gaps identified across the prevention and care cascade



## PRIORITIZED BEST PRACTICES

Although each country's HIV strategy should cover end-to-end the prevention and care cascade, we want to be thoughtful on which are the essential interventions for high-income countries to focus their immediate efforts. While each initiative plays a crucial role, recommendations on prevention (PrEP, TasP) and early diagnosis are particularly impactful, but they need to be tailored to the specific context of each country, underserved key populations, and the stage of the HIV epidemic in the country.

The **four interventions** that should be prioritized, as they are the most impactful ones to accelerate progress on ending the HIV epidemic, would be the following:

- **Allocate resources on PrEP promotion to increase uptake**, especially among key populations where access, misinformation & stigma still represent the key barriers for a higher uptake. Efforts should consider populations groups beyond gay, bisexual and MSM, who already have a high awareness, knowledge and uptake of PrEP, and initiatives should be designed to address these underserved populations. Additionally, innovation in prevention measures should be a constant goal for all countries until the standard of care does not fulfil the first 95% UNAIDS target (people aware of their HIV status).
- **Incorporate an opt-out approach for HIV screening** following a status neutral cascade approach, focusing on healthcare settings where each country has the highest gaps on people aware of their HIV status (e.g., emergency departments, high-prevalence cities, rural areas) to ensure financial sustainability. Each country should identify the most relevant hotspots (especially those where underserved population is prevalent) and commission strategies towards them.
- **Expand HIV care delivery beyond healthcare settings** (e.g., community-based care) to (i) facilitate access to care and treatment to people who might experience barriers to access traditional healthcare settings, and (ii) improve retention in care, by providing differentiated service delivery models of care focusing on the individual's needs (e.g., addressing social and structural conditions like housing instability). Limited physician generational replacement and uneven geographical distribution of sexual health services clinics drive countries to look for innovative options to provide HIV care services.
- **Define and implement tools to measure health-related quality of life** (e.g., PROMs, PREMs), as a metric to monitor quality of life of people living with HIV and ensure long term success. Ending the HIV epidemic is not achieved when diagnoses or deaths become 0, but when, additionally, people living with HIV have a good health-related quality of life. The latter will only be accomplished when tools like PROMs and PREMs are widely implemented, which will inform how to re-direct endeavours.



# Key enablers for ending the HIV epidemic

The recommendations developed in the previous chapter can only be implemented if governments and policy makers ensure that three key enablers are in place:

- Sustainable and continuous **funding**.
- **Innovation** in therapies, diagnostic technologies and services across the prevention & care cascade.
- **Differentiated service delivery models**.

## **FUNDING**

The HIV epidemic will not end unless governments invest in their healthcare systems, providing the necessary resources to improve health outcomes of people at risk of HIV infection and people living with HIV. Despite the limited transparency on country-specific funding dedicated to HIV prevention and care, many countries have been investing significant financial resources to control the HIV epidemic. However, funding must be more targeted and person-centric to address the needs of underserved and underrepresented key populations.

HIV funding determines the pace at which each country progresses on achieving global HIV targets. To further progress towards ending the HIV epidemic, additional HIV funding will be required. How each country decides to spend that funding will depend on the current status and key unmet needs in the country.

For example, funding in countries with a more modest progress will likely focus first on treatment, experiencing an increase in incidence rates. Likewise, the focus of funding in countries with the highest progress will likely be in prevention in order to limit the increase in HIV incidence rates as, according to UNAIDS, where HIV prevention funding has increased, HIV incidence has declined (1). For instance, for prevention programmes, especially among key populations, funding is badly needed as it is a smarter, more cost-effective use of those funds (1). Two cost-effective examples on prevention efforts are:

- **Use of condoms:** the increase in condom use has limited spread of HIV, averting ~177 million new infections between 1990 and 2019 (2). At an average cost of US\$ 0.18 for each male condom distributed, burden of condom use would amount to US\$230 per each averted HIV infection, making a clear business case for consistent condom use as a measure to prevent HIV spread.
- **PrEP programmes:** the introduction of sexual event-based PrEP in the UK was estimated to lead to an additional 40,000 discounted quality-adjusted life years during an 80-year time horizon and a saving in costs of £1 billion (discounted) (3).

Additionally, further investment allows for innovation, a second key enabler of interventions to end the HIV epidemic.

### INNOVATION IN THERAPIES AND SERVICES

Innovation is and has been key for the improvement in health outcomes of people living with HIV. Innovation is required along the HIV prevention and care continuum to develop new medicines and new diagnosis technologies, implement new service delivery models, use existing tools more efficiently and adapt them for different populations, settings or purposes (4).

First, the adoption of **innovative biomedical therapies** has proven to be extremely impactful to progress on ending the HIV epidemic.

**Anti-Retroviral Therapy (ART)** transformed the HIV infection from a deadly disease to a manageable chronic condition. Since the approval of the first ART in 1987, multiple drug innovations (such as protease inhibitors,

nucleotide reverse transcriptase inhibitors, monoclonal antibodies), along with new treatment guidance to start treatment promptly, even as **preventive measure (Pre-Exposure Prophylaxis)**, allowed to keep the HIV virus under control (5).

Biomedical innovations have improved the prognosis and life expectancy of people living with HIV. For instance, integrase inhibitors (INSTI)-based combined antiretroviral therapy (cART) has demonstrated superior effectiveness versus boosted protease inhibitor (PI/r)-based regimens during primary HIV infection, as it leads to faster viral suppression and immune restoration (6).

Additionally, studies have shown that life expectancy increases with calendar period of initiation of ART, for both men and women (figure 16):

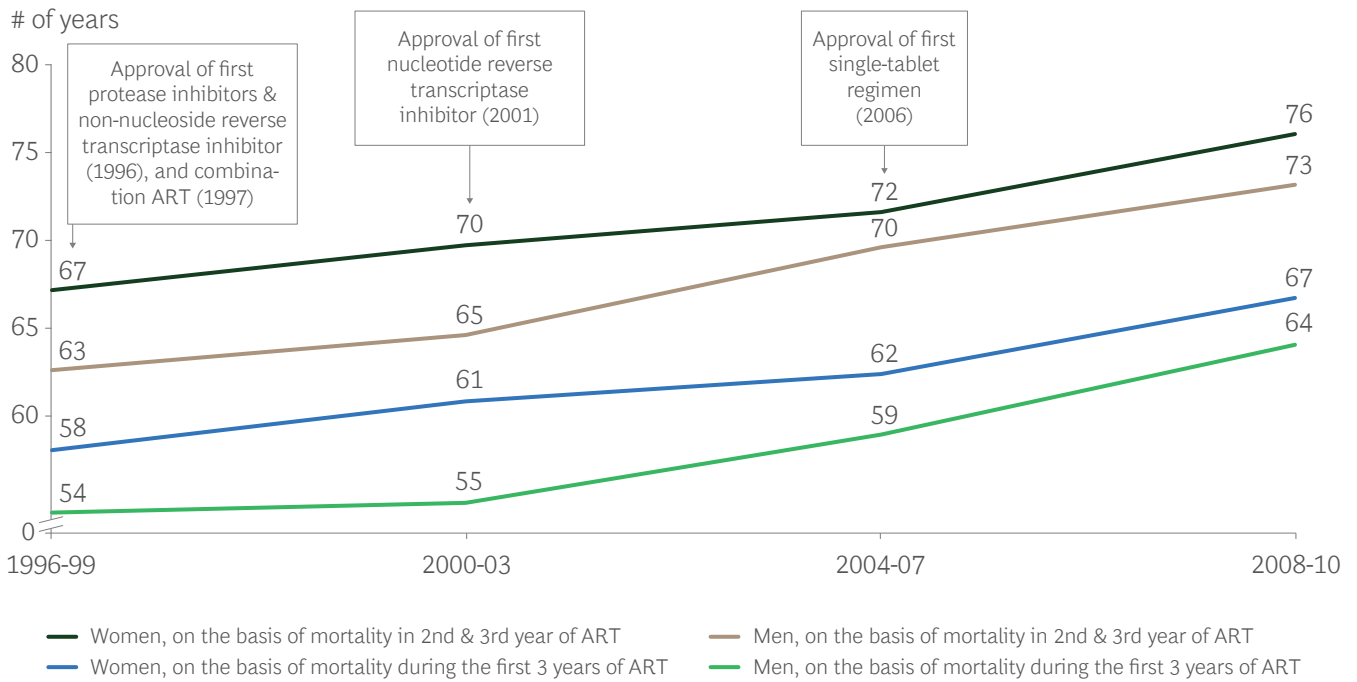
- Expected average ages at death for people living with HIV aged 20 years starting ART in 2008–10, on the basis of mortality during the first 3 years of ART, were ~64 for men and ~67 for women, 6-9 years higher than people starting ART in 2000-03.
- When estimates of life expectancy were based on mortality during the second and third years of ART, the average ages at death were around 10 years higher (7).

Even in the late ART era, survival during the first 3 years of ART continues to improve, which probably reflects transition to less toxic antiretroviral drugs, improved adherence, prophylactic measures, and management of comorbidity (7).

The introduction of PrEP has also proven to be very impactful in reducing transmission rates. In a three-year EPIC-NSW research in New South Wales (Australia) where PrEP was provided free to almost 10,000 participants over a 3-year period, the incidence of HIV decreased from 2.24 per 1,000 person-years (when PrEP was mostly purchased rather than provided by the study) to 1.6 per 1,000 person-years (8). Additionally, the Centers for Disease Control and Prevention in the US estimated that successful expansion of PrEP access, in combination with other interventions, can be expected to prevent as many as 1 in 5 new HIV infections each year (9). This evidence of PrEP effectiveness in HIV prevention is unequivocal, and will only increase when additional PrEP modalities, such as the long-acting injectable, are extensively available to the population. The more options available, the more people will find a PrEP modality that is suitable to them (10).

## Figure 16 - Cost comparison of PrEP and ART in Spain

Expected age at death of men & women living with HIV starting antiretroviral therapy (ART) aged 20 years, by period of initiation



**Note:** Estimates of life expectancy were based on mortality during the first 3 years of follow-up and the second and third years of follow-up. Data are for in western Europe, the USA, and Canada

**Source:** Adapted from Lohse N. et al, Ann Intern Med 2007;146:87-95; Trickey, Adam et al., Survival of HIV-positive patients starting antiretroviral therapy between 1996 and 2013: a collaborative analysis of cohort studies, The Lancet HIV, 2017, Volume 4, Issue 8, e349 - e356

The significant development of long-acting injectable therapies for HIV in recent years has the potential to revolutionize HIV care as we know it, - from a daily single-tablet regime requiring intake of 365 pills per year to a few subcutaneous injections per year (11) -, increase adherence to treatment and improve quality of life both for people who would benefit from prevention treatments and for people living with HIV. However, this potential in revolutionizing the landscape of HIV care, prevention, and treatment cascade, and its efficacy and cost-effectiveness among patients at risk of non-adherence and across age groups, pregnancy, and post-partum needs to be substantiated with more data (12).

The focus of research is currently on newer co-formulations, other novel antiretrovirals and, more incipiently, on broadly neutralizing antibodies (bnAbs).

Only by prioritizing innovation through sustained funding will we be able to see what benefits these innovative treatments will have, and, ultimately, find a cure for HIV.

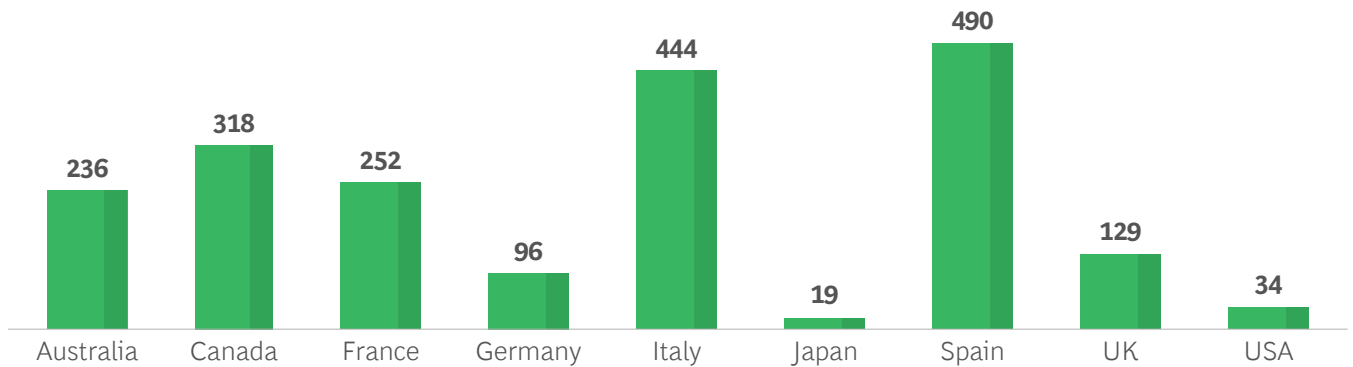
Given the relevance of innovation in therapies in managing the HIV epidemic, healthcare providers are informed about the latest advances in HIV research, prevention, and treatment, and encourage participation in clinical trials to contribute to advancements in HIV care.

The role of biomedical innovation in ending the HIV epidemic is clear. However, time to availability of innovative therapies is often a limitation to rapid access of novel therapies in the market. There is significant variability across countries, but the longest time to availability has been found in Spain (490 days) and in Italy (444 days) (Figure 17).

## Figure 17 - Time to availability of HIV therapies

### Time to availability of HIV therapies

(Days between marketing authorization and price approval)



Source: POLI Pricing database, data for products approved since 2018

Innovation in therapies has decreased relevance in the ranking for budget allocation. In fact, availability of branded (patented) ART in most high-income countries has decreased from ~45% in 2018 to ~35% in 2022 (Figure 18).

To end new HIV transmissions, we will need to invest in innovation, develop new treatment and prevention options focusing on the needs of individuals and their preferences (13).

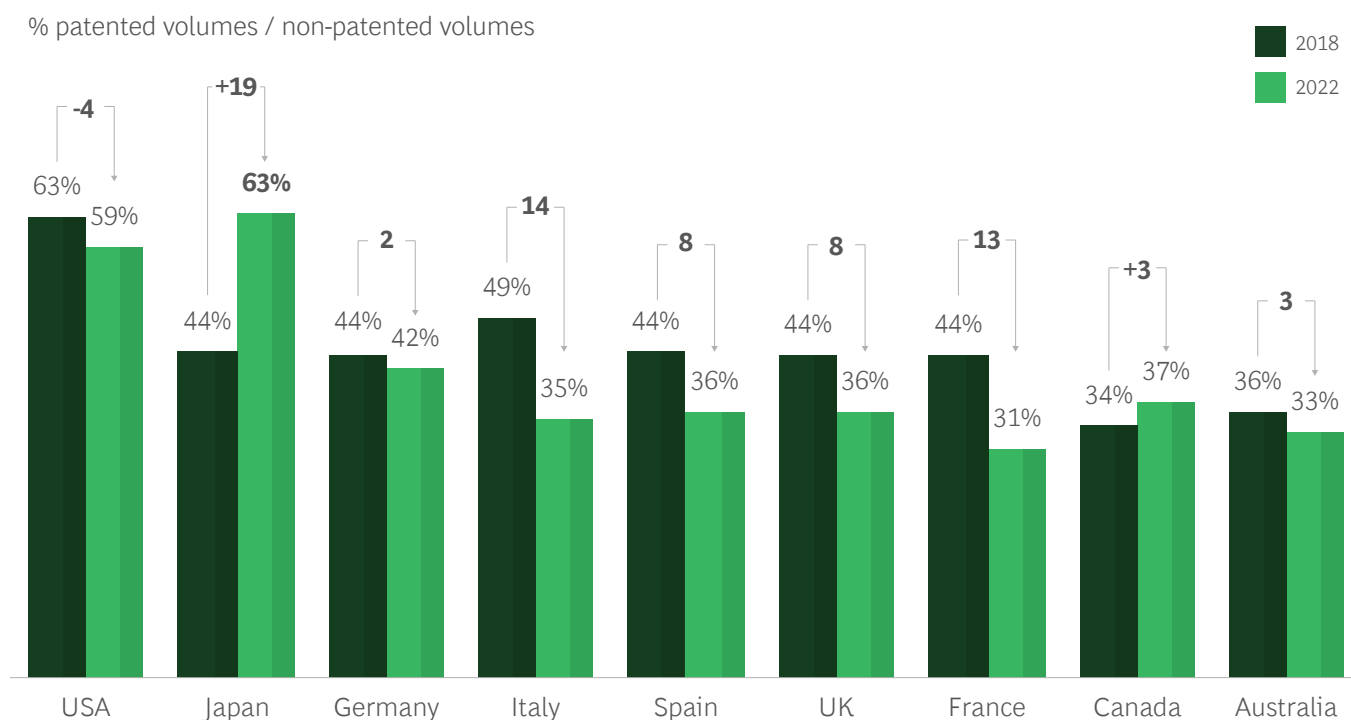
Second, innovation in HIV testing technologies has also proven to be critical to progress on transforming the HIV epidemic. HIV testing has significantly evolved since the first HIV antibody test developed in 1985. The fifth-generation HIV assay provides separate antigen and antibody results and will require yet another algorithm. HIV infection may now be detected approximately 2 weeks postexposure, with a reduced number of false-positive results (14).

Finally, innovation in care delivery is also key, as it allows more targeted, person-centric care, contributing to retain people living with HIV in care. For example, telehealth has proven to be a strategy to support early HIV diagnosis and

initiation of treatment, sustained viral suppression, prevention of new HIV transmissions, and rapid response to HIV outbreaks (15). Additionally, self-testing can help link more people living with HIV to treatment, overcoming challenges of HIV-related stigma, as tests can be done at home, enabling people to learn their HIV status in private (16).

The value of innovation in therapies and services has turned out to be key to prevent deaths, limit the increase of new infections, ensure rapid viral suppression, increase quality of life and, ultimately, find a cure for HIV. Therefore, health and care systems must be able to adopt innovations more quickly and consider equitable access to innovation at every stage of planning and implementation (17). Only a friendly innovation environment will provide the right setting to find an HIV cure.

## Figure 18 - Evolution of the uptake of innovative ART in high-income countries



**Source:** Based on internal analysis by Boston Consulting Group using data from the following source: IQVIA Analytics Link volume data (standard units) triangulated with Evaluate Pharma data for the period of 2018 and 2022 with Q3 2023 IQVIA data refresh

### DIFFERENTIATED SERVICE DELIVERY MODELS (DSD)

As national guidelines have evolved towards initiating ART for all people living with HIV, differentiated service delivery for HIV treatment has become a critical component of recognizing the diversity of people living with HIV in adapting how HIV services are provided (18). Differentiated service delivery is a person-centred approach that simplifies and adapts HIV services across the cascade in ways that both serve the needs of people living with and vulnerable to HIV and optimize the available resources in health systems (19).

The principles of differentiated service delivery can be applied along the HIV continuum (e.g., prevention, testing, or treatment) and has proven to:

- Enhance patient outcomes, including quality of care.
- Ensure that the health system functions efficiently.
- Enable the health system to refocus resources to those most in need.

There are different DSD models that can be summarized as follows (20):

- **Healthcare worker-managed groups.** Most examples are on ART delivery models, such as the implementation of antiretroviral adherence clubs for specific populations (e.g., adolescents, children and their caregivers, postnatal women, MSM) receiving their care from individuals from their same population group, which contributed to higher retention in care and treatment.
- **Client-managed group.** Most common model is also on ART delivery, aiming to facilitate accessing treatment, especially for people traveling long distances to get ART. One specific example would be a self-formed group of people living with HIV who meet at an agreed community-based location and nominate a member to collect ART for the group. That nominated member is rotated to soften the burden of picking up ART (20).
- **Facility-based individual model.** These group models aim to reduce the cadence of specialized medical visits. A couple of examples have proven to be efficient:



- o Pharmacy-only refill programme (PRP), with six-monthly clinical reviews and two-monthly ART refills from the pharmacy, resulting in a more financial cost-effective model than the standard of care (20) and a higher satisfaction for people living with HIV as the number of unnecessary medical visits was reduced.

- o Pharmacy HIV care model in some US cities where community-based pharmacists provided HIV services on a collaborative medication-related action planning with medical providers (21).

- **Out-of-facility individual model.** These models vary according to where in the community the services are provided: fixed community points, mobile outreach ART delivery and home delivery. The out-of-facility models can be useful, for example, to (i) deliver ART (both PrEP or HIV treatment) and HIV tests, and (ii) offer care services at the patient house (e.g., collecting blood specimens for viral load suppression monitoring and receiving a text message one week later indicating whether the results are what was expected or the patient needs to visit a doctor (22)).

Another example of differentiated service delivery that would integrate different model types would be the **“status-neutral” approach** implemented in the US, focusing on the needs of the person through the provision of comprehensive services that meet people where they are regardless of their HIV status (23) and involving individuals in the decision-making process around treatment and care, increasing the probability of being retained in care and achieve better health outcomes (24). This approach combines different **interventions** aiming to reach five main **goals**:

- Eliminating stigma, as culturally affirming, stigma-free HIV treatment and prevention is delivered by providers who have been trained to recognize and address implicit racial/ethnic, sexual orientation, and other biases (25).
- Better accessibility of services, as there is an integrated network of public and private organizations across a region or country to provide accurate and comprehensive information in a timely manner.
- Cost-efficiencies in service delivery, as a unified setting offers HIV testing, treatment, and prevention services.
- Health equity, as social determinants of health are addressed when they exist. A complete set of services beyond health is provided (e.g., housing, employment, insurance, education, transportation, nutrition, mental health, or substance use (25)).

- Helping people achieve optimal health and well-being, which is accomplished by involving individuals in the decision-making process around treatment and care (26).

Differentiated service delivery for HIV care and treatment has a positive impact on Quality of Life (QoL), as it enables, for example, patients save substantial money on travel costs, reduce the time required to receive ART, including time spent on transport, waiting in the queue or having a clinic visit, and modestly reduce the resources the health system used (21, 27).



## Call to action

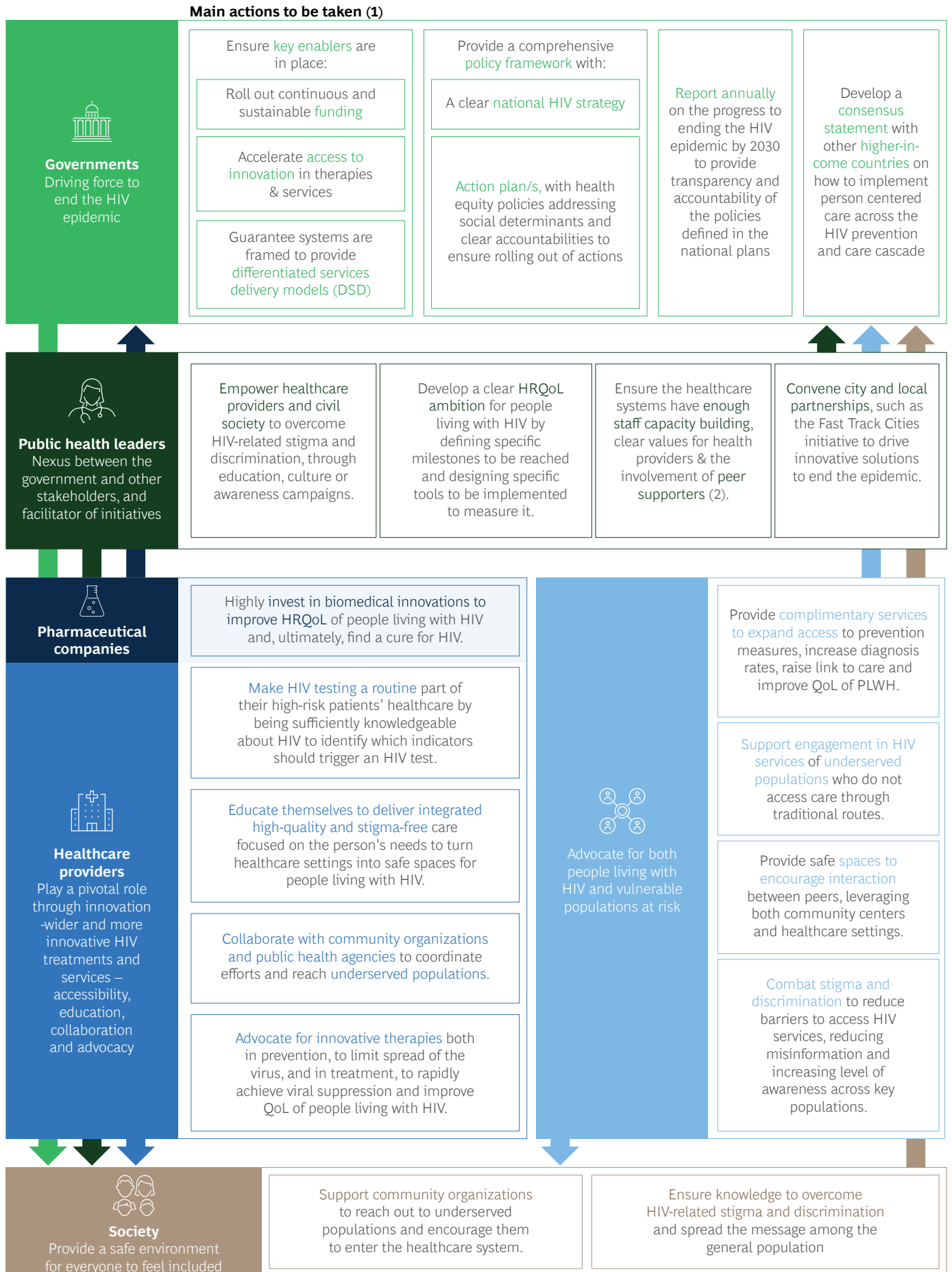
Advances on policies, strategies, funding, and implementation of initiatives along the HIV prevention and care cascade have led to significant progress on limiting the spread of HIV, improving life expectancy of people living with HIV and moving towards UNAIDS goals.

However, there are still relevant efforts needed to achieve these goals. Some countries have deprioritized HIV over other health conditions due to the lower incidence rates, disregarded some minority populations when implementing initiatives, overlooked quality of life of people living with HIV and deprioritized access to innovative treatments. All these topics have proven to be effective in the past and cannot be ignored if we want to end the HIV epidemic by 2030.

A strong commitment is needed from all relevant stakeholders, with each of them playing their part (Figure 19).

The authors and experts that contributed to this report consider that 2030 goals can still be achieved if actors prioritize and implement the recommendations set out. Ending the HIV epidemic as a public threat by 2030 is only conceivable if real action is taken today.

# Figure 19 - Stakeholders involved in the extra mile to Ending the HIV Epidemic





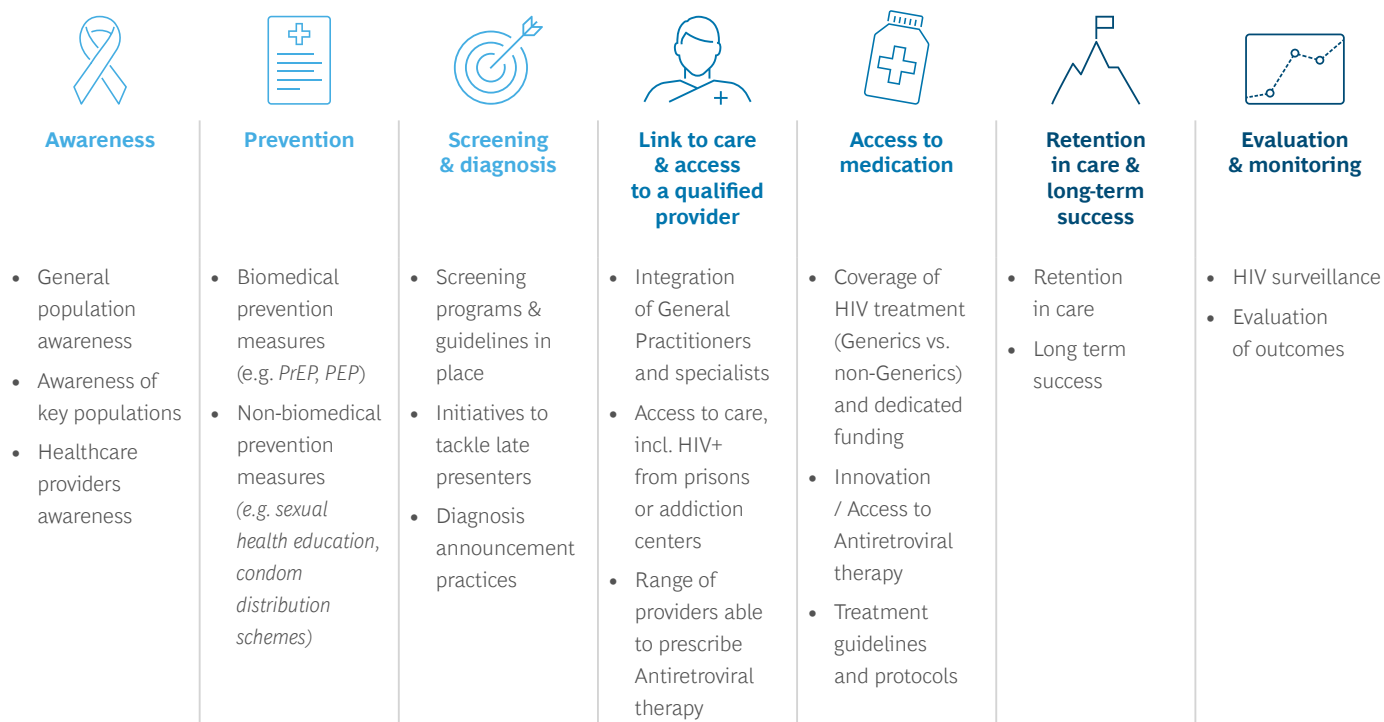
## Further information

### Overall approach

This report assesses the current status of HIV elimination of 9 countries, covering Australia, Canada, France, Germany, Italy, Japan, Spain, United Kingdom and United States. The aim is to determine the progress made towards ending the HIV epidemic in the recent years, identify the opportunities for improvement, highlight the best practices, and propose an approach based on the overarching principles of health equity, non-discrimination, person-centricity, and cost-effectiveness. The report looks into six different steps of a defined framework formed by the key cascade points in which HIV can be avoided or controlled: awareness, prevention, screening & diagnosis, link to care & access to a qualified physician, access to medication, and evaluation & monitoring. Moreover, the report includes an audience-stakeholder perspective and shows how this can help healthcare authorities and other stakeholders implement effective strategies to battle HIV.

BCG Managing Directors and Partners María López and Mark Lubkeman, Principal Cristina Yañez, and Consultant Laura Ragull have held editorial control of the report throughout. The report has been commissioned and paid for by Gilead Sciences Inc. (Gilead). A scorecard was created summarizing the status of the countries covered by the report in terms of key metrics based on the initiatives implemented for the six steps of the framework. The scorecard was developed by BCG with the support and validation of experts from the countries in scope.

More than ten experts from various countries were interviewed or provided information to create and verify the profiles of each country within the report's scope. These experts included physicians, non-governmental organization (NGO) representatives, policy advisors, research scientists, and social researchers. The interviews typically lasted for an hour and were preceded by a short questionnaire designed to gather essential information for an in-depth analysis of the target countries, considering



the interviewees' expertise. However, the opinions expressed by the experts might not always represent the opinion of the organizations they are affiliated with. All interviewees have been part of the process of creating this document to which we have taken the opportunity to acknowledge them for their contribution.

The report includes an overall assessment of the good practices and opportunities for improvement identified in the care cascade of the different countries, as well as best practices and recommendations. Additionally, for each step of the framework, a profile was developed using input from the available literature, followed by validation interviews. Common sources of information were national plans, papers, previous reports on HIV, and the media.

### Selected criteria for country scorecard

To carry out an exhaustive analysis of the status, each of the seven steps of the framework were divided into more sub-steps:

Each of these sub-steps was evaluated with a defined colour-based criteria to ensure consistency in the evaluation of the countries. The scorecard assesses progress made across these countries as of June 2023.

Comprehensive program in place with great impact	Implemented initiatives with some room for improvement	Initiatives selectively implemented in some territories or starting to be implemented	Planned initiatives not yet implemented	No initiatives implemented

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## CALL TO ACTION

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# Abbreviations

**AHI:** Acute HIV Infection

**AIDS:** Acquired immunodeficiency syndrome

**ART:** Antiretroviral therapy

**ARV:** Antiretroviral

**BBV:** Blood-borne viruses

**ED:** Emergency department

**EHE:** Ending the HIV Epidemic

**GP:** General Practitioner

**HBV:** Hepatitis B virus

**HC:** Health care

**HCP:** Health care provider

**HCV:** Hepatitis C virus

**HIV:** Human immunodeficiency virus

**HIV+:** People with HIV infection

**HrQoL:** Health-related quality of life

**ID:** Infectious disease

**LMIC:** Low- & middle-income countries

**LGBTQ+:** Lesbian, gay, bisexual, transexual, and queer

**MSM:** Men that have sex with other men

**NGO:** Non-governmental organization

**NHS:** National Health System

**NP:** Nurse practitioner

**PCP:** Primary Care Practices

**PEP:** Post-exposure prophylaxis

**PLWH:** People living with HIV

**PREM:** Patient-reported experience measure

**PrEP:** Pre-exposure prophylaxis

**PROM:** Patient-reported outcome measure

**PWUD:** People who use drugs

**QoL:** Quality of life

**SHS:** Sexual health services

**STBBI:** Sexually transmitted blood-borne infection

**STI:** Sexually transmitted infection

**Tx:** Treatment

**U=U:** Undetectable = Untransmittable

**WHO:** World Health Organization





GOING THE EXTRA MILE TO END THE HIV EPIDEMIC

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