Integrating testing for HIV/STI/VH and TB - when and where?

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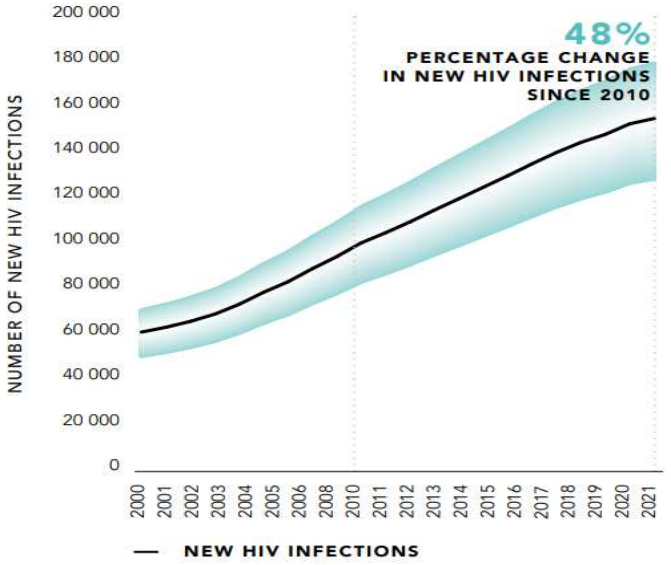
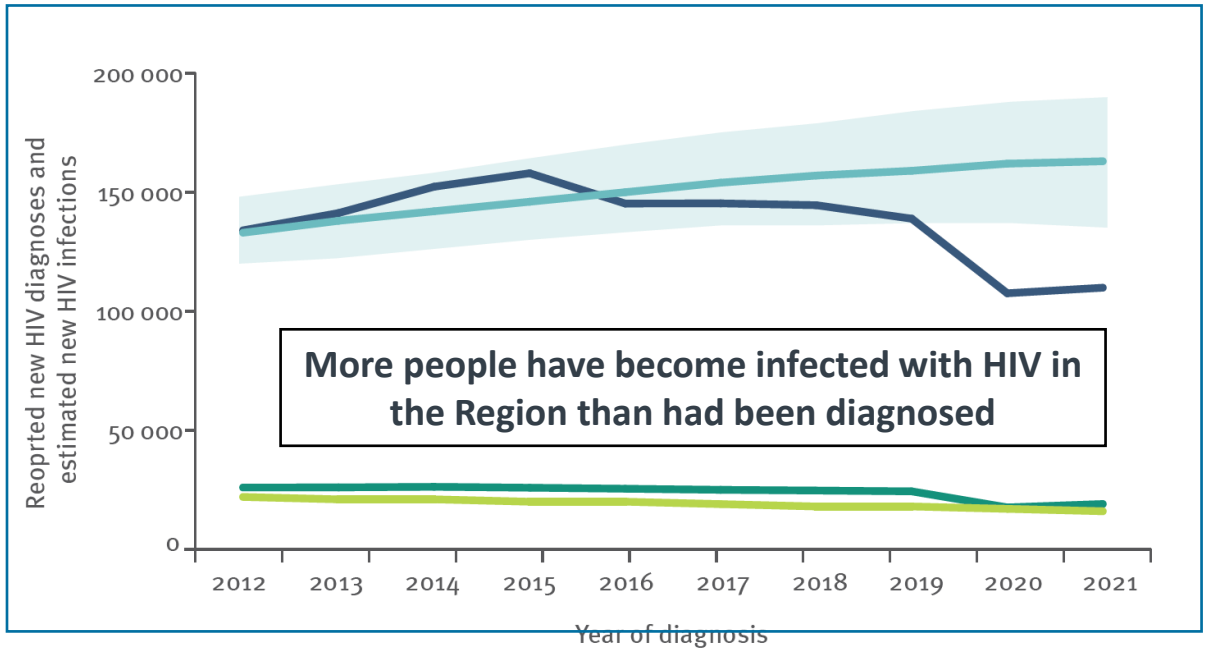
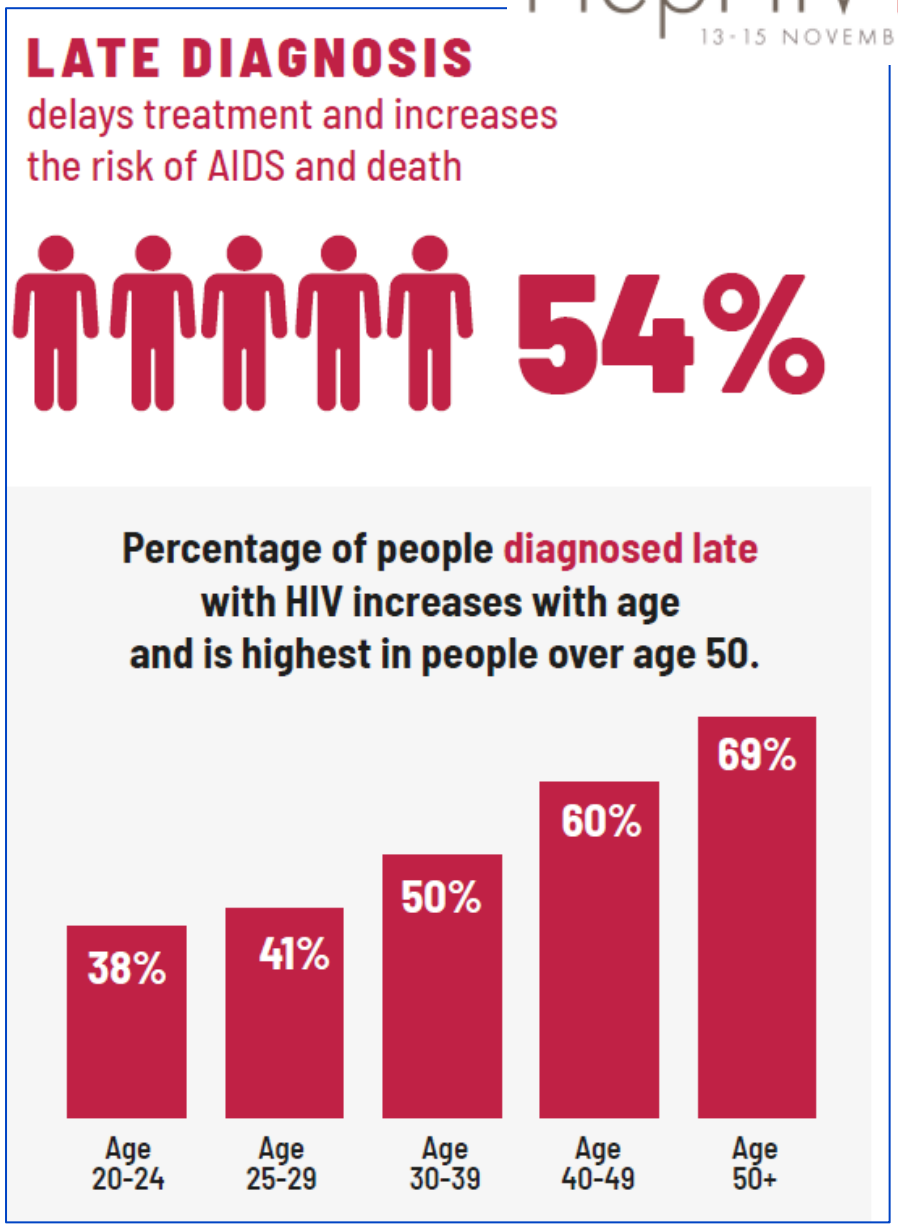


Source: UNAIDS epidemiological estimates, 2022 (https://aidsinfo.unaids.org/)

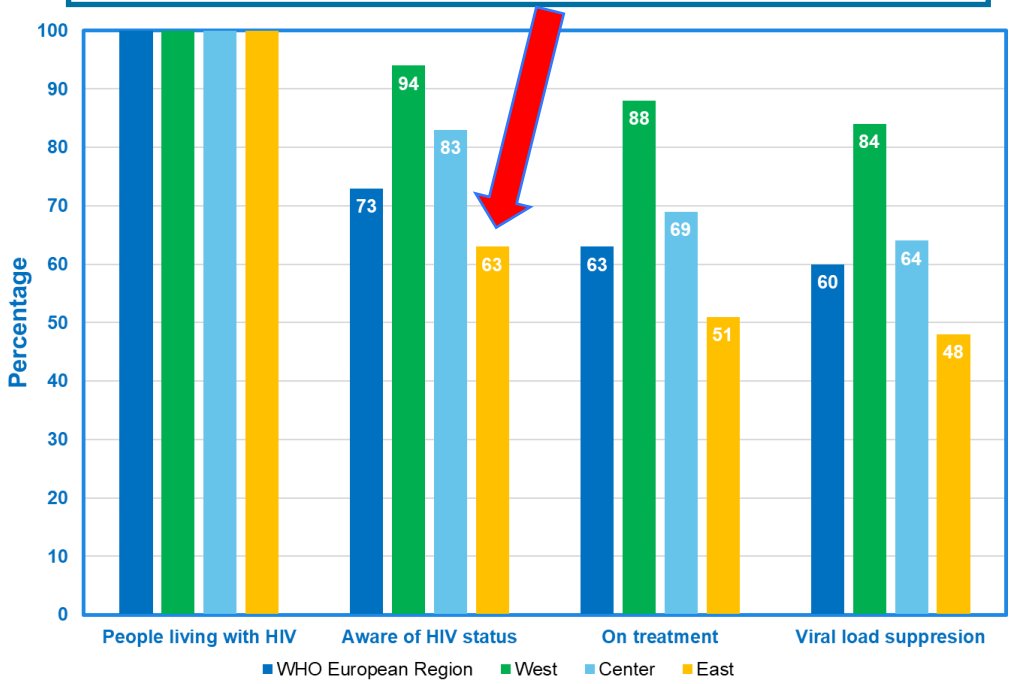
Countries of EECA have had the **fastest growing HIV epidemic in the world** over the last decade and contributed to 78% of new HIV diagnoses reported in WHO European region in 2021





Source: ECDC/WHO (2022). HIV/AIDS Surveillance in Europe 2022 (2021 data)

HIV testing and treatment cascade

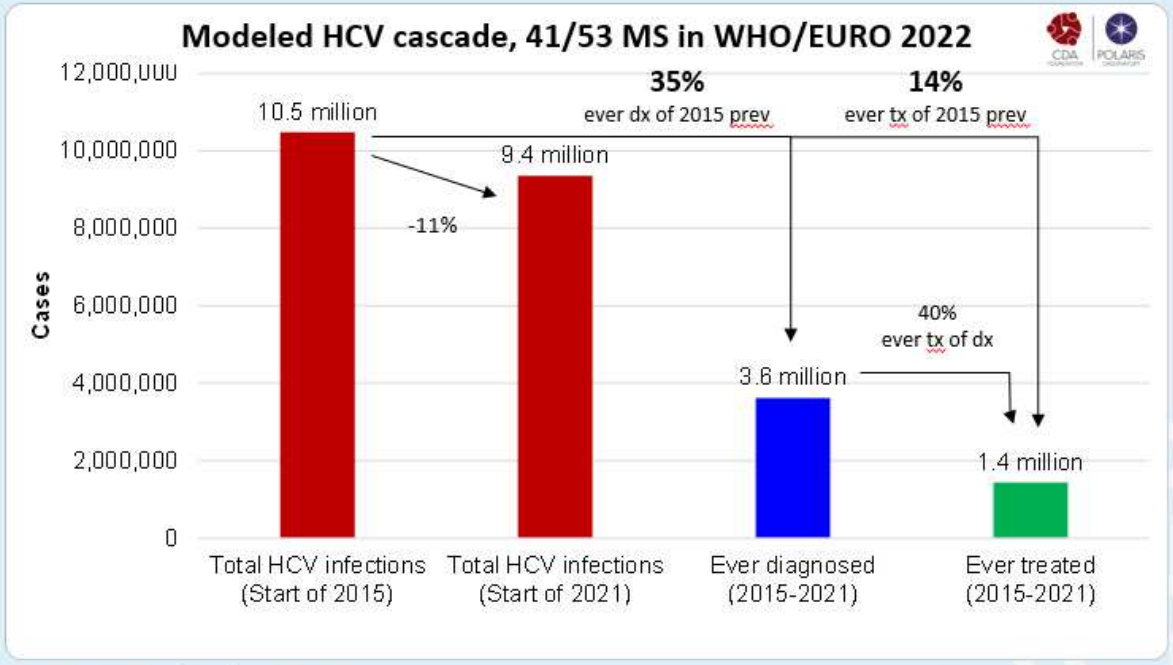


VH testing and treatment cascade

In the **WHO European Region**, 2019 (WHO, 2021):

B **Diagnosed: 19%** Treated: 2%

C **Diagnosed: 24%** Treated: 8%



Source: CDA foundation, 2022

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Global STI situation

1. **30 different STIs , multiple infections are possible**
2. **High rates of STIs**
3. **Increasing rates of STIs in some populations**
4. **Emerging & Re-emerging STIs**
5. **Increasing antimicrobial resistance**

RESPONSE IS LOW AND SLOW

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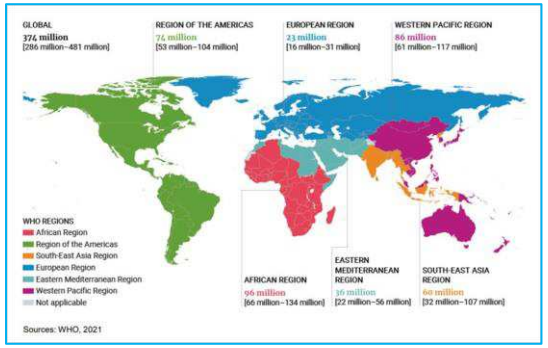

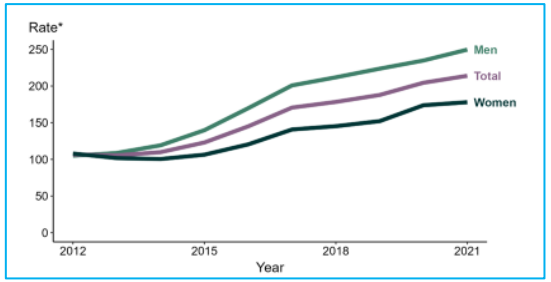

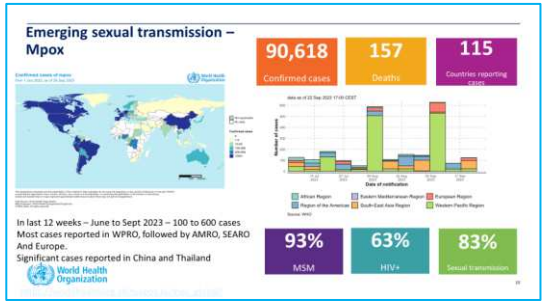

- **374 million new cases** of gonorrhoea, chlamydia, syphilis & trichomoniasis (age 15-49) in 2020
- **> 200 million adults** with prevalent GUD due to either HSV-1 or HSV-2
- **1 in 3 men** have genital HPV
- **High rates of STIs in MSM** and SW
- **Increasing STI** in countries w/ good surveillance systems (US and UK)
- **Emergence** of sexual transmission of **mpox**
- **Emerging gonorrhoea resistance** to the last-line treatment - ceftriaxone and cefixime

Neglecting STIs costs us critical time

- **2020-21, US** had a **30.5% increase in congenital syphilis cases**
- Rates are at a **30-year high** as supplies BPG are limited
- In 2021, US rates of congenital syphilis reached **77 cases for every 100,000 live births or 2,855 cases**.
- UK reported 11 cases in *five years* (2014 to 2019)
- **Is this the tip of the iceburg?**
- **Years of underfunding of STI & public health systems/services now putting lives at risk**

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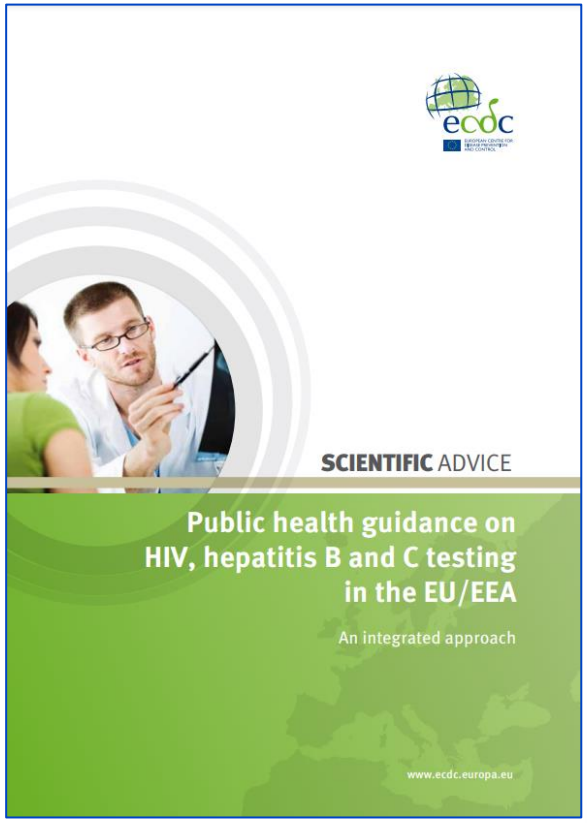
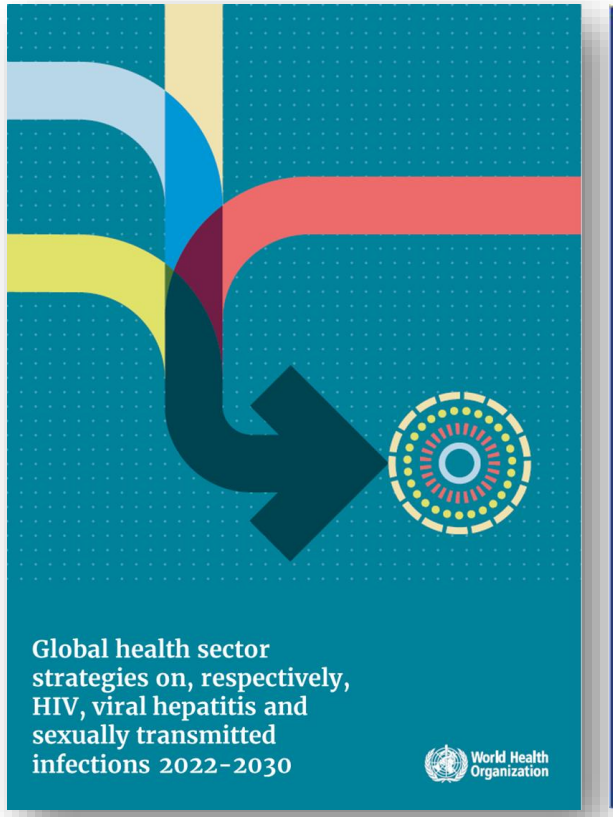
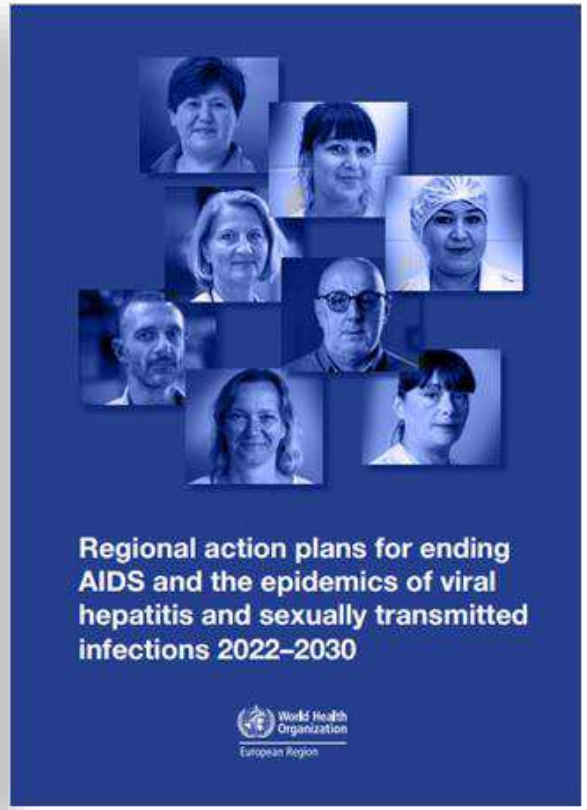
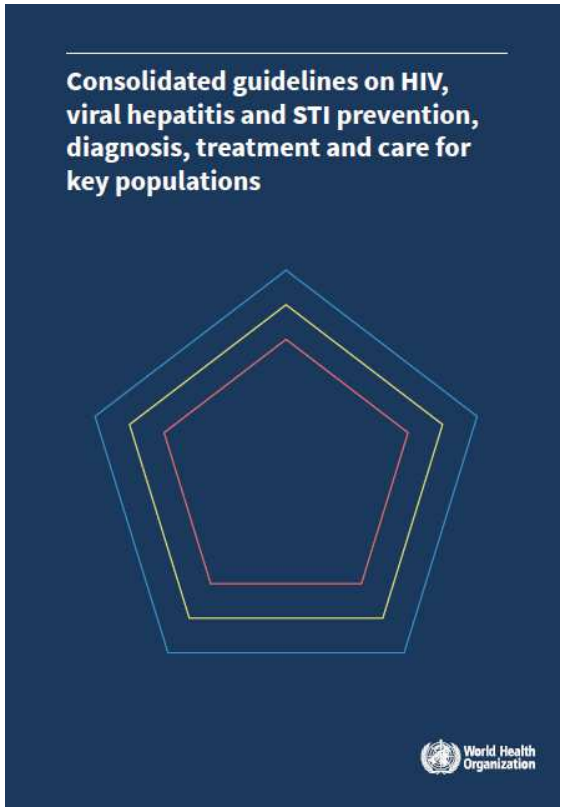
Biden administration urged to declare a public health emergency with key medication for preventable condition in short supply

Health advocates are calling on the Biden administration to declare a public health emergency over a steep rise in congenital syphilis cases. The easily treated infection has quintupled in 10 years and can have harrowing impacts on children.









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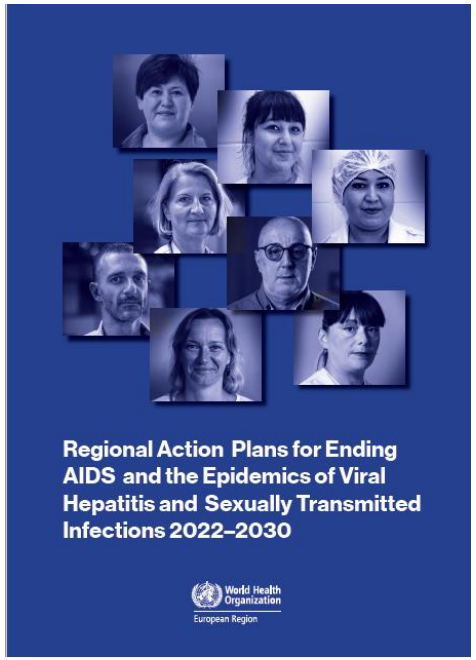
Priority actions for countries for Strategic Direction 1 (a shared response to HIV, VH and STIs)



1.5. Ensure accessible, decentralized diagnostic and laboratory services

- Develop strategic laboratory plans across disease programmes to clarify the role of reference laboratories, while decentralizing and integrating testing and optimizing the use of the available molecular diagnostic platforms including point-of-care testing (POCT) and rapid testing for HIV, TB, VH, STIs and other communicable diseases.
- Ensure quality standards for decentralized testing strategies and appropriate professional competencies.
- Implement laboratory information management systems that are linked to patient data systems to deliver timely results.

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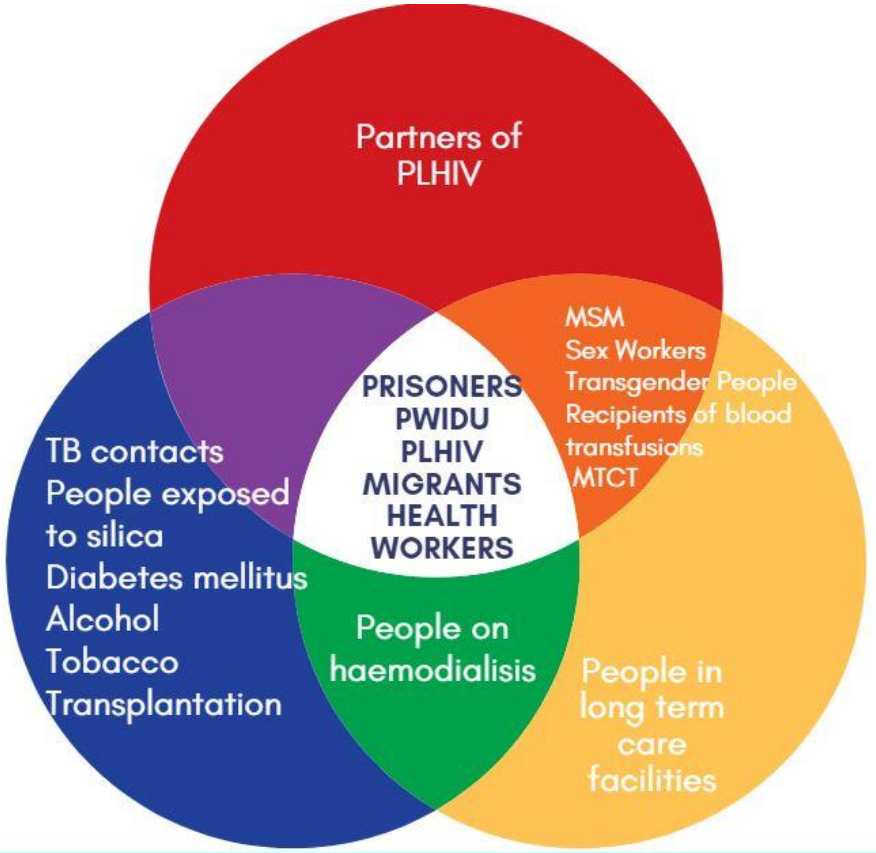
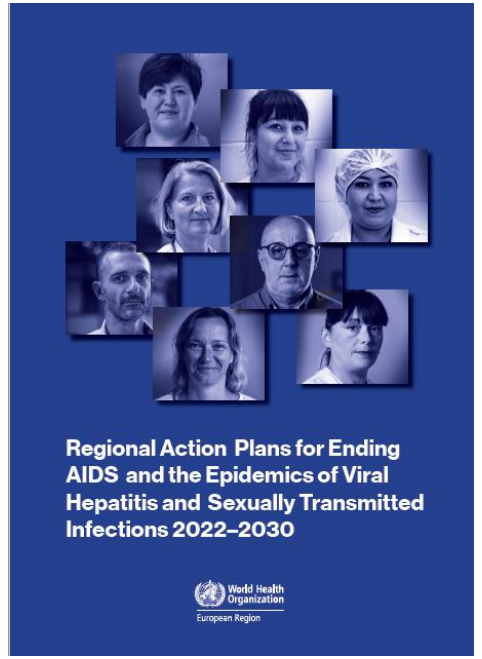
Why integrated testing for HIV, viral hepatitis and STIs?

- HIV, VH and STIs share **common modes of transmission** and determinants, and many of the populations affected by these diseases overlap.
- Integrated HIV, VH and STIs testing allows synergies to be created in times of **constrained resources**.



RAP: Priority populations for HIV, VH and STIs

- people exposed through **sexual transmission**, including
  - **young people** and adolescents;
  - men who have sex with men **(MSM)**;
  - **sex workers** and their clients; **transgender** people;
  - people in **prisons** and other closed settings;
  - and people whose sexual behaviour is mediated by drug or alcohol use;
- people exposed through **unsafe blood** supplies and/or **unsafe medical** injections and procedures;
- people who inject and use **drugs**;
- children exposed through **vertical (mother-to-child) transmission** or early childhood infection;
- **pregnant and breastfeeding** women;
- women and girls, including adolescent girls and young women, who face risks associated with gender inequalities and exposure to **violence**, in conjunction with increased biological risks on the basis of sex;
- people of all ages, including men, who are less likely to use health services; **migrants**, mobile populations, and people **affected by conflict** and civil unrest; indigenous peoples;
- people with **disabilities.**



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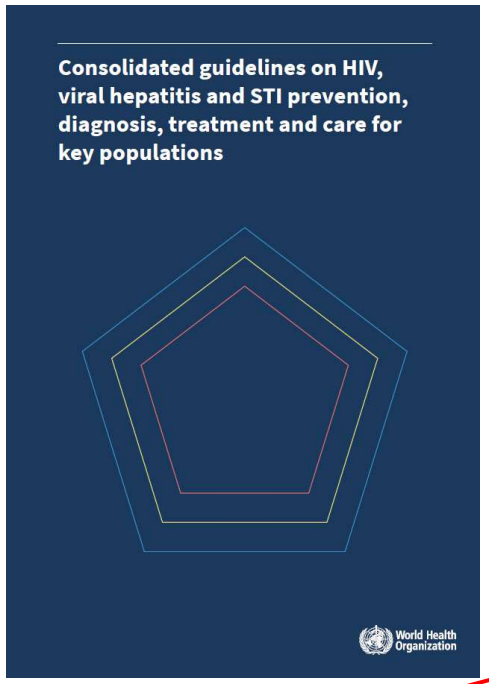
Essential health and enabling recommendations for key populations,



Essential for impact: enabling interventions

Removing punitive laws, policies and practices

Reducing stigma and discrimination

Community empowerment

Addressing violence

Essential for impact: health interventions

Prevention of HIV, viral hepatitis and STIs

Harm reduction (needle and syringe programmes (NSPs), opioid agonist maintenance therapy (OAMT) and naloxone for overdose management)

Condoms and lubricant

Pre-exposure prophylaxis (PrEP) for HIV

Post-exposure prophylaxis (PEP) for HIV and STIs

Prevention of vertical transmission of HIV, syphilis and HBV

Hepatitis B vaccination

Addressing chemsex

Diagnosis

HIV testing services

STI testing

Hepatitis B and C testing

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Recommended packages of interventions for each key population

	MSM	PWID	TGD	SW	PRIS
Diagnosis					
HIV testing services	x	x	x	x	x
STI testing	x	x	x	x	x
Hepatitis B and C testing	x	x	x	x	x
Screening, diagnosis, treatment and prevention of HIV associated tuberculosis (TB)	x	x	x	x	x

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Consolidated guidelines on HIV, viral hepatitis and STI prevention, diagnosis, treatment and care for key populations: policy brief. Geneva: World Health Organization; 2022. Licence: CC BY-NC-SA 3.0 IGO.

Frequency of testing:

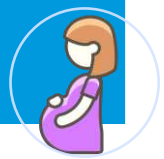
- For those at **risk of HIV infection**: at least once a year and up to every three months (depending on ongoing risk, sexual behaviour, previous STIs history, PrEP and PEP use and local HIV prevalence or incidence).
- For those at **risk of HBV infection**: based on vaccination history - test those at risk who have not had a complete course of HBV vaccinations (or unknown vaccination history); retesting at least once a year for those with an ongoing risk.
- For those at risk of **HCV infection** – at least once a year depending on risk profile.

Where and when?

Mandatory HIV/HBV/HCV/Syphilis screening: blood donors

Antenatal care

- HIV, syphilis and HBsAg tests should be offered at least once and as early as possible in pregnancy, ideally at the first ANC visit



OAMT sites

- Testing for HIV, HBV, HCV, STIs and TB as part of recommended package for people who inject drugs
- "one-stop-shop" model

PrEP sites

- Testing for HBsAg and anti-HCV is strongly encouraged at or within 1 to 3 months of PrEP initiation
- STIs testing at initiation and regularly thereafter

Prisons

- Easy access to voluntary HIV, HBV, HCV and STIs testing services at any time during their detention
- TB screening and active case-finding

KPs CBOs

- HIV testing should be offered to all KPs and their partners; retesting at least annually;
- Screening and diagnosing STIs
- HCV and HBV testing

TB facilities

- All people diagnosed with TB should be advised to have an HIV test
- Routine testing for hepatitis upon TB diagnosis may be justified.

SH or STIs clinics

- All people diagnosed with STI should be advised to have an HIV and VH tests
- People with reported high-risk exposures should be offered testing

HIV centers

- All people living with HIV should be screened for TB
- All people diagnosed with HIV should be advised to have an VH tests

PHC, Hospitals

- Provider-initiated HIV, HBV, HCV testing (esp. reported high-risk exposures)
- Conditions or symptoms indicative of HIV *(indicator condition-guided HIV testing)*

EDs?

- More evidence of the feasibility and cost-effectiveness of opt-out BBV testing

In all healthcare settings:

All patients diagnosed with HBV, HCV or HIV need to be tested for the other two viruses.

Testing should be offered to those who:

- identify as members of certain **risk groups**;
- present with **clinical symptoms** suggestive of one of three infections;
- show **laboratory markers** (including elevated liver enzymes) compatible with acute or chronic hepatitis or an **HIV indicator condition**, including any STI.

WHO recommendations for pregnant women:

- **All pregnant women** should be tested for **HIV, syphilis** and **hepatitis B** surface antigen (HBsAg) at least once and as early as possible (*including in low HIV burden settings*)
- **Dual HIV/syphilis** rapid diagnostic tests (RDTs) can be the first test in HIV testing strategies and algorithms in ANC.
- **Retest** pregnant women with unknown or HIV-negative status who are in **serodiscordant** relationships, where the partner is not virally suppressed on ART, or have other known **ongoing HIV risk** in late pregnancy – at a **third trimester** visit *(in low HIV burden settings)*
- **Couples and partners** should be offered **voluntary HIV testing services** with support for mutual disclosure

Triple Elimination initiative

- Mother-to-child transmission of **HIV, Hepatitis B** and **syphilis** is **preventable** in most cases.
- Early **access to antenatal care**, including **screening/testing for all three infections** and rapid treatment initiation, is a key element in ensuring good PMTCT results.
- Achieving and maintaining elimination requires **strong political and public health commitment** to resilient health systems that ensure continued and unimpaired access to services that deliver quality primary prevention and treatment for women and girls and their newborns (or young children), through the life-course.

Criteria for Validation of EMTCT of HIV, syphilis & hepatitis B virus (HBV)

	ELIMINATION		
	HIV	Syphilis	HBV
IMPACT criteria	• MTCT < 2% OR < 5% in breastfeeding populations • Case rate ≤ 50 per 100 000 live births	• Case rate ≤ 50 per 100 000 live births	• ≤0.1% prevalence HBsAg in ≤5-year-olds* • *Additional criteria for countries using targeted timely** Hep-BD:* MTCT rate of ≤ 2%
PROCESS criteria	• ANC1 coverage ≥ 95% • **Testing coverage** ≥ 95% • ART coverage ≥95%	• ANC1 coverage ≥ 95% • **Testing coverage** ≥ 95% • Treatment coverage >95%	*With universal BD:* • ≥90% HepB3 vaccine coverage • ≥90% timely HepB-BD coverage *With targeted BD/without universal BD:* • ≥90% HepB3 vaccine coverage • ≥90% HepB timely BD coverage • >90% **coverage of maternal HBsAg testing** • ≥90% coverage with antivirals for those eligible***

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*For regions and countries with a long history of high hepatitis B vaccination coverage and those that already conduct school-based serosurveys, there could be flexibility to conduct serosurveys in older children, >5 years of age.
**Timely birth dose (HepB-BD) is defined as within 24 hours of birth.
***With high viral load (defined as an HBV DNA level >200 000 IU/mL or, where PCR testing is not available, HBeAg positivity).

WHO recommendations for key populations (1):

- In high and low HIV-burden settings, **HIV testing** should be offered **to all key populations** and their partners in all services as an efficient and effective way to identify people with HIV.
- It is recommended to offer **retesting at least annually** to all people from key populations. Depending on individual risk behaviours, more frequent voluntary retesting can be offered.
- **Community-based HIV testing services** for key populations linked to prevention, treatment and care services are recommended, in addition to routine, facility-based HIV testing services in all settings.
- **Lay providers** who are trained can, using **rapid diagnostic tests**, independently conduct safe and effective HIV testing services.
- **HIV self-testing** should be offered as an approach to HIV testing services.
- **Social network-based** approaches can be offered as an approach to HIV testing key populations as part of a comprehensive package of care and prevention.
- **Provider-assisted referral** should be offered for all people with HIV as part of a voluntary comprehensive package of testing and care.
- **Dual HIV/syphilis RDTs** may be considered for use among key populations and can increase access to both HIV and syphilis testing services

WHO recommendations for key populations (2):

HCV

In all settings (and regardless of whether delivered through facility- or community-based or self-testing testing), it is recommended that serological testing for HCV antibody (anti-HCV) be offered, with linkage to prevention, confirmatory diagnosis, care and treatment services, to the following individuals *(184)*:

- adults and adolescents from populations most affected by HCV infection (i.e., who are either part of a population with high HCV seroprevalence or who have a history of exposure and/or high-risk behaviours for HCV infection)[18]; and
- adults, adolescents and children with a clinical suspicion of chronic viral hepatitis C (i.e., symptoms, signs, laboratory markers).

HBV

In all settings (and regardless of whether delivered through facility- or community-based testing), it is recommended that HBsAg serological testing and linkage to prevention, care and treatment services be offered to the following individuals *(184)*:

- adults and adolescents from populations most affected by HBV infection (i.e., who are either part of a population with high HBV seroprevalence or who have a history of exposure and/or high-risk behaviours for HBV infection);
- adults, adolescents and children with a clinical suspicion of chronic viral hepatitis (i.e., symptoms, signs, laboratory markers);
- all pregnant women (at least once and as early as possible, ideally at the first ANC visit); and
- sexual partners, children and other family members, and close household contacts of those with HBV infection.

WHO recommendations for key populations (3):

- **Screening and diagnosing STIs** for key populations is a crucial part of a comprehensive response to HIV and STIs.
- Offering **periodic testing for asymptomatic** urethral and rectal *N. gonorrhoeae* and *C. trachomatis* infections using nucleic acid amplification tests (NAAT) is suggested over not offering such testing for **MSM** and **trans and gender diverse** people.
- Offering periodic serological testing for asymptomatic **syphilis** infection to **MSM** and **trans and gender diverse** people is strongly recommended over not offering such screening.
- WHO suggests offering periodic screening for **asymptomatic** sexually transmitted infections (chlamydia, gonorrhoea and syphilis) to **sex workers**.
- **Self-collection** of samples for *Neisseria gonorrhoeae* and *Chlamydia trachomatis* should be made available as an additional approach to deliver STI testing services

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Emerging evidence:

THE LANCET *Regional Health* Europe

- Widespread screening for HIV and syphilis is an effective way to reduce their prevalence and associated disease.
- For other STIs such as *Neisseria gonorrhoeae* and *Chlamydia trachomatis*, the review reveals that the **evidence** that screening reduces infection prevalence and associated disease is **weak**.
- There is growing evidence of **harm**s from screening that might outweigh any benefits.
- The harms include the **increased consumption of antimicrobials** that follows frequent screening and increased detection of asymptomatic STIs in key populations, such as MSM and men on PrEP, and associated risk of **antimicrobial resistance** in target and non-target organisms.
- There may also be **psycho-social harm** associated with an STI diagnosis.
- ***"We conclude that in the absence of symptoms, in high STI prevalence populations frequent STI screening should be limited to HIV and syphilis."***

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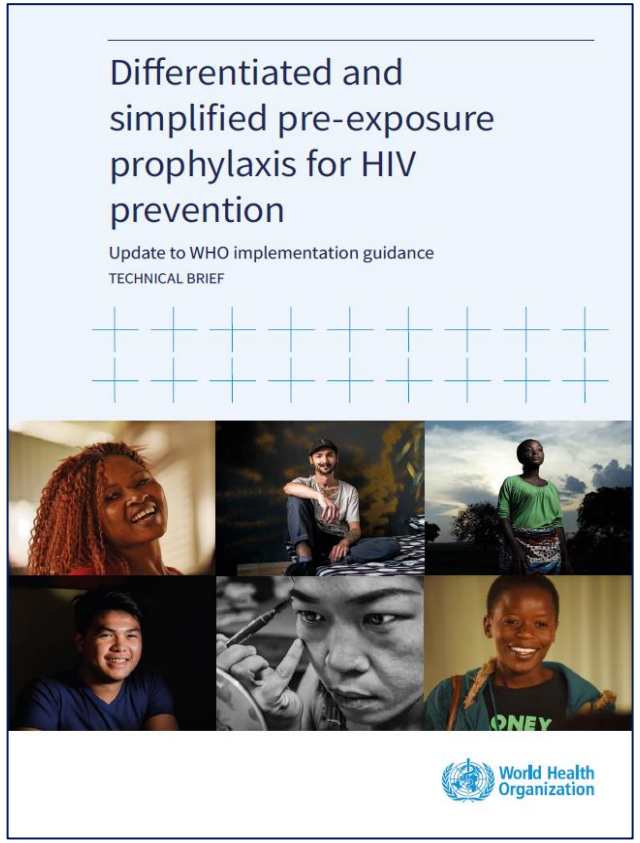
Source: Management of asymptomatic sexually transmitted infections in Europe: towards a differentiated, evidence-based approach - The Lancet Regional Health – Europe

Person- and community-centeredness of the updated guidance

- *A **differentiated PrEP service delivery** approach is **person- and community-centred** and adapts services to the **needs and preferences of the people who are interested in and could benefit from PrEP.***
- *Differentiated PrEP service delivery may also support more **efficient and cost-effective** use of health care resources.*



- **Where?** PHC facility, community setting, virtual setting
- **Who?** Physician, nurse, pharmacist, peer
- **When?** Monthly, every 3 months, every 6 months
- **What?** Service package: STIs, VH, vaccination, etc.

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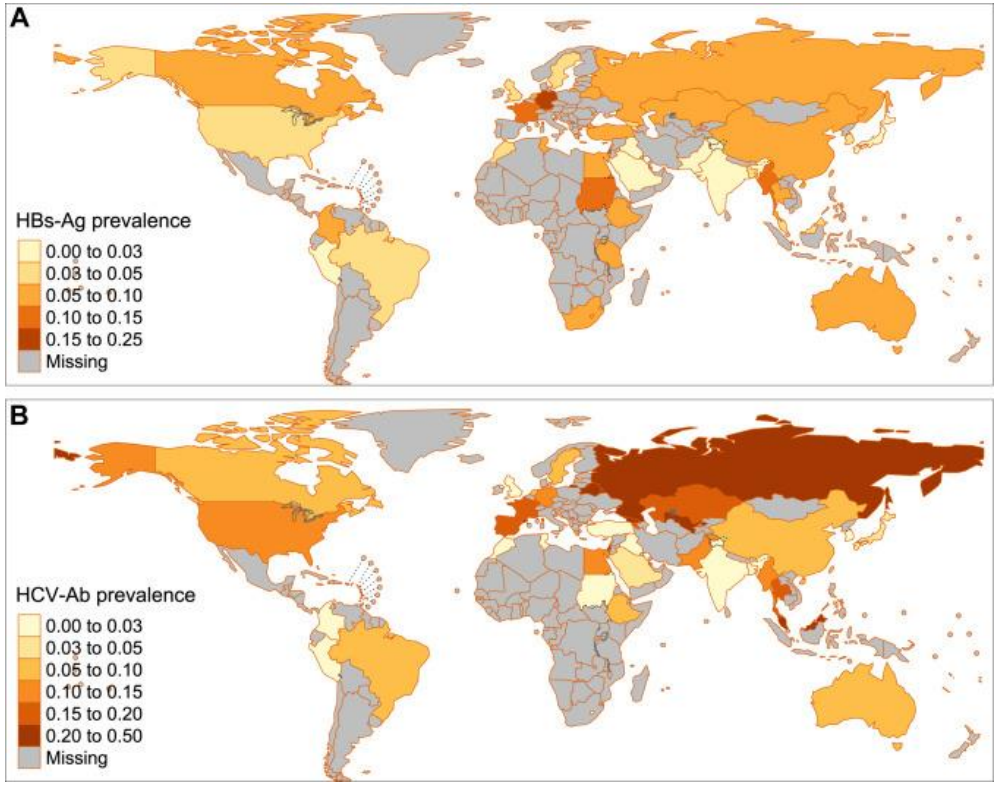
WHO Consolidated guidelines on HIV testing services:

- Governments should **revisit age-of-consent policies**, considering the need to uphold **adolescents**' rights to make choices about their own health and well-being (with consideration for different levels of maturity and understanding).

WHO-commissioned systematic review demonstrated that the **prevalence of chronic hepatitis C virus (HCV)** infection is high **among patients with tuberculosis (TB)**



- The **global** pooled seroprevalence was **5.8%** (95% CI 5.0–6.8) for HBs-antigen and **10.3%** (95% CI 8.4–12.3) for HCV-antibodies.
- Pooled **HCV prevalence** was **highest in the WHO European Region at 17.5%** (95% CI 12.2–23.5).
- In studies among TB patients who inject drugs, HCV prevalence was **92.5%** (95% CI 80.8–99.0).
- Pooled HCV-antibody seroprevalence among patients with TB was **higher than in the general population** in all six WHO regions.
- **Routine testing for hepatitis** upon TB diagnosis may be justified.

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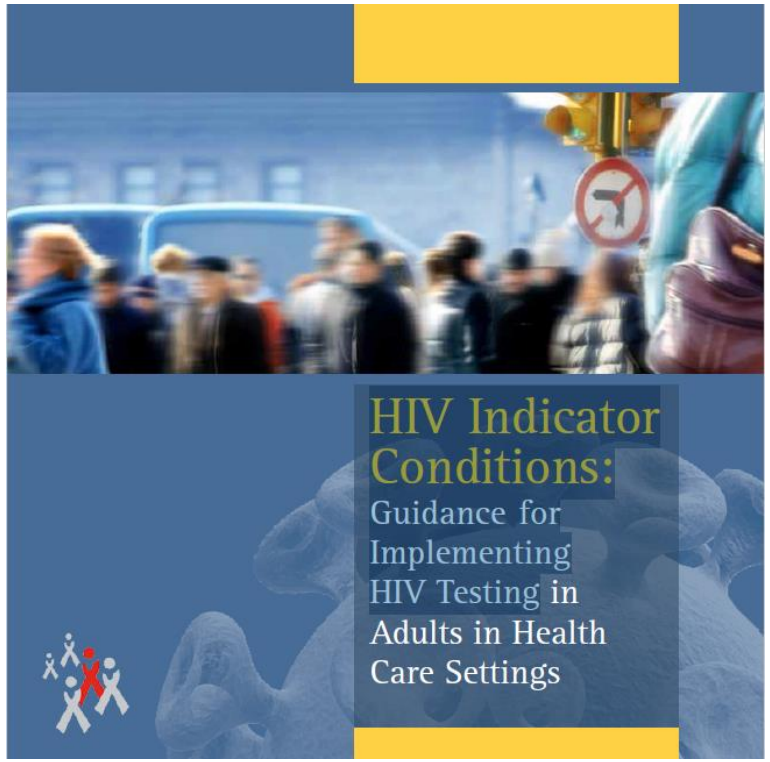
Source: https://www.thelancet.com/journals/eclinm/article/PIIS2589-5370(23)00115-3/fulltext

Global prevalence of hepatitis B or hepatitis C infection among patients with tuberculosis disease: systematic review and meta-analysis

Ioana D. Olaru • Mina Beliz Meier • Fuad Mirzayev • Nevena Prodanovic • Philip J. Kitchen • Samuel G. Schumacher • Claudia M. Denkinger • Show less



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1. Conditions which are AIDS defining among PLHIV*

Strongly recommend testing:

Neoplasms:
- Cervical cancer
- Non-Hodgkin lymphoma
- Kaposi's sarcoma

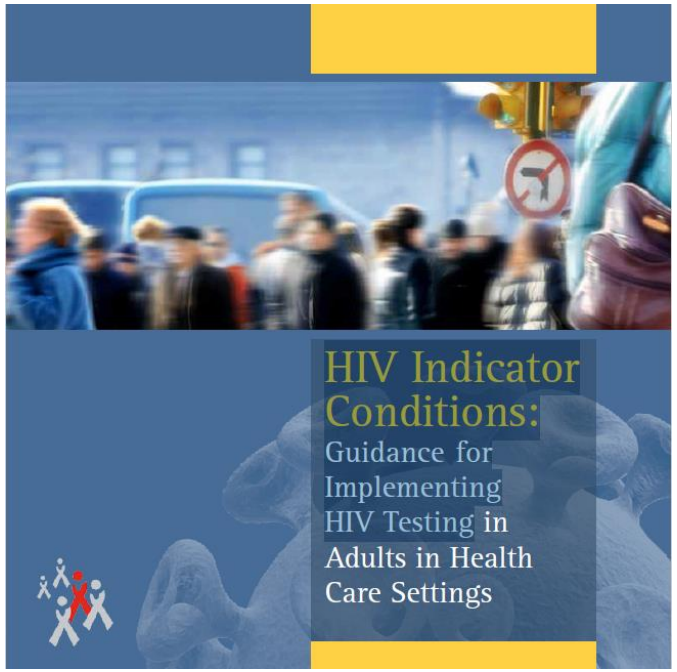
Bacterial infections
- Mycobacterium Tuberculosis, pulmonary or extrapulmunary
- Mycobacterium avium complex (MAC) or Mycobacterium kansasii, disseminated or extrapulmonary
- Mycobacterium, other species or unidentified species, disseminated or extrapulmunary
- Pneumonia, recurrent (2 or more episodes in 12 months)
- Salmonella septicaemia, recurrent

Viral infections
- Cytomegalovirus retinitis
- Cytomegalovirus, other (except liver, spleen, glands)
- Herpes simplex, ulcer(s) >I month/bronchitis/pneumonitis
- Progressive multifocal leucoencephalopathy

Parasitic infections
- Cerebral toxoplasmosis
- Cryptosporidiosis diarrhoea, >1 month
- Isosporiasis, >1 month
- Atypical disseminated leismaniasis
- Reactivation of American trypanosomiasis (meningoencephalitis or myocarditis)

Fungal infections
- Pneumocystis carinii pneumonia
- Candidiasis, oesophageal
- Candidiasis, bronchial/ tracheal/ lungs
- Cryptococcosis, extra-pulmonary
- Histoplasmosis, disseminated/ extra pulmonary
- Coccidiodomycosis, disseminated/ extra pulmonary
- Penicilliosis, disseminated

HIV in Europe. *HIV Indicator Conditions: Guidance for Implementing HIV Testing in Adults in Health Care Settings.* Copenhagen: HIV in Europe; 2012.



2a. Conditions associated with an undiagnosed HIV prevalence of >0.1 %**

Strongly recommend testing:

- Sexually transmitted infections
- Malignant lymphoma
- Anal cancer/dysplasia
- Cervical dysplasia
- Herpes zoster
- Hepatitis B or C (acute or chronic)
- Mononucleosis-like illness
- Unexplained leukocytopenia/ thrombocytopenia lasting >4 weeks
- Seborrheic dermatitis/exanthema
- Invasive pneumococcal disease
- Unexplained fever
- Candidaemia
- Visceral leishmaniasis
- Pregnancy (implications for the unborn child)

2b. Other conditions considered likely to have an undiagnosed HIV prevalence of >0.1%

Offer testing:

- Primary lung cancer
- Lymphocytic meningitis
- Oral hairy leukoplakia
- Severe or atypical psoriasis
- Guillain–Barré syndrome
- Mononeuritis
- Subcortical dementia
- Multiplesclerosis-like disease
- Peripheral neuropathy
- Unexplained weightloss
- Unexplained lymphadenopathy
- Unexplained oral candidiasis
- Unexplained chronic diarrhoea
- Unexplained chronic renal impairment
- Hepatitis A
- Community-acquired pneumonia
- Candidiasis

3. Conditions where not identifying the presence of HIV infection may have significant adverse implications for the individual's clinical management despite that the estimated prevalence of HIV is most likely lower than 0.1%

Offer testing:

- Conditions requiring aggressive immuno-suppressive therapy:
  - Cancer
  - Transplantation
  - Auto-immune disease treated with immunosuppressive therapy
- Primary space occupying lesion of the brain.
- Idiopatic/Thrombotic thrombocytopenic purpura

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Brighton Study 2000-2005: Missed opportunities for diagnosis

62% accessed **secondary care** in the preceding year:

- 26% with an HIV-related problem;

80% had been seen in **primary care**

- 60% with an HIV-related problem

Ottewil, BHIVA 2006l

BMJ Open

Missed opportunities for earlier diagnosis of HIV in patients who presented with advanced HIV disease: a retrospective cohort study

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- Old age and being heterosexual were significant risk factors for being diagnosed late.
- **All patients with advanced disease** had at least one clinical indicator disease (CID) that did not lead to an HIV test in the 5 years prior to AIDS diagnosis.
- The median time between CID and AIDS diagnosis was **24 months** (IQR 10–30).
- **60%** of CIDs were missed by a general practitioner and **40%** by a specialist.

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Missed opportunities for HIV testing in people diagnosed with HIV in Estonia, 2014-2015

- Of 538 newly diagnosed HIV cases, **82%** had visited healthcare services at least once during the 2 years before HIV diagnosis; the mean number of visits was **9.1**.
- Of these, **31%** had at least **HIV indicator condition** on at least one of their treatment invoices.
- In 390 cases of HIV indicator conditions, **only 5% were tested for HIV**.

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Missed opportunities for HIV testing in people diagnosed with HIV, Estonia, 2014 to 2015

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https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2019.24.15.1800382

Testing as the Gateway to Prevention and Treatment

HepHIV 2023
13-15 NOVEMBER·MADRID

HIV TREATMENT

People diagnosed with HIV should receive daily ART to suppress viral load and prevent HIV transmission

PREVENTION

People without HIV, but at risk of becoming infected, can take PrEP for prevention. Basic combination prevention measures should be provided by the national HIV prevention program

Key components of HIV control programs

HIV TESTING

HIV test determines the next steps and whether treatment or prevention is needed (including PrEP)

Some important remaining challenges:

- The **individual disease programmes** for HIV, VH and STIs are **centralized** in their delivery and lack common service delivery platforms.
- Insufficient **funding** – neglected VH and STIs services.
- **National policies** are not updated in line with recent WHO recommendations and emerging evidence.
- **Criminalization!**
- High levels of **stigma and discrimination** (in healthcare settings – especially important!).
- **Coverage with prevention programmes for KPs** remains very low.
- Competing **clinical priorities** for healthcare professionals.
- Lack of staff **knowledge and training**. Patient not perceived to be at risk.
- Many **patient level barriers**: low risk perception, fear of HIV infection and its health consequences, fear of disclosure, denial, difficulty accessing services.

What to do?

- Addressing **stigma and discrimination**, removing legal barriers, including **criminalization**!
- The provision of UHC should have a **special focus on key populations and those most at risk** of HIV, VH and STIs.
- **Strengthening the role of PHC** is critical to developing inclusive, effective and efficient HIV, VH and STI services.
- Implementing **differentiated service delivery** to meet the diverse needs of specific populations and settings.
- **Review and reform of legislation and policies** that create barriers to appropriate evidence-based interventions and services.
- Ensure **coordination** with other health services supported by greater public and political awareness and **adequate funding**.
- **Education and training** programmes for healthcare staff, campaigns and clinical decision-making tools can support the offer and uptake of integrated testing strategies.
- **Normalising** HIV, HBV and HCV testing in all healthcare settings (to reduce stigma and increases testing uptake)
- **Sexuality education**. “Let’s talk about sex!”

Thank you for your attention!

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