

## WHO HEALTH EVIDENCE NETWORK SYNTHESIS REPORT 74

# What is the evidence on existing national policies and guidelines for delivering effective tuberculosis, HIV and viral hepatitis services for refugees and migrants among Member States of the WHO European Region?

Joshua Nazareth | Rebecca F Baggaley | Pip Divall | Daniel Pan | Christopher A Martin | Mikhail Volik | Laura B Nellums | Manish Pareek



**World Health  
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## Abstract

The WHO Regional Office for Europe has developed several action plans to deliver effective tuberculosis (TB)-, viral hepatitis- and HIV-related services for refugees and migrants within the WHO European Region. This report examines the available evidence on existing national policies and guidelines for delivering effective TB-, viral hepatitis- and HIV-related services for refugees and migrants in Member States of the WHO European Region.

The review highlighted extreme heterogeneity between countries in the Region in the availability of relevant national guidelines and recommendations and in implementation of these documents. In the 53 Member States of the WHO European Region, only 15 primary policy/guideline documents relating to migrants and viral hepatitis, HIV or TB were identified. The promotion in Member States of policies advocated by WHO and the European Centre for Disease Prevention and Control requires an understanding of the macro-level barriers to implementation. Furthermore, the design of national programmes needs to take account of barriers at the micro (individual) and meso (community) levels to uptake by migrant populations and to the adoption of policies by health-care practitioners.

## Keywords

TUBERCULOSIS, HEPATITIS, HIV, EUROPE, POLICY, REFUGEE, MIGRANTS

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## ABBREVIATIONS

ART	antiretroviral therapy
BCG	bacillus Calmette–Guérin
CXR	chest X-ray radiography
ECDC	European Centre for Disease Prevention and Control
EEA	European Economic Area
EU	European Union
HBsAg	hepatitis B surface antigen
HBV	hepatitis B virus
HCV	hepatitis C virus
HEN	Health Evidence Network
HIS	health information systems
ICER	incremental cost–effectiveness ratio
IGRA	interferon-gamma release assay
LTBI	latent tuberculosis infection
MDR-TB	multidrug-resistant tuberculosis
PrEP	pre-exposure prophylaxis (for HIV)
STI	sexually transmitted infection
TB	tuberculosis
TST	tuberculin skin test
UNAIDS	Joint United Nations Programme on HIV/AIDS

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### Authors

Joshua Nazareth<sup>1</sup>

Clinical Research Fellow, Department of Respiratory Sciences, University of Leicester and Department of Infectious Diseases and HIV Medicine, University Hospitals of Leicester National Health Service Trust, Leicester, United Kingdom

Rebecca F Baggaley<sup>1</sup>

Wellcome Trust Institutional Strategic Support Fund Research Fellow, Department of Respiratory Sciences, University of Leicester, Leicester, United Kingdom

Pip Divall

Clinical Librarian Services Manager, University Hospitals of Leicester Clinical Librarian Service, University Hospitals of Leicester NHS Trust, Leicester, United Kingdom

Daniel Pan

National Institute for Health Research Academic Clinical Fellow in Infectious Diseases, Department of Respiratory Sciences, University of Leicester, and Specialist Registrar in Infectious Diseases and General Medicine, Department of Infectious Diseases and HIV Medicine, University Hospitals of Leicester NHS Trust, Leicester, United Kingdom

---

1. These authors contributed equally to this work.

Christopher A Martin

National Institute for Health Research Academic Clinical Fellow in Infectious Diseases, Department of Respiratory Sciences, University of Leicester and Department of Infection and HIV Medicine, University Hospitals of Leicester NHS Trust, Leicester, United Kingdom

Mikhail Volik

Independent Consultant, Joint Infectious Diseases, Division of Country Health Programmes, WHO Regional Office for Europe

Laura B Nellums<sup>2</sup>

Assistant Professor in Global Health, School of Medicine, Faculty of Medicine & Health Sciences, University of Nottingham, Nottingham, United Kingdom

Manish Pareek<sup>2</sup>

Associate Clinical Professor in Infectious Diseases, Department of Respiratory Sciences, University of Leicester and Honorary Consultant in Infectious Diseases, Department of Infection and HIV Medicine, Leicester Royal Infirmary, Leicester, United Kingdom

## Peer reviewers

Sally Hargreaves

Associate Professor in Global Health, Lead, The Migrant Health Research Group, Institute for Infection and Immunity, St George's Hospital, University of London, London, United Kingdom

Daniel Kashnitsky

Academic Relations Coordinator, Regional Expert Group on Migration and Health in Eastern Europe and Central Asia, Moscow, the Russian Federation

## Technical contributors from WHO TB, HIV, Hepatitis and Migration networks

Anton Basenko

Program Manager, Alliance for Public Health, Kyiv, Ukraine

Cristina Celan

Center for Health Policies and Studies (PAS Center), Chisinau, Republic of Moldova

---

2. Joint senior authors.



Daria Chaadaeva

Department of International Cooperation and Public Relations, Ministry of Health,  
Moscow, Russian Federation

Daniel Chemtob

National TB and HIV Programmes Manager, Department of Tuberculosis and  
AIDS, Ministry of Health, Jerusalem, Israel

Gianfranco Costanzo

Health Director, National Institute for Health, Migration and Poverty (INMP),  
WHO Collaborating Centre on Health and Migration Evidence and Capacity  
Building, Rome, Italy

Yuval Dadon

Director, National Program for HCV Elimination, Deputy Director Office, Ministry  
of Health, Jerusalem, Israel

Gerard de Vries

*Arts Maatschappij en Gezondheid/epidemioloog* [Physician Society and Health/  
Epidemiologist], National Tuberculosis Control Coordinator, RIVM National Institute  
for Public Health and the Environment, Bilthoven, Netherlands

Julia del Amo

National Plan against AIDS, Ministry of Health, Madrid, Spain

Svetlana Doltu

Member, Council for Preventing and Eliminating Discrimination and Ensuring  
Equality and Council for the Prevention of Torture (National Preventive Mechanism),  
Chisinau, Republic of Moldova

Mona Drage

Managing director, LHL International Tuberculosis Foundation, Oslo, Norway

Eleanora Gvozdeva (Hvazdziova)

Programme Adviser, UNAIDS Regional Support Team for Eastern Europe and  
Central Asia, Moscow, Russian Federation

Evika Karamagioli

Scientific Associate, Global Health – Disaster Medicine MSc programme, School  
of Medicine, National and Kapodistrian University of Athens, Athens, Greece

Daniel Kashnitsky

Academic Relations Coordinator, Regional Expert Group on Migration and Health in Eastern Europe and Central Asia, Moscow, Russian Federation

Dzmitry Klimuk

Republican Scientific and Practical Center of Pulmonology and Tuberculosis, Minsk, Belarus

Justyna D. Kowalska

Professor of Medicine, Medical University of Warsaw, Warsaw, Poland

Alex Schneider

Founder, Life4me+ to fight AIDS, Hepatitis C and Tuberculosis, Lenzburg, Switzerland

Leuconoe Grazia Sisti

Health Staff, Health Directorate, Italian National Institute for Health, Migration and Poverty (INMP), WHO Collaborating Centre on Health and Migration Evidence and Capacity Building, Rome, Italy

Sergey Sterlikov

Deputy Head for Programme Monitoring, Central Scientific and Research Institute of Health Organization and Informatization, Ministry of Health, Moscow, Russian Federation

Barbara Suligoi

Director, Centro Operativo AIDS, Istituto Superiore di Sanità, Rome, Italy

Maria Elena Tosti

Centro Nazionale per la Salute Globale, National Center for Global Health, Istituto Superiore di Sanità, Italy

Fatima Wurie

National Migrant Health Lead & Inclusion Health Officer; Health Improvement: Alcohol, Drugs, Tobacco & Justice Division; Public Health Scientist (Inclusion Health|translations and accessibility of guidance); COVID-19 Public Health Advice, Guidance and Expertise (PHAGE) function; Public Health England

Dominik Zenner

Senior Clinical Lecturer in Infectious Disease Epidemiology, Queen Mary University of London, London, United Kingdom

## **Editorial team, WHO Regional Office for Europe**

### **Division of Country Health Programmes**

Nino Berdzuli, Director

Askar Yedilbayev, Team Lead, Tuberculosis and Drug Resistant Tuberculosis

Nicole Seguy, Team Lead, HIV, Hepatitis and Sexually Transmitted Infections

Elena Vovc, Technical Officer, HIV

Antons Mozalevskis, Medical Officer, Viral Hepatitis and HIV

Andrei Dadu, Medical Officer, Tuberculosis

### **Division of Country Support, Emergency Preparedness and Response**

Gundo Aurel Weiler, Director

Kristina Mauer-Stender, Team Lead, Country Implementation Support

Jozef Bartovic, Technical Officer, Migration and Health

Elisabeth Waagensen, Technical Officer, Migration and Health

### **Health Evidence Network (HEN)**

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# SUMMARY

## The issue

Migrants in many countries in the WHO European Region are disproportionately affected by communicable diseases, including tuberculosis (TB), HIV and viral hepatitis, compared with the host population. The 2016 United Nations Summit for Refugees and Migrants highlighted the need for strategies to address the health and human rights needs of migrant populations. The WHO Regional Office for Europe has developed several action plans to address migrant health, TB, HIV and viral hepatitis; and the Essential HIV care package for migrants in central Asia. Despite these calls for action, there are inequities in the accessibility and quality of health services available to refugees and migrants in the Region. Front-line clinicians are also unclear on the approach to managing communicable diseases in migrants, leading to heterogeneity across Member States. This has consequences for health outcomes and will ultimately impact the ability to meet Regional elimination targets for those diseases. This report aimed to identify national policies, strategies and guidelines on TB, HIV and viral hepatitis that have been developed and implemented in Member States of the WHO European Region in order to better understand how Member States' services are making progress in implementing these action plans to prevent and respond to TB, HIV and viral hepatitis for refugees and migrants. It provides an overview of Member States' adherence to WHO-recommended actions and of remaining gaps that need to be addressed.

## The synthesis question

This report synthesizes the current available evidence to address the question: "What is the evidence on existing national policies and guidelines for delivering effective tuberculosis, HIV and viral hepatitis services for refugees and migrants among Member States of the WHO European Region?"

## Types of evidence

Evidence was obtained through a systematic review of the academic and grey literature in English and Russian and through ministry of health websites and consultation with the WHO TB, HIV, Hepatitis and Migration networks. A total of 205 publications were included in the review.

## Results

Most identified publications were reviews and empirical studies of policy analyses and surveys of national policies and guidelines. Relatively few primary policy/guideline documents related to migrants and TB, HIV or viral hepatitis (i.e. caused by hepatitis B virus (HBV) and hepatitis C virus (HCV)) were identified. The review found extreme heterogeneity in the implementation of recommendations among Member States of the WHO European Region. The availability of relevant official national policies and guidelines for Member States was sparse and when these were identified they often did not align with WHO recommendations. The promotion of WHO- and European Centre for Disease Prevention and Control (ECDC)-advocated policies in Member States requires an understanding of the macro-, meso- and micro-level barriers that prevent migrants from accessing health-care services. The review also identified research gaps and a lack of consensus on the cost-effectiveness of interventions targeted towards migrants for all four of the target infectious diseases.

## Policy considerations

Based on the findings of this review, the main policy considerations for Member States to improve TB, HIV and viral hepatitis services for refugees and migrants among Member States of the WHO European Region are to:

- improve the online accessibility of national policies and guidelines on the infectious disease prevention, diagnosis, treatment and care for refugees and migrants, including reporting the evidence base used in their development;
- support WHO in opening dialogues with Member States whose policies do not align with WHO and ECDC recommendations on delivering TB, HIV and viral hepatitis services to refugees and migrants, to elicit the reasons for the current policies and identify the barriers to policy change;
- increase national efforts to inform and combat misinformation about migrants, address stigma and discrimination, and encourage and improve inclusive approaches, including by promoting health literacy and incorporating advice from experts on behaviour;
- design and implement initiatives to improve awareness in refugees and migrants of relevant policies and guidelines that promote patient rights;
- strengthen health systems by:
  - providing awareness training on migrant health for health-care practitioners to increase their adherence to national policies and guidelines; and

- developing initiatives to improve service delivery for refugees and migrants by removing barriers to access and utilizing facilitators;
- strengthen routine health data collection to improve monitoring of migration health data and optimize targeted screening strategies by:
  - integrating migration health data into national health information systems (HIS);
  - disaggregating health data by migrant subgroups using WHO-recommended core variables (country of birth, country of citizenship, month and year of arrival, and country of birth of both parents) plus a second set of recommended variables to enable disaggregation by subgroups of migrants (i.e. reasons for migration, knowledge of official language(s) of host country, ever resided abroad<sup>3</sup> and legal status); and
  - introducing dynamic reporting of estimates of infectious disease prevalence in different migrant populations; and
- conduct comprehensive assessments of barriers to health (including cultural and language barriers, physical barriers, legal barriers and entitlements, fear of registration and deportation, out-of-pocket payments, discrimination and stigma, insufficient training for health and social services providers) with the involvement of refugee and migrant groups.

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3. That is, in a country other than the host country or country of origin.



# 1. INTRODUCTION

## 1.1 Background

### 1.1.1 Infectious disease epidemiology among migrants in the WHO European Region

The prevalence of tuberculosis (TB; active and latent) HIV infection, and chronic viral hepatitis (specifically, hepatitis B virus (HBV) and hepatitis C virus (HCV) infections) may be higher in refugees and migrants (1,2). The reasons for this are complex and multifactorial, but risk factors related to origin, transit and destination countries can include a high prevalence of infection, underresourced health-care systems, low immunization coverage, lack of accessible health care and poor living conditions (3–5). Undetected and untreated TB, HIV, HBV and HCV infections lead to poor health outcomes: a study of migrant mortality in five western European countries found higher mortality rates in most migrant populations due to infectious diseases and homicide, with TB and HIV/AIDS being the most significant infectious diseases (6).

Before the emergence of new coronavirus SARS-CoV-2, TB was the leading cause of mortality from a single infectious agent worldwide (7). Options for screening for active TB include chest X-ray radiography (CXR) and screening for symptoms. Latent TB infection (LTBI) is identified using the tuberculin skin test (TST) and, more recently, from blood samples using the interferon-gamma release assay (IGRA). Although the TB rate in the WHO European Region is decreasing, a large proportion of cases are detected in migrants (in this report, defined as foreign-born individuals), but with significant heterogeneity between Member States (8–11). Patients of foreign origin with TB make up 8.7% of all notified TB cases across the Region, but represent 34.5% of cases overall in European Union (EU)/European Economic Area (EEA) countries and only 2.2% overall in non-EU/EEA countries and areas. In several Member States, a large majority of patients with TB are of foreign origin: Malta (95.9%), Luxembourg (90.0%), Cyprus (89.9%), Norway (88.5%), Israel (86.6%), Iceland (84.6%), the Netherlands (74.7%), the United Kingdom (70.4%) and Switzerland (68.2%). In contrast, they represent 0% of cases in Bulgaria and 0.4% in Romania. Except for Malta, countries with TB notification rates higher than 10 cases per 100 000 population reported that less than 25% of cases were of foreign origin (8). The proportion of cases in foreign-origin versus native individuals varies significantly between countries, highlighting the need for differing approaches to TB screening and disease prevention. However, migrant-specific interventions are

not only required in countries with a higher proportion of foreign-origin cases: countries such as Turkey and the Russian Federation, which have a low proportion of foreign-origin cases, also report considerable numbers of TB cases among foreign-born residents (8).

LTBI is an asymptomatic, non-infectious form of TB. With failure of the immune system to control pathogen replication, there is the potential for active TB to develop, leading to symptoms and potential transmission. Although the risk of reactivation in migrants with untreated LTBI is unclear, most cases occur within two years of arrival in the destination country. A large United Kingdom study of untreated migrants with a positive TST estimated the rate of TB progression as 16.3% in the 15-year period following arrival (12,13). In low-incidence countries, most TB cases are caused by the reactivation of remotely acquired LTBI rather than by recent exposure to pulmonary TB (14). Therefore, control efforts in these countries have focused on LTBI screening and treatment to reduce the burden of active disease.

Multidrug-resistant TB (MDR-TB) is defined as TB that is resistant to both isoniazid and rifampicin. These are the two main drugs used to treat TB, making treatment of MDR-TB challenging. In Europe, most MDR-TB is seen in migrants (15). Migrant populations also have higher proportions of TB/HIV coinfection compared with the native population and may experience more barriers to treatment adherence and completion (16,17).

Unlike some other WHO regions, new HIV diagnoses and TB/HIV coinfection are still of significant concern in the WHO European Region (18). In 2019 migrants accounted for 44% of new HIV diagnoses in the EU/EEA (19). Although some migrants may acquire HIV infection in their country of origin, evidence suggests that more than half of new HIV diagnoses among migrants are confirmed after their arrival in host countries in the Region (20–23). In particular, HIV prevalence in migrants from sub-Saharan Africa generally reflects that of the country of origin, with increased amounts of heterosexually acquired HIV, more women than men affected and an increasing proportion in men who have sex with men (24–26).

Chronic viral hepatitis (as a result of HBV or HCV infection) remains a public health threat in the WHO European Region. Screening for HBV, HCV and HIV is conducted using the identification of serological markers in an individual's serum or plasma. Most cases of chronic HBV infection in northern and western European countries are detected in migrants, mostly from areas of high (> 8% prevalence of hepatitis B surface antigen (HBsAg)) and intermediate (2–8% prevalence of





HBsAg) endemicity (27). Evidence also suggests that the prevalence of chronic HBV infection may be higher in refugees and asylum seekers compared with all migrants (9.6% vs 5.1%) (28). A large proportion of individuals with chronic HCV infection are asymptomatic and undiagnosed, making it difficult to estimate the true disease burden in the migrant population. Approximately 80% of migrants from outside the EU/EAA originate from HCV-endemic countries; in this subgroup, the prevalence of chronic HCV infection is likely similar to that of the country of origin (29). Migrants from HCV-endemic countries contribute disproportionately to HCV cases (14%) in the EU/EEA and account for up to half of those living with chronic HCV in some low-HCV-prevalence EU/EEA countries (30).

Approaches to screening for these infectious diseases vary considerably in the WHO European Region, with no agreement on the most effective and cost-effective approaches to targeted interventions for migrants or which have the best uptake and treatment outcomes (9,31,32). This lack of consensus contributes to heterogeneity in the policies for migrant infectious disease screening across the Region.

### 1.1.2 Migration in the WHO European Region

Migration is rising globally and in recent years has increased substantially in the WHO European Region (33,34). In 2020 migrants formed almost 13% of the total population of the Region (35). Drivers for migration into and within the WHO European Region include the influence of globalization, conflict, climate change, historical links, and the availability of resources and work for local populations (36). Consequently, the migrant population in the Region is extremely heterogeneous and includes economic migrants and forced migrants, encompassing refugees, asylum seekers and some undocumented migrants. Accordingly, there is disagreement about how these groups should be defined, even within Member States of the Region (37). This report uses definitions of key migrant types taken from the International Organization for Migration 2019 Glossary on Migration (see Annex 2) (38). Unless otherwise specified, the term migrants refers to all groups of migrants, including asylum seekers and refugees. Many regional datasets and reports compare populations identified as foreign-born or non-EU born with native populations or refer to migrants or immigrants; therefore, this report uses the same terms when describing these datasets.

Unsurprisingly, the health-care needs and health-care-seeking behaviour of migrants vary widely among different migrant groups and are difficult to generalize. Notably,

most migration occurs from areas with a higher prevalence of TB, HIV infection and viral hepatitis to regions with low prevalence or as circular migration within high endemicity countries. This has led to increased focus on the implications for health services and public health infrastructure in first-arrival, transit and destination countries across the Region. In response, strategies and action plans have been developed to ensure accessible and quality health care for migrants that meets their health needs and human rights.

### 1.1.3 Action plans for the WHO European Region

The 2016 United Nations Summit for Refugees and Migrants highlighted the need for strategies to address the health and human rights needs of migrant populations (39). The WHO Regional Office for Europe has developed action plans for migrant health (40), TB (41), HIV (42) and viral hepatitis (43) in the Region, as well as the Essential HIV care package for migrants in central Asia (44,45). In recognition that TB, HIV and viral hepatitis are influenced by a range of social determinants of health, the Regional Office published a common position paper based on strategic documents, action plans and operational frameworks from intersectoral partners to define shared principles and key actionable areas within and beyond the health sector to address TB, HIV and viral hepatitis in Europe and central Asia (46).

### 1.1.4 Aims of this report

This systematic review aimed to examine the evidence base to address the question: "What is the evidence on existing national policies and guidelines for delivering effective tuberculosis, HIV and viral hepatitis services for refugees and migrants among Member States of the WHO European Region?" The review analysed national policies, strategies and guidelines that have been developed and implemented to address migrant health and TB, HIV and viral hepatitis and provides an overview of areas where national policies align with WHO-recommended actions and gaps that still need to be addressed. Attempts by specific countries to overcome common barriers and align with WHO recommendations are presented as case studies.

Secondary aims were to (i) describe how cost-effectiveness or national funding allocation is considered in national legislation, policies and guidelines for the implementation of TB, HIV, or viral hepatitis services for refugees and migrants and (ii) evaluate the evidence on facilitators and barriers (at the macro, meso and micro levels) to access for migrants to these health services.



## 1.2 Methodology

Full details of the methodology are given in Annex 1.

Briefly, literature searches of peer-reviewed and grey literature were conducted in English on 30 November 2020 and in Russian on 23 March 2021 to identify relevant articles published since inception of the databases. Other relevant articles were recommended by team members of the WHO networks for TB, HIV, Hepatitis and Migration.

In all, 1310 relevant articles in English or Russian were identified through the database searches, with a further 53 obtained through consultation with members of WHO TB, HIV, Hepatitis and Migration networks and 30 from searches of ministry of health websites of WHO European Region Member State. In total, 1390 articles were identified after removal of duplicates; of these, 470 were selected for full-text review and a further 64 were obtained from co-authors/collaborators and through snowball searching. In total, 259 fulfilled the inclusion criteria, including 104 articles that are not directly cited in the review (listed in Annex 3) and 155 that are cited (8,13,30,32,39,42–44,47–193). Following a full review and data extraction, a framework analysis (194) was conducted to derive an overview of areas (i) in which Member States' policies align with WHO-recommended actions on migrant health relating to TB, HIV and viral hepatitis and (ii) requiring further attention.

## 2. RESULTS

Of the 260 articles included in the systematic review, most were reviews of international policy, either for the WHO European Region or for the EU/EEA. Other types included policy and guideline documents, plus empirical studies reporting policy analyses and surveys of reports by country experts on national policies and guidelines (mainly covering Belgium, Cyprus, Denmark, France, Germany, Israel, Italy, the Netherlands, Norway, Spain, Sweden, Switzerland, Turkey and the United Kingdom). Across the 53 Member States of the WHO European Region, only 15 primary policy/guideline documents related to migrants and TB, HIV or viral hepatitis were identified: seven on TB (47–53), three on HIV (54–56), three on viral hepatitis (57–59) and two on a combination of these diseases (60,61).

### 2.1 TB

#### 2.1.1 WHO and ECDC recommendations

Several action plans and strategies for TB control in the WHO European Region have been published by international organizations, including the WHO and ECDC (62–65). The main goals for 2035 of the global WHO End TB Strategy (195) are to end the TB epidemic through a 95% reduction in mortality and a 90% decline in incidence (to < 10 TB cases per 100 000 population) compared with 2015, and for no affected families to face catastrophic costs due to TB (62). The WHO European Region also produced the Roadmap to implement the Tuberculosis Action Plan for the WHO European Region 2016–2020 (63), which uses the same framework as the End TB Strategy and gives special attention to the most vulnerable and marginalized populations, including migrants. Recommendations for the management of TB in migrant populations have been divided into three pillars, which form part of the End TB Strategy: migrant-sensitive care and prevention, bold intersectoral policies and systems supportive of migrants, and operational research. In addition, together with the International Organization for Migration, WHO has produced a framework for adopting the proposed actions of the End TB Strategy specifically for areas of low TB incidence, which include many countries in western Europe (64). One of the eight key interventions in the report is to address the special needs of migrants and cross-border issues (Table 1). In addition, the ECDC has also produced recommendations for the control of TB in vulnerable patients including migrants (summarized in Table 2) (65).



**Table 1. Key interventions recommended in the WHO framework for TB control in low-incidence countries**

Key intervention	Description
Ensure health-care services are accessible to all migrants	The most essential action, requiring services that are patient-centred and culturally sensitive, including efforts to overcome language and other barriers
Detailed surveillance	Including disaggregated data on migrant groups to identify those at highest risk
Empower migrant communities	TB management for migrants should be integrated within general health services, along with efforts to reach migrants in settings such as centres for refugees and asylum seekers
Systematic screening for active TB	This should occur pre-migration, at the point of arrival or after arrival
Continuous access to health care and individual follow-up	Screening for active TB does not exclude the possibility of occurrence in the future; therefore, follow-up and continuous access to health care is necessary
Follow established ethical principles for screening for infectious diseases	Screening for TB should observe human rights principles and safeguard against stigma, discrimination and deportation
Systematic screening for LTBI	Should focus on groups at high risk of exposure and of progression to active TB
Cross-border referral systems with contact tracing and information sharing	Migrants moving during treatment can continue with their treatment while minimizing the public health risk Migrants with TB should also have the right to complete treatment in the country where the diagnosis was made. This is contrary to law under the Dublin convention, which came into effect in 1997 (66): this states that EU Member States can elect to transfer asylum seekers to the country where the initial application was made, even if they are undergoing treatment for TB (67)

Source: Lönnroth et al., 2015 (64).

**Table 2. ECDC recommendations on TB control in vulnerable patients, including migrants**

Recommendation	Description
Outreach teams and mobile units	An efficient and effective way to identify and treat patients with TB from vulnerable groups
Incentives	These can motivate people to go through screening and follow their treatment once diagnosed with TB; incentives could be monetary or of material value such as tickets for public transport, food vouchers, prepaid phone cards, clothes and temporary accommodation
Involvement of key partners	This can help reach people who might be infected but are reluctant to be tested. Key partners also support people following their treatment and are crucial to help identify and find the contacts of each patient with TB
DOT	This supports patients in taking their medication; more flexible options such as DOT outside health-care settings or by nonmedical staff, or VOT can also be considered
Reminders	Using reminders (phone calls, text messages) can improve patient attendance at medical appointments and medication uptake
Integrating services	Close collaboration between TB services and existing services for vulnerable groups can improve rates of early diagnosis and treatment uptake
Promoting awareness and education	Helps tackle stigma and misconceptions

DOT: directly observed treatment; VOT: video-observed treatment.

Source: ECDC, 2016 (65).



WHO has produced several evidence-based guidance and recommendation documents to help in implementing the interventions and goals of the End TB Strategy (41,68,69). These include guidance on TB screening and treatment both for active disease and for LTBI. For active TB, WHO recommends (based on very-low-quality evidence due to a lack of available data) systematic screening in subpopulations with very high TB rates or very poor access to health care, such as refugees and migrants residing in, or coming from, settings with a high TB prevalence (68). The guidance does not give an absolute numerical definition of a high-prevalence setting, instead stating that the threshold must be adapted to the local situation and may also change over time as the TB burden and distribution change. WHO guidelines for LTBI management in high- or upper-middle-income countries with a low TB burden (annual incidence of < 100 cases per 100 000 population) conditionally recommend systematic testing and treatment of LTBI for migrants according to TB epidemiology and availability of resources (69). For LTBI testing, either the IGRA or TST should be used (a conditional recommendation, based on low to very low quality of evidence).

Finally, migrants are protected under international law from blanket restrictions on entry, stay and residence based solely on their TB status (70). Consequently, WHO has published additional guidance to ensure that sound ethics underpin implementation of the End TB Strategy (41). Although WHO guidelines on LTBI management state that migrants from countries with a high TB burden are recognized as an at-risk population that should be considered for systematic screening (69), their ethics guidance (71) states that:

the threat of latent TB infection is not a present risk but a potential future risk, whereas denying entry and work to migrants produces real hardship in the present moment for the migrants and their families

and:

the result of testing during migration should never be used to justify denial of entry, residence or work permit. Instead, a positive test-result may be used to provide migrants with counselling and to offer voluntary preventive treatment.

Screening and testing of migrants may only be justified with the objective to provide adequate medical care, and never to discriminate.

## 2.1.2 Alignment of national policies with WHO recommendations

Despite being caused by the same organism (*Mycobacterium tuberculosis*), active TB and LTBI pose different challenges for screening and treatment in migrant populations. Screening practices for the two forms are highly varied across Europe (72). The E-DETECT TB<sup>4</sup> project aims to develop a standardized protocol for screening migrants for TB and LTBI in the EU/EEA (73). Reduced variation in screening protocols will facilitate screening and linkage to care and enable more countries to align with the international guidance (discussed in section 3.1).

As well as variation within the WHO European Region, substantial heterogeneity in screening methods was seen within countries. Even where national policies exist for screening migrants for active TB and LTBI, they may not be followed if implementation is the responsibility of and decided by the local health authority (73). For example, in the United Kingdom, owing to limited service capacity for screening all migrants from countries with a TB incidence of > 40 cases per 100 000 population, local TB service providers may instead use a higher threshold to reduce the number of migrants eligible for screening (74). Further within-country heterogeneity of screening practices is caused by incomplete national policies. For example, in Germany screening policies for children and pregnant women are lacking at national level, so different policies govern screening decisions at a federal state level (75).

### 2.1.2.1 Policies for active TB

A 2018 survey of EU/EEA national TB programme leads undertaken to investigate screening practices for migrants in the EU/EEA found that screening for active TB was conducted for asylum seekers in 77% of countries and for refugees in 71% of countries (76). Post-entry screening of documented migrants for active TB was more common (42% of countries) than point of entry screening (32% of countries) (76). The search also identified documents from individual countries (Germany (50,77), Israel (78), the Netherlands (51,52), Norway (79) and United Kingdom (48,49)) that provide further details of migrant screening and treatment for active TB (Table 3). In the United Kingdom, screening for active TB previously took place at airports; however, in 2012 this system was replaced with pre-entry screening for applicants who apply for a United Kingdom visa for more than 6 months and are resident in a country with an incidence of more than 40 cases per 100 000 population. Visa applications will only be processed once the applicant has received a certificate stating that they do not have pulmonary TB (48) but using the improvement of

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4. A research consortium for the early detection and integrated management of tuberculosis in Europe (196).



**Table 3. National screening policies and availability/provision of antituberculosis therapy for active TB among migrants**

Country	Screening strategy	Population screened	Age range (years)	WHO-estimated threshold for TB incidence in country of origin <sup>a</sup>	Screening method	Compulsory screening	ATT always provided
France (81)	Post-arrival medical centre	Long-stay migrants (> 3 months)	All	Non-EU	CXR	Yes	– <sup>b</sup>
Germany (75)	Post-arrival	All migrants in shared accommodation facilities	> 16	NA	CXR	Yes	– <sup>b</sup>
Ireland (82)	Post-arrival	All migrants	< 16 > 16 16–35	> 40 > 40 > 500	TST CXR CXR + TST	Yes	– <sup>b</sup>
Italy (83)	Post-arrival, secondary reception centre/health centre	Asylum seekers	All	NA	Interview CXR for those with positive TST or IGRA	Yes	Yes
The Netherlands (83)	Post-arrival central reception centres	Asylum seekers	All	> 50	CXR	Yes	Yes
	Post-arrival, public health service	Other migrants	< 18 > 18	> 50 > 50	CXR for those with positive TST or IGRA & no symptoms CXR	Yes	Yes

Table 3 contd


Country	Screening strategy	Population screened	Age range (years)	WHO-estimated threshold for TB incidence in country of origin <sup>a</sup>	Screening method	Com-pulsory screening	ATT always provided
Russian Federation (47)	Post-arrival medical centre, primary and secondary care centres	Labour migrants, All migrants receiving care in primary or secondary health-care systems	All	NA	CXR (pregnant women: sputum microscopy)	NA	– <sup>b</sup>
Sweden (83)	Post-arrival, primary care centre	Asylum seekers	All	> 100	CXR for those with symptoms or positive TST or IGRA	Yes	– <sup>b</sup>
United Kingdom (83)	Pre-entry port of arrival, reception centre	Long-stay migrants (> 6 months)	< 11 11–15 16–35 > 35	> 40 > 40 > 40 > 40	Interview CXR CXR CXR	No No Yes Yes	Yes

ATT: antitubercular treatment; NA: not available.

<sup>a</sup> Cases per 100 000 population.

<sup>b</sup> Not mentioned in the available documents.

Sources: adapted from Bozorgmehr et al., 2017 (75); ECDC, 2018 (82); Garner-Purkiss et al., 2019 (84); Kehr et al., 2012 (81); and Kunst et al., 2017 (83).



public health as grounds for this approach is not well founded, given reported active TB detection rates (70). Nevertheless, this may be a valid form of screening in contexts where entry and residence restrictions are not associated with a positive result. However, the WHO action framework for TB elimination in low-incidence countries states that for pre-entry screening to be effective it may require investment in diagnostic and treatment facilities in the countries of departure and that good links must be established with the destination country's surveillance system (64). This will also ensure that benefits are shared with national TB programmes in the country where screening takes place (80).

### *2.1.2.2 Policies for LTBI*

In many countries, LTBI screening does not occur as commonly as screening for active disease, despite evidence suggesting that in low-incidence countries most cases of active TB in migrants result from LTBI reactivation (82). A 2018 survey of EU/EEA national TB programme leads intended to investigate screening practices for migrants found that 32% of countries screened migrants at the point of entry for active TB, whereas only 20% of countries screened for LTBI (76). A similar pattern was found for post-entry testing, with 42% of countries screening for active disease and 17% for LTBI. Table 4 summarizes the screening policies identified in the review. It highlights the heterogeneity across countries in the WHO European Region on which migrant groups are screened, what screening method is used and when screening takes place.

In 2018 an electronic survey of all TB Network European Trials group members was conducted to identify the different LTBI screening policies in the WHO European Region (85). The survey found that 12 of the 22 countries that responded to the survey had national LTBI screening policies. It also found that although a diagnosis of LTBI would not alter a patient's immigration status, migrants often did not receive the most up-to-date treatment regimens.

As for active TB screening, although clear policies for LTBI screening exist at national level, the extent to which they are implemented varies considerably. In the United Kingdom, a survey evaluating local TB services found that the current guidance was not followed: only half of services attempted to screen migrants for LTBI and the recommended screening method was not always used (86,87). Although the United Kingdom's LTBI testing programme was devised in conjunction with primary health-care services, it was acknowledged that public service providers, community members and community-based organizations were also needed to provide a user-centric service model for the most vulnerable members of society, including migrants (80).

Table 4. National screening policies for LTBI among migrants

Country	Screening strategy	Population screened	Age range (years)	WHO-estimated TB incidence in the country of origin <sup>a</sup>	Screening method	Com-pulsory screening	LTBI treatment provided
Germany (50)	Post-arrival	Asylum seekers	< 15	NA	TST or IGRA	–	–
Ireland (82)	Post-arrival	All migrants	< 16 > 16	> 40 > 500	TST	No	Yes
Italy (83)	Post-arrival, secondary reception centre/ health centre	Long-stay migrants (> 3 months)	< 5 > 5	> 100 > 100	TST TST or IGRA	No	Yes, occasionally
The Netherlands (83)	Post-arrival central reception centres	All migrants	< 18 > 18	> 50	TST/IGRA or IGRA None	No	Yes
Norway (79)	Reception centres Primary care	Asylum seekers Other migrants	< 35	> 40	– <sup>b</sup>	Yes – but no sanctions on non-attendance	Yes – only those aged < 16 years and those with fibrotic lesions
Sweden (83)	Post-arrival, primary care centre	Asylum seekers	All	> 100	TST or IGRA	No	–

Table 4 contd

Country	Screening strategy	Population screened	Age range (years)	WHO-estimated TB incidence in the country of origin <sup>a</sup>	Screening method	Com-pulsory screening	LTBI treatment provided
United Kingdom (83)	Pre-entry port of arrival, reception centre	Long-stay migrants (> 6 months)	< 11 11–15 16–35 > 35	> 40 > 40 > 150 NA	TST or IGRA TST or IGRA IGRA None	No	Yes – under select conditions

NA: not available.

<sup>a</sup> Cases per 100 000 population.

<sup>b</sup> Not mentioned in available documents.

Sources: adapted from ECDC, 2018 (82); Garner-Purkis et al., 2019 (84); and Kunst et al., 2017 (83).

### 2.1.3 Tools and strategies aligned with WHO recommendations on TB

The European Respiratory Society–WHO TB Consilium (197) is a proven tool for cross-border collaboration on TB management, including in migrants (88). This web-based, open-access multilingual system provides free clinical support and advice to national consilia and individual clinicians on the management of challenging TB cases, including patients with drug resistance and/or HIV coinfection, as well as difficult paediatric cases. The Consilium also addresses the problem of trans-border follow-up for patients moving from one European country to another.

The following strategies used by individual countries to align with WHO recommendations to control TB are briefly described below. (See Case study 1 for a more detailed description of TB services for refugees and migrants in the Russian Federation.)

Italy adopts a syndromic approach to rapidly identify and manage active TB at key points of entry (83). However, practices are highly heterogeneous across different regions, and lack of a standardized data collection tool prevents the systematic analysis of TB screening and management in migrants, both within the country and after leaving the country.

In Norway, all migrants are screened for active TB on arrival by clinical examination and CXR (79). Asylum seekers with confirmed or suspected active TB are centralized in Oslo for further diagnostic examination and treatment. LTBI screening is provided for people aged < 35 years arriving from countries of high TB prevalence (defined as > 40 cases per 100 000 population) who are planning to stay for at least two years. Full antituberculosis treatment is assured for all migrants while they are in Norway and local health authorities contact the equivalent authorities in other countries in cases of relocation.

In the United Kingdom, Public Health England and the National Health Service jointly developed a five-year action plan (for 2015–2020) to tackle TB in at-risk populations (89). Pre-entry screening of migrants for active TB is based on clinical evaluation and CXR (via a pre-emigration procedure in the country of origin or transit) and is required for all individuals applying for a United Kingdom visa lasting longer than six months. LTBI screening is recommended for all migrants who arrived in the United Kingdom within the last five years from areas with a TB incidence rate of more than 150 cases per 100 000 population. United Kingdom health authorities contact other national TB focal points to link the treating physicians and ensure continuum of care. An ongoing mixed-methods study in Leicester (one of the United Kingdom's most ethnically diverse cities) includes an interrupted time-series analysis before and after the introduction of routine combined screening of migrants for LTBI, HIV, and hepatitis B and C when first registering with primary care (90). The study aims to evaluate the acceptability, effectiveness and cost-effectiveness of the combined screening approach. Preliminary results show that the approach has been favourably received by both migrants and health-care professionals.



### Case study 1. Policy implementation for TB control in at-risk populations, Russian Federation

In the Russian Federation, the Moscow TB Centre took coordinated action with outpatient facilities of the Moscow Centre for Hygiene and Epidemiology and the Multifunctional Medical Centre for Labour Migration to ensure implementation of a TB control policy among at-risk populations. This included reviewing and adjusting approaches for planning, reporting and exchanging data on systematic screening for active TB among migrants (91). Actions included expanding contact tracing for TB among migrants, introducing monitoring of people with suspected TB who visited medical facilities, allocating additional facilities to support this work, and ensuring regulatory/methodological support and additional human resources. As a consequence, in 2015 and 2016 an additional 362 700 foreign citizens systematically screened, with 465 TB diagnoses. Through these actions:

- TB notifications through active case-finding among migrants increased by 28% in three years;
- the number of migrants screened for TB through contact tracing more than doubled to 4779 in 2016; and
- the proportion of migrants treated for TB through planned hospitalization increased from 70.5% (in 2014) to 81.9% (in 2016), with TB deaths in this population decreasing from 37 (in 2014) to 15 (in 2016).

Despite these efforts, improvements in migrant health, and specifically related to TB, are still required (92). By law, and linked to work and residence permits, all foreign citizens must be screened for TB and other infectious diseases at their own expense, and a diagnosis of TB can lead to deportation within 15 days (67). In the Russian Federation, legal and regulatory instruments for medical care for migrants are fragmented, and no integrated legal framework is currently being implemented to provide standardized routine care (92). Migrants (including irregular migrants) often seek health care in private clinics because they fear losing their work or residence permit if diagnosed with TB or other notifiable diseases. For example, many migrants from central Asia prefer to visit Kyrgyz clinics (private migrant-friendly centres in larger Russian cities since 2010, founded by Kyrgyz migrants) rather than seek care from municipal health facilities (93). However, Kyrgyz clinics do not have systems in place for reporting migrant health data to national surveillance systems; hence, very little information is available on the health status of this population (94).

### 2.1.4 Cost-effectiveness of TB services

For migrants, screening for active TB is well established in many European countries, whereas screening for LTBI is relatively new. Therefore, it is unsurprising that most information on cost-effectiveness in the included documents (published since 2010) concerned LTBI screening and treatment, and most reports were favourable. A 2015 review included nine studies evaluating the cost-effectiveness of migrant screening for LTBI published up to July 2014. Of these, seven concluded that it was cost-effective and two reported that it is only cost-effective for migrants who are contacts of people with active TB (95). However, only three of the nine studies were conducted in the WHO European Region (all in the United Kingdom (96–98)). A 2016 cost-effectiveness analysis from Norway estimated the impact of LTBI screening for all migrants, with targeted screening of those with additional risk factors. It concluded that the cost of screening and treatment for active TB is the largest contributor to total costs, whereas LTBI screening and treatment costs are relatively small. Therefore, increasing the proportion of IGRA-positive immigrants (i.e. with LTBI) who receive treatment can substantially reduce the overall treatment costs by preventing progression to active TB (99). Table 5 summarizes data from a 2018 ECDC report on cost-effectiveness studies that include migrants in the study population and compares the performance of LTBI diagnostic tests (TST and IGRA) (100). The report concluded that both TST and IGRA were cost-effective diagnostic tools, despite the weak evidence.

The 2018 ECDC report also provided results of a cost-effectiveness analysis of programmatic screening strategies for LTBI in the EU/EEA, which simulated different screening strategies to reflect existing policies in four selected countries: Czechia, the Netherlands, Portugal and Spain (100). The report concluded that (i) LTBI screening for migrants at entry was cost-effective in all four countries; (ii) the cost-effectiveness of screening was higher for migrants from countries with a higher TB incidence; and one-time screening gave the best value for money.

The identified documents frequently cited a 2011 United Kingdom analysis of cost-effectiveness (98) as providing evidence that LTBI screening for migrants arriving from areas with a high TB incidence (> 150 cases per 100 000 population) is cost-effective and efficient (identifies 92% of infected migrants) (48,74,89). The analysis assumed screening was conducted by IGRA testing and targeted only adult migrants aged 35 years or younger. It included four TB incidence thresholds and found that they were all more cost-effective than the threshold recommended by national guidance at the time of publication. Based on the 2011 United Kingdom analysis (98), a report found that screening migrants according to the 2006 guidelines of the



United Kingdom's National Institute for Health and Care Excellence would miss 70% of imported LTBI (74). Therefore, migrant screening would be implemented most cost-effectively by decreasing the screening threshold to an intermediate incidence threshold (150–250 cases per 100 000 population), which would identify 90% of migrants with LTBI and prevent a substantial proportion from progressing to active TB (74). It is evident that equity (in terms of cases missed by a targeted screening approach) must be considered in conjunction with cost-effectiveness analysis to maximize both the efficacy and coverage of LTBI screening (97,106).

**Table 5. Cost-effectiveness analyses of diagnostic tests for LTBI screening in migrant groups**

Diagnostic test evaluated	Source	Finding	Level of evidence <sup>a</sup>
TST	Two cost-effectiveness studies reporting on recently arrived migrants from high TB burden countries (101)	TST ( $\geq 10$ mm) and subsequent treatment for newly arrived adult migrants is highly cost-effective for LTBI diagnosis (compared with no screening) <sup>b</sup>	Weak
	Two cost-effectiveness studies reporting on recently arrived migrants (102)	TST ( $\geq 5$ mm) for migrants is cost-effective for diagnosis of LTBI (compared with TST ( $\geq 5$ mm) positive, followed by IGRA) <sup>c</sup>	Weak
IGRA	Five cost-effectiveness studies reporting on recently arrived migrants from countries with high TB burden (103)	IGRA screening of adult migrants is moderately cost-effective for LTBI diagnosis (compared with no screening) <sup>b</sup>	Weak
	Eight cost-effectiveness studies reporting on selected risk groups (104)	IGRA screening of high-risk groups (e.g. health-care workers, migrants from high-incidence countries and close contacts) is moderately cost-effective <sup>b</sup>	Weak

Table 5 contd

Diagnostic test evaluated	Source	Finding	Level of evidence <sup>a</sup>
TST and IGRA	Eight cost-effectiveness studies (104)	IGRA screening of TST-positive individuals in high-risk groups (e.g. health-care workers, migrants from high-incidence countries and close contacts) is cost-effective <sup>d</sup>	Weak
	Cost-effectiveness analyses (number included not stated) (105)	From a health-care perspective, regardless of the population group at risk, LTBI screening is most cost-effective when done using TST, with a positive TST followed by IGRA.	NA
		Cost-effectiveness is comparable for IGRA alone or TST alone.	
		From a societal perspective, using only IGRA is often the most cost-effective option, because it requires only one visit for testing	

NA: not applicable.

<sup>a</sup> As assessed by ECDC (100).

<sup>b</sup> Cost-effectiveness was defined using an incremental cost-effectiveness ratio: < US\$ 20 000, highly cost-effective; US\$ 20 000–100 000, moderately cost-effective; > US\$ 100 000, not cost-effective.

<sup>c</sup> An incremental cost-effectiveness ratio of < £20 000 was considered cost-effective. The review included primary studies conducted in low- and high-incidence settings.

<sup>d</sup> Primary studies used different willingness-to-pay thresholds to identify cost-effective interventions.

Source: adapted from ECDC, 2018 (100).



Estimates of the cost–effectiveness of migrant screening have been far more variable for active TB (usually based on CXR screening) and are likely to depend on various factors, including the site of screening (before, at or after entry) and the yield of active TB in migrants to each country (103). A systematic review of national programmes in Europe reported a median yield for active TB of 0.18% (interquartile range: 0.10–0.35%) (32). A review of literature from Canada, the United States of America and Europe suggested that CXR screening is not cost-effective and does little to improve public health (107). However, the more recent inclusion of sputum smears and sputum culture (which may have greater diagnostic accuracy) as screening tools may have increased case detection rates (108).

A cost–effectiveness analysis of active TB screening in Flanders, Belgium found that follow-up of asylum seekers was the most cost-effective screening component (109); however, this is unsurprising as asylum seekers are only followed up when they have had an abnormal CXR result. In contrast, screening of other migrant groups from high-incidence countries was found to be a particularly expensive method of identifying active TB cases. The report highlighted that as global TB incidence declines, the detection of active cases is becoming less frequent and, therefore, the cost–effectiveness of TB detection and prevention is declining. In other studies, indiscriminate CXR screening of migrants was demonstrated to be inefficient and not cost-effective (103,107,110–112). Although prioritizing key interventions and targeting screening to higher-risk groups can improve cost–effectiveness and is endorsed by WHO (68), reports have warned that poorly targeted systematic screening can be very expensive and ineffective (113), with little epidemiological impact (114). Therefore, active TB screening should be carefully targeted to groups with the highest TB risk, and TB control programmes should incorporate measurements of effectiveness (68).

The outcome of a cost–effectiveness analysis by site of screening will depend on its scope and perspective. Pre-entry screening is conventionally financed out of pocket by visa applicants, whereas treatment is paid for out of pocket, by health insurance or by a national TB programme. On this basis, a commentary in 2014 suggested that for the receiving country cost savings might be associated with pre-entry screening because this will reduce migrant screening and treatment costs (115). From an international perspective, shifting costs to the country of origin could reduce health-care costs overall because these are normally much higher in the receiving country. However, it warned that the financial burden, equity and ethics need to be considered, including the risk of stigma and discrimination with pre-entry screening.

A 2016 review of TB in low-incidence settings (unlike most of those discussed so far) concluded that the most cost-effective solution to migrant TB screening is likely to involve a combination of interventions: targeted pre-arrival screening for active TB followed by post-arrival screening for LTBI in migrants from settings with an intermediate–high TB burden (13). However, evidence is limited on the cost–effectiveness of different screening approaches, and the appropriateness of the cost of pre-entry screening and treatment falling on the migrant and country of origin has been questioned (95,109,116). Therefore, further exploration of these combinations of interventions is warranted.

In 2018 a WHO Health Evidence Network (HEN) report considered the most effective and efficient package of services for the prevention, diagnosis, treatment and care of TB among refugees and migrants in the WHO European Region (116). The report concluded that, despite multiple WHO policies and recommendations, evidence was lacking on the most cost-effective or efficient approaches for TB detection and continuum of care across national borders. The report highlighted that, despite progress in evaluating the cost–effectiveness of incorporating LTBI screening into migrant screening programmes and targeting migrants from countries of high TB incidence, there was no consensus on cost–effectiveness. Furthermore, knowledge gaps remained, such as cost–effectiveness by migrant type/reason for migration and factors such as age and migration trajectory. The report highlighted the increasing focus on pre-entry screening programmes, particularly in low-incidence host countries because they consider this to be more cost-effective. However, as this approach only targets a specific subset of migrants (i.e. those with planned migration routes to receiving countries), many would not be covered by these programmes.

Another commentary focused on the costs of migrant screening and health care (including for TB) in Spain, where in 2012 the Spanish Government restricted access to health care by undocumented migrants. It emphasized the short-sightedness of this approach from a cost perspective: the Spanish Government sought to justify restricting health-care access by migrants on economic grounds to reduce public spending, but did not take into account potential cost savings (117). Aside from the human rights implications of withholding access to care, such restrictions on health care might end up costing more, as easily treatable conditions progress to emergencies, while increasing the risk of spreading untreated infections and antimicrobial resistance.



Several identified documents highlighted the knowledge gaps that challenge reliable cost–effectiveness estimates. One report identified uncertainties including which immigrant groups to screen depending on TB incidence in the country of origin, which screening methods to use and the best site for screening (97). It recommended addressing these gaps by collecting prospective, multicentre data on LTBI prevalence in migrants and assessing the performance of screening tools and the outcomes of screening in different locations. Another identified key inputs for a cost–effectiveness analysis model to use where considerable uncertainties exist, including heterogeneity in the proportion of individuals with LTBI progressing to active TB disease over the model's time horizon, which will vary by factors such as HIV infection status (118).

In addition, several studies found that in countries with low TB incidence, selective bacillus Calmette–Guérin (BCG) vaccination of target populations (including migrants from high-incidence countries) is more cost-effective than universal vaccination (119–123). However, a 2017 report by the Strategic Advisory Group of Experts on Immunization Working Group on BCG Vaccines and the WHO Secretariat emphasized that effective implementation of a targeted strategy depends on a strong surveillance system to ensure accurate data and the careful identification of high-risk groups (119). The Working Group concluded that publications related to BCG cost–effectiveness (in all settings) are scarce and of low quality.

In summary, current evidence suggests that LTBI screening of migrants in the WHO European Region is cost-effective and becomes more so when targeted to migrants at the highest risk of infection. Evidence on the cost–effectiveness of active TB screening is less clear; it is likely to be cost-effective only in specific contexts and for high-risk migrant populations. Many reports mentioned that considerable knowledge gaps remain; further analyses and empirical research to inform reliable inputs for cost–effectiveness models are required.

## 2.2 HIV

### 2.2.1 WHO and ECDC recommendations

The global and regional goals to end AIDS as a public health threat by 2030 are based on the United Nations Sustainable Development Goals (target 3.3) (124), the Joint United Nations Programme on HIV/AIDS (UNAIDS) 95–95–95 targets for 2025 (125,126) and international pledges set by the 2021 United Nations General Assembly High-level Meeting on AIDS (127). World leaders have agreed by 2025 to (128):

- reduce the annual number of new HIV infections to under 370 000 and AIDS-related deaths to 250 000;
- eliminate new HIV infections among children and end paediatric AIDS;
- eliminate all forms of HIV-related discrimination; and
- commit to providing life-saving HIV treatment to 34 million people.

The current (2017) Action Plan for the Health Sector response to HIV in the WHO European Region (42) builds on the initial European Action Plan for HIV/AIDS (198), endorsed by Member States in 2011 to respond to the public health challenge of HIV in the Region. The vision of the 2017 Action Plan is for the Region to have no new HIV infections, no AIDS-related deaths and no HIV-related discrimination by 2030. The Action Plan sets out several targets covering all areas of HIV management, including provision of antiretroviral therapy (ART), to achieve these goals (Box 1).

#### Box 1. Action Plan for the Health Sector response to HIV in the WHO European Region: regional targets for HIV management

Targets for prevention are to:

- reduce new infections by 75% (or an appropriate numerical target for low-prevalence countries), including among key populations;
- reduce mother-to-child transmission to less than 2% in non-breastfeeding populations and less than 5% in breastfeeding populations; and
- reduce the rates of congenital syphilis and of child HIV cases due to mother-to-child transmission to  $\leq 50$  cases per 100 000 live births.

Targets for testing and treatment are for:

- 90% of people living with HIV to know their HIV status;



- 90% of people diagnosed with HIV to be receiving ART; and
- 90% of people living with HIV who are on ART to achieve viral load suppression.

Targets for AIDS-related deaths are to:

- reduce AIDS-related deaths to below 30 000 (contributing towards reducing global AIDS-related deaths to below 500 000);
- reduce TB deaths among people living with HIV by 75% (or an appropriate numerical target for low-prevalence countries); and
- reduce hepatitis B and C deaths among people co-infected with HIV by 10%.

The target for discrimination is for:

- zero HIV-related discriminatory policies and legislation.

The target for financial sustainability is to:

- increase the number of countries that are sustainably funded for the HIV response with increased domestic financing to more than 90%.

*Source:* WHO Regional Office for Europe, 2017 (42).

To achieve these targets, the Action Plan has five strategic directions: (i) information for focused action; (ii) interventions for impact; (iii) delivering for equity; (iv) financing for sustainability; and (v) innovation for acceleration. Many of these highlight the need for a particular focus on key populations, including migrants.

A guiding principle of the Action Plan is universal health coverage to ensure that all people living with HIV can access the full range of health-care services they need. Based on decades of experience, the Action Plan advocates for interventions for key populations (including migrants) that are tailored to the local context, capacity and resources, and to ensure that services are relevant, acceptable and accessible. One fast-track action is for improved information with the need to expand cross-border sharing of information to ensure continuity of care of mobile populations including migrants.

A strong recommendation (based on moderate-quality evidence) is that ART should be initiated in all adults living with HIV regardless of their clinical stage

and CD4 cell count (129). An ECDC priority action is to reduce the legal and policy barriers in place for undocumented migrants to receive treatment for HIV (130).

Several international guidelines include recommendations that cover HIV testing of migrants. Both ECDC and WHO strongly advise against mandatory HIV testing of migrants, but ECDC recommends that migrants from countries with a high HIV prevalence ( $\geq 1\%$ ) should be offered an HIV test (42,82). HIV testing should be voluntary and confidential, with informed consent. In addition, both WHO and UNAIDS strongly advise against restricting the movement of people living with HIV (42,125). HIV is considered a chronic condition and, although not curable, it is eminently treatable with ART (129). For this reason, the WHO Regional Office for Europe does not recommend countries to impose restrictions. The United Nations Universal Declaration of Human Rights states that restricting one's movement or choice of residence based on HIV status is discriminatory and unjustified and is not supported by public health evidence (131). These policies emphasize the discrimination and stigmatization faced by people living with HIV, which may cause them to conceal their diagnosis and thereby prevent them from accessing the health-care services they require (132).

WHO recommends the use of pre-exposure prophylaxis (PrEP) for individuals with a 3% or greater risk per year of acquiring HIV (133). The main obstacles are inability to identify high-risk subgroups of migrants who would benefit from PrEP and the lack of migrant-specific services to provide it (133).

### 2.2.2 Alignment of national policies with WHO recommendations

Most literature identified in the review did not focus on a single country but instead gave an overview of national HIV policies and their relevance to migrants in multiple countries in the WHO European Region. Documents on single countries were identified for Cyprus (134), Ireland (135), Israel (136), Italy (137), the Russian Federation (138), Switzerland (139) and the United Kingdom (54–56). These articles described in detail specific policies, guidelines and challenges faced by individual countries. A 2018 survey of national HIV testing policies identified only 10 countries (all in western Europe) with published guidelines that included specific recommendations for key populations, including migrants (although the 10 countries were not listed in the report) (140).

Few countries have reported the proportion of migrants receiving HIV treatment. A 2018 ECDC progress report on implementation of the Dublin Declaration found that only nine countries in the WHO European Region reported the number of migrants living with HIV who currently receive treatment: Austria, Belgium, France,





Georgia, Greece, Kazakhstan, Luxembourg, Sweden and the United Kingdom (141). Of these, only five reported providing all four stages of the continuum of HIV care for migrants. In those five countries, 76% of migrants living with HIV were receiving treatment.

National guidance on migrant testing for HIV is highly heterogeneous in the European Region. Table 6 shows the disparities in HIV testing practices for undocumented migrants, as reported in an ECDC survey (140). Case study 2 describes an innovative mechanism to provide HIV services for undocumented migrants in Israel. Another apparent discrepancy is that while some countries acknowledge that migrants are vulnerable to HIV, they do not recommend HIV testing for this group. Table 7 shows whether countries have identified migrants as vulnerable to HIV and how their HIV testing policies align with WHO and ECDC guidance (data from 2010).

**Table 6. Access to HIV testing for undocumented migrant in Member States of the WHO European Region, 2018**

Member State	Access to testing for undocumented migrants
Albania, Azerbaijan, Belgium, Croatia, Cyprus, Denmark, Estonia, Finland, France, Ireland, Israel, Italy, Lithuania, Luxembourg, Malta, North Macedonia, Norway, Poland, Serbia, Sweden, United Kingdom	Provided free of charge
Austria, Belarus, Germany, Kyrgyzstan, Latvia, Netherlands, Republic of Moldova, Tajikistan, Ukraine	Provided on the same terms as other people
Andorra, Czechia, Greece, Portugal, Spain, Switzerland	Provision varies
Armenia, Georgia, Hungary, Iceland, Kazakhstan, Montenegro, Romania, Slovenia, Turkey	Not provided
Bosnia and Herzegovina, Bulgaria, Monaco, Russian Federation, San Marino, Slovakia, Turkmenistan, Uzbekistan	Don't know / no response

Note: data are from 45 respondents to a questionnaire disseminated online in 2018 to the 53 Member States of the WHO European Region.

Source: adapted from European Centre for Disease Prevention and Control, 2019 (140).

### Case study 2. Public–private partnership to provide HIV services for undocumented migrants in Israel

In Israel, a public–private partnership was initiated to provide access to HIV services for undocumented migrants (136). This took 15 years to achieve because of several challenges within Israeli and international discourse, particularly concerning the Israeli Government’s response to the large number of arrivals. During the first two years of the programme, the Ministry of Health funded medical follow-up and pharmaceutical companies provided ART free of charge for only 100 patients at any given time, in addition to pregnant women. Consequently, there was a waiting list, which shrank progressively as the service grew more successful and expanded into a national programme. Since 2016, the Ministry of Health has fully funded this service and integrated it into the Israeli health system. Since 2017, there has been no waiting list for ART in the programme. As of December 2018, the national programme had monitored 350 migrant patients with HIV and treated 316 (90.3%). The most prevalent disease present in this population was TB.

Table 7. Results of an online survey of HIV testing recommended for migrants conducted in 31 Member States of the EU/EEA/European Free Trade Association, 2010

	Identify migrants as vulnerable	Do not identify migrants as vulnerable	No data available on whether migrants are identified as vulnerable
Recommend HIV testing for migrants	Belgium, Bulgaria, Denmark, Finland, France, Iceland, Lithuania, Luxembourg, Netherlands, Norway, Poland, Romania, Slovakia, Sweden, Switzerland, United Kingdom	–	–
Do not recommend HIV testing for migrants	Germany, Ireland, Italy, Malta, Portugal, Spain	Cyprus, Slovenia	Austria, Estonia, Greece, Hungary, Latvia
No available data on HIV testing for migrants	–	–	Czechia, Lichtenstein

Source: adapted from Alvarez-Del Arco et al., 2014 (142).



In general, the rate of migrant screening in countries where HIV screening does take place is low; however, progress has been made since the late 2000s. An ECDC HIV progress report published in 2020 identified Greece as the only included country to report a screening rate above 50%; however, the testing rate for undocumented migrants in Greece was only 16.3% (140). In the United Kingdom, Public Health England has published specific guidance for HIV screening and management for migrants (54). According to the guidance, the following migrant groups should be offered routine HIV testing but not an annual HIV test: migrants newly registering with a general practitioner in an area where the HIV prevalence is greater than 0.2%; those from countries with a HIV prevalence greater than 1%; and all men and women who report sexual contact abroad or in the United Kingdom with individuals from countries of high HIV prevalence (54). Additional guidance is given for people born in a high-prevalence country: regular HIV, and sexually transmitted infection (STI) screening is advised if the individual is having unprotected sex with new or casual partners. Similarly, in France it is recommended that migrants should be screened annually if they have a sexual partner from an HIV endemic region (143).

At the United Kingdom's International Labour Conference in 2010, the Department of Work and Pensions of the United Kingdom Government presented a number of recommendations to combat discrimination and stigmatization regarding HIV in all aspects of work (144). Given that many migrants move for economic reasons, several recommendations covered HIV screening of migrants, as follows.

- HIV testing must be genuinely voluntary and free of any coercion, and testing programmes must respect international guidelines on confidentiality, counselling and consent.
- HIV testing or other forms of HIV screening should not be required of workers, including migrant workers; the results of HIV testing should be confidential and should not endanger access to jobs, tenure, job security or opportunities for advancement.
- Workers, including migrant workers, should not be required by countries of origin, transit or destination to disclose HIV-related information about themselves or others; access to such information should be governed by rules of confidentiality consistent with the International Labour Organization 1997 code of practice, Protection of Workers' Personal Data (199), and other relevant international data protection standards.

Case study 3 describes a community-based HIV testing programme in Northern Ireland (United Kingdom).

### Case study 3. Community-based HIV testing in Northern Ireland (United Kingdom)

In Northern Ireland (United Kingdom), an estimated 7200 people were living with HIV in 2018; of these, 71% had been born abroad (145). In 2018 a voluntary community-based HIV testing programme was introduced by the Health Protection Surveillance Centre (135). The programme included forming a multisectoral steering group and developing a minimum standardized dataset. Tests were rapid point-of-care tests (54%) or laboratory-based tests (46%). The total HIV reactivity rate was 1.7%; however, the positivity rate for HIV testing in one asylum centre was 5%. Ongoing community testing is beneficial in providing early diagnosis and treatment, as well as to determine whether at-risk groups are being reached.

Other countries in the WHO European Region have migrant screening policies that deviate from international recommendations and standards. For example, Cyprus experiences a high rate of migration well above the average for EU Member States (29.7 migrants per 1000 population vs 5.4 migrants per 1000 population; 2019 data) (146). A 2015 ECDC technical report on HIV in Cyprus identified no specific HIV programmes targeted at migrants (134). It also reported that HIV screening of all new arrivals takes place in the immigration centre in Menogia. Although, testing is voluntary, new arrivals are only permitted into the immigration centre if they consent to testing.

In Italy, migrants with HIV infection are geographically concentrated in some areas of the country, which may reflect poor access to HIV testing in these areas (137). On average, migrants living with HIV are more likely to be diagnosed later than people born in Italy. This highlights a need to promote earlier HIV diagnosis and screening in migrants in Italy. However, the regional differences may also relate to the settlement patterns of migrants.

#### *2.2.2.1 Policies related to travel restrictions and deportation*

In the Russian Federation, TB, HIV, STI, and hepatitis B and C screening is mandatory for labour migrants or migrants applying for residency or citizenship (147). Migrants that test positive are referred to a designated medical centre to confirm the diagnosis and the decision on their status is suspended. If HIV is confirmed, the migrant is denied residency in the Russian Federation and is subject to deportation. In 2016 United Nations Member States signed an agreement to eliminate HIV-related



travel restrictions (148) because they violate the rights of people with HIV to health, privacy, equality and non-discrimination (149); however, the Russian Federation is one of two countries in the WHO European Region (along with Turkmenistan) out of 19 countries worldwide that still deport or deny residency to HIV-positive non-nationals, who otherwise remain undocumented migrants (148). Application of the deportation policy depends, however, on additional rules and conditions. For example, HIV screening policy does not cover irregular migrants (150). In 2009 a targeted manual on prevention of HIV, STIs and viral hepatitis in migrants was developed for the Russian Federation with the support of the Global Fund to Fight AIDS, Tuberculosis and Malaria (151). However, the review identified no evaluation of its implementation and impact. New recommendations on the development of an intersectional programme on HIV prevention among key populations by the Profile HIV Diagnostics and Treatment Commission of the Ministry of Health of the Russian Federation acknowledge that migrants are a key vulnerable population requiring a targeted approach when designing prevention interventions (152). However, despite this, little has changed so far and legal prohibition continues (147). Work permit regulations are unclear and frequently changed, creating a persistent state of legal uncertainty for migrants, who "are 'illegal' but tolerated" and face multiple barriers to accessing health services (147,153,154).

Many countries (including Bulgaria and Czechia) have recently followed ECDC, United Nations and WHO advice on freedom of movement for people living with HIV and removed travel restrictions (131,132,155). However, some countries in the WHO European Region still impose these restrictions. In the Russian Federation, the policy is particularly controversial, but in 2016 the Health Minister announced that this policy would be reviewed (138). In the Russian Federation and Turkmenistan, the following restrictions apply (148).

- HIV testing is required for work permits;
- HIV testing is required for study permits;
- HIV testing or disclosure is required for certain permits or entry for less than 90 days;
- HIV testing is required for residency permits (for stays longer than 90 days);
- entry and stay for less than 90 days are prohibited on the basis of HIV status;
- residency permits are denied (for stays longer than 90 days) on the basis of HIV status; and
- non-nationals living with HIV are deported on the basis of HIV status.

In addition, Aruba (a constituent country of the Netherlands), Bosnia and Herzegovina, Kyrgyzstan and Ukraine are among 11 countries, territories and areas worldwide that prohibit short- and/or long-term stay on the basis of HIV status. Furthermore, Azerbaijan, Israel and Kazakhstan are among 18 countries, territories and areas worldwide that still require HIV testing or disclosure for certain types of entry, study, work and/or residency permits.

Although policies enforcing travel restrictions for people living with HIV have mostly been removed in the WHO European Region, limitations are still imposed contrary to local laws. For example, in Cyprus the Ombudsman raised concerns because foreign nationals had been threatened with deportation on grounds of being HIV positive, particularly when they had committed an offence (134). This is the only example of this practice identified in the review, but similar practices may also occur in other countries in the WHO European Region.

#### *2.2.2.2 Policies related to PrEP*

No guidelines were identified on the use of PrEP for migrants or how to identify migrants at high risk of HIV acquisition, despite WHO guidance that PrEP should be used by those with annual risk of 3% or greater (133). A Swiss initiative has approached this goal by designing a framework that identifies migrants under two axes (139): it recognizes that most migrants are not particularly vulnerable to HIV and screens them under the national programme for HIV and other STIs; in contrast, vulnerable migrants are targeted with specific HIV and STI prevention efforts based around national objectives and actions. To identify the target subpopulation, vulnerability factors are categorized into two groups: primary factors that directly increase exposure to HIV such as sex work, coming from a high-prevalence country, and being a transgender person or a man who has sex with men; and reinforced factors such as lack of health insurance, social and economic insecurity, social isolation and linguistic difficulties. Clear definitions of migrants at a high risk of acquiring HIV are required to ensure this subpopulation has access to PrEP (139).

#### **2.2.3 Cost-effectiveness of HIV services**

HIV and migration policy-related documents identified in the review did not discuss the cost-effectiveness of national HIV interventions targeted to migrants in the WHO European Region. A 2018 systematic review of the effectiveness and cost-effectiveness of HIV screening in migrants in the EU/EEA found no data on the cost-effectiveness or resource requirements (156). The review found indirect evidence from South Africa and the United States that gave some insight into



the resources required. The evidence suggested that rapid testing is preferable to conventional testing in a range of contexts, largely because it can be effectively combined with culturally and linguistically appropriate counselling. Community-based rapid testing programmes may improve the uptake of HIV testing, counselling and sustained access to treatment and follow-up for migrants across a range of settings in the WHO European Region. A recent cost-effectiveness analysis by the Regional Expert Group on Migration and Health in eastern Europe and central Asia suggested that in the Russian Federation it may be three times cheaper to provide ART to HIV-positive international migrants for one year than to pay for a three-week hospital stay caused by an AIDS-related opportunistic infection – a likely consequence of barriers to ART uptake for migrants (157). The analysis did not consider nonmedical costs related to HIV-positive migrant deportation such as detention, translation services, legal proceedings, transportation, time in retention centre and deportation itself, or the social costs and out-of-pocket expenses of patients. This type of analysis can provide explicit evidence to motivate decision-makers to change current policies.

## 2.3 Hepatitis B and C

### 2.3.1 WHO and ECDC recommendations

The WHO Regional Office for Europe's first action plan for viral hepatitis, entitled Action Plan for the Health Sector Response to Viral Hepatitis in the WHO European Region, was adopted by all 53 Member States in 2016 and published in 2017 (43). The Action Plan sets the goal of eliminating viral hepatitis as a public health threat in the WHO European Region by 2030 through reducing transmission, morbidity and mortality, with global targets of 80% reduction in new chronic infections and 65% reduction in mortality from the 2015 levels (158). To reach these targets, several recommendations specifically relate to migrants. First, improved data are necessary both within a country's health system to integrate with broader HIS and in cross-border systems to enable better continuity of care. Secondly, the Action Plan sets out a target to diagnose 50% of all people living with chronic HBV and HCV infections by 2020 through improved testing and screening. A third relevant recommendation is to prevent mother-to-child transmission via systems for screening pregnant women from countries that do not implement universal HBV vaccination and access to post-exposure prophylaxis for newborns, where needed. Fourthly, the Action Plan emphasizes the importance of reducing sexual transmission of viral hepatitis through ensuring access to dedicated sexual and reproductive health services, including for migrants. Lastly, the Action Plan recommends strengthening

human resources using community-based organizations and peer-support workers, particularly for vulnerable populations such as migrants.

The European Vaccine Action Plan 2015–2020, aimed to eliminate vaccine-preventable diseases in the Region (159). It included specific guidance on hepatitis B control and advocated for specific guidelines and policies for the vaccination of refugees and migrants. In 2018 ECDC published public health guidance for screening and vaccination for infections including HBV and HCV in newly arrived migrants (82). Different thresholds of HBsAg positivity are used in the guidelines and policies identified in the search to categorize countries as of low, intermediate and high prevalence. The 2018 ECDC guidance stated that screening and treatment for HBV infection should be offered to migrants from intermediate- and high-prevalence countries ( $\geq 2\%$  and  $\geq 5\%$  HBsAg positivity, respectively), and that hepatitis B vaccination should be offered to all migrant children and adolescents from intermediate- and high-prevalence countries who do not have evidence of vaccination or immunity. In addition, HCV antibody screening should be offered to migrant populations from HCV-endemic countries ( $\geq 2\%$  positivity) (82). Migrants identified to have anti-HCV antibodies should undergo RNA testing and those who test positive for HCV RNA should be linked to care and treatment.

### 2.3.2 Alignment of national policies with WHO recommendations

Four national policy documents were identified concerning migrants and the management of chronic HBV and HCV infections; these were from Israel (200), Italy (59) and the United Kingdom (57,58). However, the Israeli document was published in Hebrew only and was not included in the review (200). Secondary evidence of national policies was identified in research articles, reviews and surveys.

#### 2.3.2.1 HBV and HCV screening

A 2010 ECDC technical report on chronic HBV and HCV infections identified no national screening policies specifically targeting migrants in the WHO European Region (160). In 2021 this current review also found few policies pertaining to migrants; however, more policies and guidelines may be available in languages other than English and Russian and so would not be identified. Policies were identified from the United Kingdom, which has published separate documents for HBV and HCV (57,58). However, other identified articles were research papers evaluating national policies rather than original policy documents (161). Other studies assessed the implementation of national policy by Member States (161,162). These studies were based on questionnaires sent to relevant health-care professionals: some





questionnaires were designed to ascertain the current policies and guidance on migrants and chronic viral hepatitis available in the country and others aimed to determine the level of awareness of these documents in health-care professionals. These studies provided useful insight into the extent to which existing guidelines have been implemented.

In an online survey sent to health-care professionals in Germany, Hungary, Italy, the Netherlands, Spain and the United Kingdom, specific guidelines on chronic HBV and HCV infection in migrants were mentioned by only 23% (HBV infection) and 14% (HCV infection) of respondents (162). An Italian position paper compared French and Italian policies and recommendations for high-risk groups, including migrants (161). The evidence suggests that screening policies for HBV infection are similar in France, Italy and the United Kingdom. In the United Kingdom, screening was recommended for migrants from countries with an intermediate or high prevalence of chronic HBV infection (defined as a HBsAg prevalence of > 2%) (57). Similarly, in Italy screening is advised for migrants from areas of high prevalence of HBV, but the position paper does not state the exact threshold (161). In France, newly arrived irregular migrants, asylum seekers and residence permit applicants undergo a medical examination that does not include testing for chronic HBV infection (161). However, increased testing in France was achieved following a national action plan for 2009–2012 (161). Unfortunately, coverage is unevenly distributed because screening is not routine and relies on the physician's judgement. United Kingdom guidance on hepatitis B also includes guidance on infants born to HBsAg-positive mothers and recommends routine vaccination with appropriate follow-up (57).

In France, screening for chronic HCV infection has become more widespread since 2009, when the health budget for migrants included testing by state health-care centres for HCV but not HBV (161). In the United Kingdom the recommendation is that screening for chronic HCV infection should be considered for migrants from countries with a higher prevalence of HCV (58). In Italy, screening for chronic HCV infection is recommended for migrants from areas of high prevalence such as Egypt, the Middle East and Pakistan; however, the minimum prevalence at which screening should occur was not indicated (59). All three countries had policies to screen pregnant women regardless of their country of origin, which aligns with the WHO goal of 90% coverage screening for pregnant women (43).

Case study 4 describes an innovative method to identify best practices in hepatitis testing.


#### Case study 4. HepTestContest to identify best practices in hepatitis testing

The HepTestContest was a novel method to identify innovative approaches to deliver hepatitis testing (163) that aimed to support countries in scaling up hepatitis testing and supplement the development of formal recommendations on service delivery in the 2017 WHO Guidelines on hepatitis B and C testing (164). The contest involved a widely advertised call for contest entries, ranking entries according to specific criteria and promoting the best approaches, including through publication as case studies in the 2017 WHO Guidelines (164). Of 64 entries from 27 countries, two described innovative testing approaches for migrants: these were (i) using electronic medical records for risk stratification and clinician reminders and (ii) using social media to promote access to testing.

#### 2.3.2.2 Hepatitis B vaccination

Universal childhood hepatitis B vaccination was advocated by WHO in 2014 (159) and in 2019 had been implemented at national level in 49 of the 53 Member States of the WHO European Region. In the four others (Denmark, Finland, Iceland and Sweden), vaccination covered only high-risk groups (165). This was an improvement from 2013, when seven countries in the WHO European Region (including Norway and the United Kingdom) used a targeted vaccine approach (166). In Italy and the United Kingdom (the only two countries with migrant-specific guidelines), the guidelines did not include catch-up vaccination for those born before the start of universal infant immunization in their country of origin, contrary to WHO recommendations (57–59). The hepatitis B vaccination programmes in Italy and the United Kingdom target migrants in high-risk groups. In the United Kingdom, these include migrants who travel for extended periods to HBV-endemic countries, including those who have received medical treatment abroad (57). In Italy, the recommendation is that migrants in the following groups should be vaccinated: originate from highly endemic areas, drug users, non-immunized prison inmates, partners of an infected person, and patients with non-HBV-related chronic liver disease (59). Since there is no vaccination for HCV, the United Kingdom also offers country-specific guidance on exposure avoidance to prevent HCV infection (58).

An online survey to investigate awareness in health-care professionals of HBV and HCV screening and management in Germany, Hungary, Italy, the Netherlands, Spain and the United Kingdom found that only in the Netherlands were asylum seekers from high-prevalence areas commonly vaccinated and only in Spain were migrants commonly vaccinated (167). A high proportion of respondents from all



six countries also lacked awareness of current vaccination practices for migrants from high HBV prevalence areas. Surprisingly, this included respondents from Italy and the United Kingdom, where specific recommendations are available and were identified in the review (57,168).

### 2.3.3 Cost-effectiveness of viral hepatitis services

Until recently, evidence was lacking on the cost-effectiveness of screening for viral hepatitis among migrants. A 2010 ECDC review concluded that "almost no studies exist on the effectiveness or cost-effectiveness of migrant screening for HBV and/or HCV in Europe" (169). The only evidence available in 2010 was from the Netherlands and suggested that screening and early treatment of migrants for chronic HBV infection is cost-effective (170). Similarly, a review of 2011 (171) identified only one other study that also suggested that HBV screening of migrant groups was clinically effective and cost-effective, but this study was from the United States rather than Europe (172).

Since then, evidence has been growing steadily. In 2013 a systematic review identified four publications examining HBV screening of migrants born in endemic countries (HBsAg prevalence of  $\geq 2\%$ ), concluding that it was cost-effective (173). In 2018 a systematic review identified nine studies in the EU/EEA examining the cost-effectiveness of screening for chronic HBV infection. It concluded that HBV screening and treatment of migrants is highly likely to be cost-effective in populations with an HBV prevalence of  $\geq 2\%$ , and may also be cost-effective at a prevalence of as low as 0.3% (174). This finding supported a 2016 ECDC review that concluded that screening migrants from intermediate- and high-prevalence countries led to favourable outcomes; in contrast, screening those from low-prevalence countries was not considered cost-effective because in order to identify those with chronic HBV infection a targeted screening programme would have to reach a relatively large number of people (30).

Less evidence was available on the cost-effectiveness of interventions targeted to migrants for chronic HCV infection, and many of the older studies had been conducted before modern, highly effective HCV treatment was available. A 2013 systematic review concluded that there was insufficient evidence to draw conclusions (173). It identified only one economic analysis of HCV screening in migrants; this study examined screening in the Netherlands that targeted migrants from countries with an HCV prevalence of  $> 10\%$  (as well as other population subgroups). However, the study did not report the cost-effectiveness of targeted screening for migrants only (175). A later assessment reported that HCV testing for migrants in the United Kingdom was cost-effective (176).

The 2016 ECDC review endorsed the use of combined HBV/HCV screening as a way to increase the cost-effectiveness and yield of prevention efforts (30). However, both this and another review (173) concluded that studies on the cost-effectiveness of combined screening for migrants are lacking and much needed.

In summary, the available cost-effectiveness studies have concluded that HBV and HCV testing for migrants is cost-effective, particularly when targeted to migrants originating from high-prevalence countries. However, more research is needed, particularly on the cost-effectiveness of combined HBV/HCV testing, the proportion of eligible people who start treatment, disease progression rates with and without treatment, and treatment costs (173), including for elderly migrants (177).

## 2.4 Migrant access to health care

Free access to screening or treatment for TB, HIV, and hepatitis B and C varies considerably between countries and depends on the disease. Even if free access to health care is available to migrants, systemic barriers were identified. For example, in the United Kingdom, anyone who is diagnosed with hepatitis C and has given informed consent can receive treatment, although the guidance does not say whether this is free for all migrant groups (58). In Italy, free access to the national health-care system (for emergency and preventive services) is guaranteed, but free access to additional services depends on the type of residence permit (161): migrants with chronic diseases have free access to health care, whereas those who have been granted refugee status have to pay to access health-care services (similar to Italian citizens). Within Italy, health care for migrants is provided in different ways in different areas and regions: through associations, the national health-care system or collaboration between the two (e.g. in Rome) (161). In France, irregular migrants have free access to health care; however, this comes with several conditions: they must prove residency in France for over three months, have a place of residence and have submitted an application with the reception system (which requires the help of an expert) (161). Waiting times to obtain health coverage can take five to nine months. During this period, the migrant does not have access to free medical treatment, although this is often provided by humanitarian associations. In the Russian Federation, access to health care depends on migrant status, which has two major categories: (i) labour migrants with temporary or permanent resident permission plus non-labour migrants with permanent resident permission; and (ii) seasonal labour migrants and non-labour migrants with temporary resident permission. State-funded health-care coverage is accessible in the Russian



Federation for labour migrants from the Eurasian Economic Union, provided they have registration in the place they live and an official contract with an employer in the country. In addition, bilateral and multilateral agreements among countries of the Commonwealth of Independent States and of the Eurasian Economic Union regulate health-care coverage for citizens of these states (150).

### 2.4.1 Implementation of TB, HIV and viral hepatitis services: barriers and facilitators

More details of barriers/facilitators to implementing targeted TB, HIV, and hepatitis B and C services for migrants were found in reviews and commentaries of national policies of European countries than in national legislation, policy and guidelines documents. Table 8 summarizes the results of a thematic analysis of barriers and facilitators by systems levels: macro (policy or transnational), meso (community or service) and micro (structural, sociocultural or socioeconomic) levels (178).

**Table 8. Barriers and facilitators affecting the implementation of TB, HIV, and hepatitis B and C services to migrants, stratified by systems level**

Systems level	Barriers	Facilitators
Macro		
Policy	Restrictive immigration and health policies Data sharing Charging Complex entitlement regulations	Political commitment Integration into government plans/strategies Separation of health and legal systems Universal, affordable health care
Transnational	Lack of cross-border collaboration Poor data	Robust data collection, monitoring and evaluation Patient confidentiality and data protection Transnational continuity of care Cross-border collaboration and policy Cross-sectoral initiatives
Population	High mobility/dispersal	Voluntary testing

Table 8 contd

Systems level	Barriers	Facilitators
Meso		
Community	Lack of community support Stigma Racism Multiple discriminations Lower social status	Clear health information and messaging Involvement and engagement of affected communities Peer-support/community champions Public education and awareness-raising
Service	Structural discrimination Fragmentation/lack of joined-up care Knowledge and attitudes of health professionals Lack of provider awareness of entitlements Limited opening hours Inconsistencies in testing, treatment and charging across services Distance to services Time constraints of services <sup>a</sup>	Multidisease services Locally tailored interventions Availability of community-based services Health insurance/free at the point of care Training to ensure services are inclusive, diversity sensitive and culturally relevant Health service flexibility Broad range of screening and treatment services
Micro		
Structural	Limited knowledge of health and social care services, entitlements or protections Insecure legal status Fear Lack of trust	Patient involvement in health-care decisions and delivery Patient and community ownership Clear patient pathways Holistic approach/improving overall health and health-seeking behaviour Patient-centred approaches Awareness of rights and entitlements
Sociocultural	Language Religion Health belief models Social and emotional isolation Low self-perceived risk	Social support networks Access to interpreting/translation services Culturally relevant pre- and post-testing counselling



Table 8 contd

Systems level	Barriers	Facilitators
Socioeconomic	Social and economic insecurity from high-risk living conditions and poor working conditions Lack of health insurance Insecure housing Limited transportation	Convenient, patient-friendly outreach settings

<sup>a</sup> Resulting from limited opening/appointment times and a high demand for services.

Note: articles used to create this table are included in Annex 3.

The thematic analysis showed that research into the barriers to migrant access to emergency health care has typically focused on the perspective of the care provider (179,180). A review of qualitative studies from Europe and the United States found that emergency care providers made cultural and organizational adjustments for migrant patients and did prevent access to emergency care based on legal status. However, decisions varied on reporting undocumented migrants to the authorities, which could lead to uncertain outcomes for undocumented migrants and deter them from seeking treatment (180). The question of charging patients emerged as a cross-cutting issue for clinical management, "although Emergency Care Providers (ECPs) were adamant that in an emergency, giving treatment would always trump other considerations" (180). Cultural challenges included language barriers and some aspects of migrant behaviour that were unusual for the host country, including gender dynamics and lack of respect for authority. One review identified migrant stereotyping in many studies, with emergency care providers often stereotyping migrants as being from the lower socioeconomic classes and of marginalized status, who may lack understanding of the host country's health system, leading to inappropriate access of services (181). In another review, studies reported that emergency care providers perceived migrants as significantly more likely to present to emergency departments during unsocial hours and more likely than non-migrants to present with semi-urgent or non-urgent conditions (179). However, this behaviour was not confined to migrant groups, but was also observed in many lower socioeconomic groups (182). Providers also expressed a lack of knowledge on migrant health, and were often primarily informed by the media (180). To minimize the inappropriate use of emergency care services for non-urgent conditions, barriers to accessing primary care services must be alleviated and facilitators implemented, such as ensuring that services are inclusive, diversity sensitive and responsive to

the particular cultural needs of target groups (183). However, barriers in accessing emergency care services must also be addressed, including language barriers, perceived discrimination and being charged for non-urgent care, as reported for the United Kingdom (184). Another barrier is a lack of awareness in migrants of the structure and function of the health system of the host country, which prevents them from identifying the appropriate service for their health condition.

#### *2.4.1.1 Migrant access to health care in the United Kingdom*

Within the WHO European Region, the Member State with by far the most national policy and guideline documents relevant to migrants and TB, HIV or viral hepatitis was the United Kingdom (48,49,54–58,61,89,144,186,187). The United Kingdom is making considerable efforts to overcome some of the barriers faced by migrants in accessing health-care services. For example, the Public Health England guidance leaflet, Immunization information for migrants, is available online in 14 languages (61). The leaflet states that registering and using primary care is free in England and patients do not need to provide proof of identity or of migration status in order to register. This applies to asylum seekers, refugees, homeless people and overseas visitors (whether or not they are in the United Kingdom lawfully).

However, challenges remain, including adherence of health-care services with national guidelines. A 2017 report found wide variation in the TB screening process in National Health Service Trusts throughout England, with many still using outdated recommendations (87). It suggested that this might be due to a projected significant increase in case-load if the new guidelines were to be followed. Furthermore, the policy of free-of-charge primary care services in England may be subject to change (188):

The [United Kingdom] Government has looked to implement primary care charging for a number of years. Most recently, in the Government's 2015 to 2016 consultation on further extensions of charging, the Government canvassed views of stakeholders on charging in primary care. Authors submitted a consultation response detailing the public health impact of such a move and also supported a coalition of other NGOs [nongovernmental organizations] to respond making the case for access to primary care. In early 2017, the Government announced that they were putting off immediate plans to charge in primary care.

Barriers also persist at the community and individual levels, despite several legislative frameworks in the United Kingdom to protect people living with HIV from discrimination (including the United Nations General Assembly Special Session





Dedicated to HIV/AIDS (201), which was endorsed by the United Kingdom in 2001, and the Disability and Discrimination Act (1995–2005) (202)). For example, a recent survey of HIV stigma among migrants in the United Kingdom found that most were unaware of the policies and declarations that protected them as people living with HIV (189). Participants reported feeling pressure from professionals to disclose their HIV status. The stigma felt by some participants, including the shame of living with HIV, caused them to avoid social- and health-care services including clinics and hospital appointments. Some participants reported experiencing discrimination and had been denied health-care and insurance services because they were living with HIV. They also reported stigma and discrimination from some health-care professionals and from their communities.

Therefore, despite some successes, barriers to access remain at all systems levels in the United Kingdom. Political commitment must be maintained, and further initiatives are needed to improve adherence by health-care providers to current policy and implement facilitators to enable migrant access to health-care services.

Case study 5 describes a recent initiative to improve access to health services for Syrian refugees in Turkey.

#### Case study 5. Improving access to health services for Syrian refugees in Turkey

A recent scoping review highlighted the substantial efforts made to facilitate access to reproductive health services for Syrian refugees in Turkey (190). Syrians in Turkey can access health services at refugee health centres as well as at hospitals. A total of 106 refugee health centres provide health care for Syrian refugees, and an additional 178 are planned (191). In an attempt to overcome language barriers, Syrian doctors and nurses are trained in the functioning of the Turkish health-care system and hired to work in refugee health centres run by the Ministry of Health in collaboration with WHO (192,203,204). However, although all health services for Syrians registered with the Turkish Government are provided free of charge (193), official data are lacking on how many Syrians in Turkey are not registered, Syrian refugees face barriers to access and their utilization of the services remains below the desired levels (190). The review found that data on the needs of and challenges for the Syrian population in Turkey are rapidly becoming outdated. Therefore, regular monitoring, with more implementation research, is required to identify barriers and challenges to inform evidence-based strategies to improve access to health-care services for this population.

#### 2.4.2 Data collection on migrant health

The review identified frequent calls to strengthen data collection on migrant status in health systems across Europe. WHO has highlighted an urgent need to integrate migration health data into every national HIS in order to make data available for policy planning and for implementing refugee- and migrant-sensitive policies and intervention programmes (185). For example, although health data may be available in a particular country, it might not be possible to disaggregate data by migratory status, and even where data on migratory status exist they may not currently be linked to and/or integrated with health data. Where countries collect migration health data, these data may not currently be representative of all migrant populations. Other barriers to data collection include difficulties in accessing key migrant subgroups, mistrust, language barriers, the large and varied choice of health indicators, and definitions of health and migrant. Data sharing between agencies is also limited, partly because of incompatible software systems and data protection regulations at both the national and regional levels (185).



## 3. DISCUSSION

### 3.1 Strengths and limitations of this review

The systematic review of existing national policies and guidelines for delivering effective TB, HIV and viral hepatitis services for refugees and migrants for Member States of the WHO European Region was based on a comprehensive search of the available literature in English and Russian. This was supplemented with additional targeted searches for relevant published and unpublished documents in the e-library.ru Russian language database because information gaps for the Russian Federation had been identified in a previous, related WHO HEN report (116). Further relevant literature was identified through contacting members of the WHO TB, HIV, Hepatitis and Migration networks and searching the Ministry of Health websites of Member States.

A strength of the review is that it focused on the most relevant recent evidence (published since 2010) because this field is relatively fast moving and policy-makers need to consult the most relevant research in order to make evidence-informed decisions. Many of the included documents were surveys of relevant health-care professionals to ascertain the current national policies and guidance regarding migrants; however, these covered only a narrow range of Member States in the Region. Even where specific national guidelines were available, such as for Italy and the United Kingdom, the studies typically revealed a lack of awareness of these guidelines by relevant health-care and public health professionals.

It was difficult to gauge whether formal national policies pertaining to migrants and TB, HIV and viral hepatitis do not exist in many countries of the Region or whether gaps were found because relevant documents are inaccessible. Future searches of WHO European Region ministry of health websites with no language restrictions, combined with expert interviews in key receiving countries, are needed to identify other potentially relevant documents to enable a fully comprehensive review of all relevant policy documents.

## 3.2 National policies/guidelines for delivering TB, HIV and viral hepatitis services for refugees and migrants

Of the 260 relevant articles identified, only 15 were primary policies/guidelines on TB, HIV and viral hepatitis in migrants (47–61). The remainder included research articles evaluating national policies and the extent to which these policies had been implemented. Data were lacking from some Member States, in particular those in eastern Europe and central Asia. Table A2 lists 16 potentially relevant articles in languages other than English and Russian. Analysis of these articles was outside the scope of the review; however, their relatively small number suggests that guidance documents on delivering effective TB, HIV and viral hepatitis services for refugees and migrants are not easily accessible in many countries of the WHO European Region.

WHO and the United Nations General Assembly have called for the provision of targeted, non-discriminatory health protection services for migrants in both transit and destination countries, in accordance with their human rights (39,42). Despite this, the review found significant heterogeneity in the implementation of TB, HIV and viral hepatitis prevention, diagnosis, treatment and care measures across the WHO European Region. Furthermore, official national policies and guidelines on TB, HIV and viral hepatitis often do not align with WHO recommendations and are not accessible to migrant populations.

Recommendations for improved service delivery were highlighted in many of the reports (116) but remain to be addressed across the WHO European Region. They include incorporating screening and treatment for TB, HIV and viral hepatitis into refugee and migrant screening programmes (e.g. at the first point of contact for newly arrived migrants with health services in the host country). This should be done in an accessible and culturally sensitive manner as part of a basic, free package of care. Furthermore, improved cross-border collaboration for infection screening and care is needed along the entire migration trajectory, with a focus on implementing a minimum package of screening and care (67). Many publications advocated developing a more holistic approach to migrant health across the Region that recognizes migrants' right to health and aims to remove the legal, social and cultural barriers to health services to improve the control of TB, HIV and viral hepatitis. This would require a multisectoral approach, with support at all levels of government.



## 3.3 Improving TB, HIV and viral hepatitis services for refugees and migrants

A secondary aim of the review was to evaluate the facilitators and barriers to access to TB, HIV and viral hepatitis services for migrants and the cost-effectiveness of existing services. As the search strategy was not specifically designed to capture all articles examining the barriers and facilitators to migrant access to services and the cost-effectiveness of these services, targeted (rather than comprehensive) reviews were conducted for these topics.

### 3.3.1 Facilitators and barriers for migrants in accessing health services

A thematic analysis was performed to identify the key barriers and facilitators operating at the macro, meso and micro levels; most of these were relevant to all four disease (TB, HIV, and viral hepatitis B and C).

**At the macro level**, the need for political commitment to the formation and implementation of national policy was frequently emphasized. Many documents highlighted the importance of strengthening approaches to data collection to provide a Regional evidence base on TB, HIV and viral hepatitis in migrants for monitoring and evaluation within national health systems. Data protection and separation between the health and legal systems are imperative to promote confidence in migrants of these data collection systems (185).

**At the meso level**, stigma associated with a diagnosis of TB, HIV or viral hepatitis was frequently highlighted as a barrier for migrants. Articles discussed the importance of involving and engaging affected communities, peer support and community champions, and of clear health information messaging. They emphasized that access to services should be promoted by removing financial barriers such as upfront payments and that service use should be facilitated by offering culturally relevant care for multiple health conditions, offering the flexibility to meet the target population's needs.

**At the micro level**, sociocultural factors included removing language barriers and providing appropriate counselling and education. Migrants may experience fear and lack of trust, particularly about their right to remain in the host country, and may have limited knowledge of the local health and social care services. Documents recommended that migrants should be involved in health-care decision-making and delivery, as well as in developing health education to

improve health literacy on the prevention, treatment and care for TB, HIV and viral hepatitis. This would increase migrants' knowledge, awareness and, subsequently, use of health services, as well as awareness of their rights and entitlements.

### 3.3.2 Cost-effectiveness of targeted interventions for migrants

Most evaluations of the cost-effectiveness of targeted interventions for migrants concerned TB; substantial research gaps exist for HIV and hepatitis B and C, which need to be addressed.

Although progress has been made in evaluating the cost-effectiveness of incorporating LTBI screening into migrant screening programmes and in targeting migrants from countries of high TB incidence, consensus is lacking. Knowledge gaps relate to disaggregating cost-effectiveness by migrant type, reason for migration and factors such as age and migration trajectory, which screening method to use and which point (pre- or post-entry) and location are best for screening. Evidence is still lacking on the most cost-effective or efficient approaches for TB detection and the continuum of care across national borders. Documents recommended addressing these gaps by obtaining prospective, multicentre data on LTBI prevalence in migrants and assessing the performance of screening tools and the outcomes of screening in different locations.

Focus has increased on pre-entry screening programmes, particularly in low-incidence countries: this is regarded as cost-effective for the host country but only targets a specific subset of migrants (i.e. those with planned migration routes to receiving countries). As a result, many migrants would not be covered by these programmes. A further important gap is the economic evaluation of targeted interventions for multiple infections for migrants.

### 3.3.3 Collection of migration health data

The WHO recommendation to integrate migration health data directly into national HIS will make policy implementation far easier and more sustainable in the long term. It also increases the availability of migration health data and supports data comparison with the host population. The alternative of creating a separate system specifically for refugees and migrants risks reducing comparability with the host and other populations. It is also likely to be more technically complex, resource intensive and, overall, unsustainable for many countries. The integration of a set of core variables into HIS will facilitate disaggregation of HIS data by migratory status. Core variables include country of birth, country of citizenship, year and



month of arrival and country of birth of both parents. Although many challenges to implementing such systems exist, technical guidance and support are available (185) to start making these essential changes to address health inequality among refugees and migrants and ensure their equitable health status in the population.

No single source can provide all the data needed for HIS, much less for migration health data. Consequently, a combination of sources is necessary, requiring cooperation and linkage between datasets from different entities, organizations and ministries. Qualitative data sources should also be considered and integrated into routine data collection systems to support further exploration of the health needs of refugees and migrants.

Overall, recommendations for migration health data collection and dissemination focus on targeted integration into national HIS to support the sustainability, ease, effectiveness and quality of migration health data. Routinely collected migration health data, using core variables, will enable disaggregation by migratory status in order to better understand the health needs of this population.

### 3.4 Future research

To ensure an adequate evidence base for Member States to develop effective policies and guidelines, future research efforts should include:

- analysing patterns of TB, HIV and viral hepatitis prevalence and transmission in migrant populations and defining high-risk thresholds for these diseases in migrant populations;
- conducting well-parameterized cost-effectiveness analyses to identify efficient targeted screening approaches that incorporate an analysis of equity (percentage of cases missed by targeting strategy);
- carrying out qualitative studies of migrants' perception of available services to evaluate the impact of guidance and other national documents on migrants' rights, access to care and treatment adherence; and
- performing regular surveys at regional level to catalogue national policies and guidelines and their adherence to WHO/ECDC recommendations.

### 3.5 Policy considerations

Based on the findings of this review, the main policy considerations for Member States to improve TB, HIV and viral hepatitis services for refugees and migrants among Member States of the WHO European Region are to:

- improve the online accessibility of national policies and guidelines on the infectious disease prevention, diagnosis, treatment and care for refugees and migrants, including reporting the evidence base used in their development;
- support WHO in opening dialogues with Member States whose policies do not align with WHO and ECDC recommendations on delivering TB, HIV and viral hepatitis services to refugees and migrants, to elicit the reasons for the current policies and identify the barriers to policy change;
- increase national efforts to inform and combat misinformation about migrants, address stigma and discrimination, and encourage and improve inclusive approaches, including by promoting health literacy and incorporating advice from experts on behaviour;
- design and implement initiatives to improve awareness in refugees and migrants of relevant policies and guidelines that promote patient rights;
- strengthen health systems by:
  - providing awareness training on migrant health for health-care practitioners to increase their adherence to national policies and guidelines; and
  - developing initiatives to improve service delivery for refugees and migrants by removing barriers to access and utilizing facilitators;
- strengthen routine health data collection to improve monitoring of migration health data and optimize targeted screening strategies by:
  - integrating migration health data into national HIS;
  - disaggregating health data by migrant subgroups using WHO-recommended core variables (country of birth, country of citizenship, month and year of arrival, and country of birth of both parents) plus a second set of recommended variables to enable disaggregation by subgroups of migrants (i.e. reasons for migration, knowledge of official language(s) of host country, ever resided abroad<sup>5</sup> and legal status); and

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5. That is, in a country other than the host country or country of origin.





- introducing dynamic reporting of estimates of infectious disease prevalence in different migrant populations; and
- conduct comprehensive assessments of barriers to health (including cultural and language barriers, physical barriers, legal barriers and entitlements, fear of registration and deportation, out-of-pocket payments, discrimination and stigma, insufficient training for health and social services providers) with the involvement of refugee and migrant groups.

## 4. CONCLUSIONS

This report evaluated national policies and guidelines that included specific recommendations for delivering effective TB, HIV and viral hepatitis services for refugees and migrants within the WHO European Region. Online availability of official national policies and guidelines for these conditions among migrant populations was inadequate, making it difficult for policy-makers, researchers and other stakeholders to assess the situation across the Region. Even where specific national guidelines were available, such as for Italy and the United Kingdom, evaluations typically revealed a lack of awareness of these guidelines by relevant health practitioners. More transparent and accessible reporting of national policies and guidelines on the prevention, diagnosis, treatment and care of TB, HIV and viral hepatitis in migrants is required for all Member States in the Region, with provision of the evidence base upon which these policy decisions are based.

Political engagement is essential to drive changes in national legislation to ensure equitable and universal access to diagnosis and care for infectious diseases, and reduce the social risk factors for both migrants and host populations. Therefore, dialogues should be fostered with Member States whose policies do not align with WHO and ECDC recommendations for delivering TB, HIV and viral hepatitis services to refugees and migrants to understand the reasons for current policies and identify macro-level barriers to policy change.

To comply with WHO/ECDC recommendations, national infectious disease programmes should address barriers to uptake by migrant populations and barriers to adoption of policies by health-care practitioners. Cost-effectiveness analyses are required to identify optimally designed interventions for TB, HIV and viral hepatitis.




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## ANNEX 1. SEARCH STRATEGY

### Databases and websites

Searches of peer-reviewed literature in four English-language databases (Embase, Health Management Information Consortium, Medline and OpenGrey) from inception to the search date were carried out on 30 November 2020. In addition, a targeted search for relevant published and unpublished documents in Russian in the Electronic Library of Scientific Publications (e-library.ru; integrated into the Russian Science Index) was conducted using the defined search terms in Russian on 23 March 2021. Grey literature was also obtained by searching the websites of ECDC, WHO and ministries of health of WHO European Region Member States (Table A1). Additional relevant articles were identified by contacting members of WHO team networks for TB ( $n = 373$ ), hepatitis and HIV ( $n = 633$ ), and Migration ( $n = 44$ ), and from WHO co-authors/collaborators and by snowball searching of included articles ( $n = 63$ ).

**Table A1** Government or ministry of health websites of Member States of the WHO European Region<sup>a</sup>

Country	Website	Hits
Albania	<a href="http://www.shendetesia.gov.al/">http://www.shendetesia.gov.al/</a>	0
Andorra	<a href="http://www.salut.ad/">http://www.salut.ad/</a>	0
Armenia	<a href="http://www.gov.am/en/structure/1/">http://www.gov.am/en/structure/1/</a>	0
Austria	<a href="https://www.bmgf.gv.at/home/EN/Home&lt;sup&gt;b&lt;/sup&gt;">https://www.bmgf.gv.at/home/EN/Home<sup>b</sup></a>	2
Azerbaijan	<a href="http://www.sehiyye.gov.az/">http://www.sehiyye.gov.az/</a>	0
Belarus	<a href="http://minzdrav.gov.by/en/">http://minzdrav.gov.by/en/</a>	0
Belgium	<a href="https://www.health.belgium.be/en/about-fps">https://www.health.belgium.be/en/about-fps</a>	0
Bosnia and Herzegovina	<a href="http://www.fbihvlada.gov.ba/english/ministarstva/zdravstvo.php">http://www.fbihvlada.gov.ba/english/ministarstva/zdravstvo.php</a>	0
Bulgaria	<a href="https://www.mh.government.bg/bg/">https://www.mh.government.bg/bg/</a>	0
Croatia	<a href="http://www.mzss.hr&lt;sup&gt;b&lt;/sup&gt;">http://www.mzss.hr<sup>b</sup></a>	4
Cyprus	<a href="https://www.moh.gov.cy/moh/moh.nsf/index_gr/index_gr?OpenDocument">https://www.moh.gov.cy/moh/moh.nsf/index_gr/index_gr?OpenDocument</a>	1

Table A1 contd

Country	Website	Hits
Czechia	<a href="https://www.mzcr.cz/en/">https://www.mzcr.cz/en/</a>	0
Denmark	<a href="https://sum.dk/">https://sum.dk/</a>	1
Estonia	<a href="https://www.sm.ee/en">https://www.sm.ee/en</a>	0
Finland	<a href="http://stm.fi/en/ministry">http://stm.fi/en/ministry</a>	0
France	<a href="http://solidarites-sante.gouv.fr/">http://solidarites-sante.gouv.fr/</a>	0
Georgia	<a href="http://www.moh.gov.ge/">http://www.moh.gov.ge/</a>	0
Germany	<a href="https://www.bfarm.de/DE/Home/home_node.html">https://www.bfarm.de/DE/Home/home_node.html</a>	0
Greece	<a href="http://www.moh.gov.gr/">http://www.moh.gov.gr/</a>	0
Hungary	<a href="http://www.eum.hu/main.php&lt;sup&gt;b&lt;/sup&gt;">http://www.eum.hu/main.php<sup>b</sup></a>	0
Iceland	<a href="https://www.landlaeknir.is/english/">https://www.landlaeknir.is/english/</a>	0
Ireland	<a href="http://health.gov.ie/">http://health.gov.ie/</a>	0
Israel	<a href="https://www.gov.il/he/departments/ministry_of_health/govil-landing-page">https://www.gov.il/he/departments/ministry_of_health/govil-landing-page</a>	0
Italy	<a href="http://www.salute.gov.it/">http://www.salute.gov.it/</a>	7
Kazakhstan	<a href="https://www.gov.kz/memleket/entities/dsm?lang=en">https://www.gov.kz/memleket/entities/dsm?lang=en</a>	0
Kyrgyzstan	<a href="http://www.med.kg/&lt;sup&gt;b&lt;/sup&gt;">http://www.med.kg/<sup>b</sup></a>	0
Latvia	<a href="http://www.vm.gov.lv/en/">http://www.vm.gov.lv/en/</a>	1
Lithuania	<a href="https://sam.lrv.lt/en/">https://sam.lrv.lt/en/</a>	5
Luxembourg	<a href="https://gouvernement.lu/en.html">https://gouvernement.lu/en.html</a>	0
Malta	<a href="https://deputyprimeminister.gov.mt/en/Pages/health.aspx">https://deputyprimeminister.gov.mt/en/Pages/health.aspx</a>	0
Monaco	<a href="http://en.gouv.mc/Government-Institutions/The-Government/Ministry-of-Health-and-Social-Affairs">http://en.gouv.mc/Government-Institutions/The-Government/Ministry-of-Health-and-Social-Affairs</a>	0
Montenegro	<a href="https://mzdravlja.gov.me/ministarstvo">https://mzdravlja.gov.me/ministarstvo</a>	0
Netherlands	<a href="https://www.government.nl/ministries/ministry-of-health-welfare-and-sport">https://www.government.nl/ministries/ministry-of-health-welfare-and-sport</a>	0
North Macedonia	<a href="http://zdravstvo.gov.mk/">http://zdravstvo.gov.mk/</a>	0

Table A1 contd

Country	Website	Hits
Norway	<a href="https://www.regjeringen.no/">https://www.regjeringen.no/</a>	0
Poland	<a href="http://www.mz.gov.pl/en/#">http://www.mz.gov.pl/en/#</a>	0
Portugal	<a href="https://www.portugal.gov.pt/pt/gc21/area-de-governo/saude&lt;sup&gt;b&lt;/sup&gt;">https://www.portugal.gov.pt/pt/gc21/area-de-governo/saude<sup>b</sup></a>	0
Republic of Moldova	<a href="https://msmps.gov.md/en/">https://msmps.gov.md/en/</a>	0
Romania	<a href="http://www.ms.ro/">http://www.ms.ro/</a>	0
Russian Federation	<a href="http://government.ru/en/department/23/events/">http://government.ru/en/department/23/events/</a>	0
San Marino	<a href="http://www.sanita.sm/online/home.html&lt;sup&gt;b&lt;/sup&gt;">http://www.sanita.sm/online/home.html<sup>b</sup></a>	0
Serbia	<a href="http://www.zdravlje.gov.rs/">http://www.zdravlje.gov.rs/</a>	0
Slovakia	<a href="http://www.health.go.sk&lt;sup&gt;b&lt;/sup&gt;">www.health.go.sk<sup>b</sup></a>	0
Slovenia	<a href="http://www.mz.gov.si/en/">http://www.mz.gov.si/en/</a>	1
Spain	<a href="http://www.msc.es/">http://www.msc.es/</a>	1
Sweden	<a href="http://www.government.se/">http://www.government.se/</a>	0
Switzerland	<a href="https://www.bag.admin.ch/bag/en/home.html#">https://www.bag.admin.ch/bag/en/home.html#</a>	4
Tajikistan	<a href="http://moh.tj&lt;sup&gt;b&lt;/sup&gt;">http://moh.tj<sup>b</sup></a>	0
Turkey	<a href="http://health.istanbulsaglik.gov.tr&lt;sup&gt;b&lt;/sup&gt;">http://health.istanbulsaglik.gov.tr<sup>b</sup></a>	0
Turkmenistan	<a href="https://turkmenistan.gov.tm/tk">https://turkmenistan.gov.tm/tk</a>	0
Ukraine	<a href="http://www.kmu.gov.ua/">http://www.kmu.gov.ua/</a>	0
United Kingdom	<a href="https://www.gov.uk/government/organizations/department-of-health&lt;sup&gt;c&lt;/sup&gt;">https://www.gov.uk/government/organizations/department-of-health<sup>c</sup></a>	21
Uzbekistan	<a href="http://www.minzdrav.uz/en&lt;sup&gt;b&lt;/sup&gt;">http://www.minzdrav.uz/en<sup>b</sup></a>	0

<sup>a</sup> These websites were accessed between December 2020 and February 2021, during the literature search and data extraction stages of the review.

<sup>b</sup> These webpages are no longer functional, but can be viewed via WayBack Machine at Internet Archive (<https://archive.org/web/>).

<sup>c</sup> The Department of Health is now the Department of Health and Social Care (<https://www.gov.uk/government/organisations/department-of-health-and-social-care>).





## Search terms

Search terms were related to TB, HIV, HBV, HCV, migration, and policy or guidance documents (in English or Russian).

A representative search strategy (Medline) is shown below:

human migration/ or migration.mp. or migrant\*.mp. or “transients and migrants”/ or “emigrants and immigrants”/ or immigra\*.mp. or expatriate\*.mp. or refugees/ or refugee\*.mp. or departee.mp. or “emigration and immigration”/ or emigr\*.mp. or asylum.mp. or foreign-born.mp. or foreign born.mp. or foreign worker\*.mp. or international student\*.mp. or human traffick\*.mp. or Human Trafficking/ or people traffick\*.mp. or sex traffick\*.mp. or ((wom?n or child\* or men or man) adj2 traffick\*).mp. (tuberculosis or tb or (LTBI or latent tuberculosis) or (MDRTB or XDRTB or XDR-TB)).mp. or exp Tuberculosis, Multidrug-Resistant/ or exp Tuberculosis exp HIV/ or (HIV or (“human immun\*” and virus)).mp. or (“acquired immun\*” and syndrom\*) or “aids virus” or “HIV/AIDS”).mp. or Acquired Immunodeficiency Syndrome/ or PLWH\*.mp. or antiretroviral\*.mp. or Anti-Retroviral Agents (HCV or HBV or HBsAg or viral hepatiti\*).mp. or exp Hepatitis, Viral, Human/ or (hepatiti\* adj3 virus).mp (Europe/ and World Health Organization/) or WHO european region.mp. or (Albania or Andorra or Armenia or Austria or Azerbaijan or Belarus or Belgium or Bosnia or Herzegovina or Bulgaria or Croatia or Cyprus or Czechia or Denmark or Estonia or Finland or France or Georgia or Germany or Greece or Hungary or Iceland or Ireland or Israel or Italy or Kazakhstan or Kyrgyzstan or Latvia or Lithuania or Luxembourg or Malta or Monaco or Montenegro or Netherlands or Norway or Poland or Portugal or Moldova or Romania or the Russian Federation or Russian Federation or San Marino or Serbia or Slovakia or Slovenia or Spain or Sweden or Switzerland or Tajikistan or Macedonia or Yugoslavia or Yugoslav or Turkey or Turkmenistan or Ukraine or United Kingdom or United Kingdom or England or Ireland or Scotland or Wales or Great Britain or Uzbekistan or EEA or EU or European Union or Europe or European Economic Area).mp. exp clinical pathway/ or exp clinical protocol/ or exp consensus/ or exp consensus development conference/ or exp consensus development conferences as topic/ or critical pathways/ or guidelines as topic/ or exp practice guideline/ or practice guidelines as topic/ or health planning guidelines/ or (guideline or practice guideline or consensus development conference or consensus development conference, NIH). pt. or ((practice or treatment\* or clinical) adj guideline\*).ab. or (CPG or CPGs).ti. or consensus\*.ab. /freq=2 or polic\*.mp. or (Health Policy/ or Organizational Policy/ or Policy/ or Policy-making/ or Public Policy/) or technical report\*.mp. or technical report.pt. [mp=ti, ab, hw, tn, ot, dm, mf, dv, kw, fx, dq, nm, kf, ox, px, rx, ui, sy]

## Study selection

Studies were selected according to PRISMA guidelines (Fig. A1) (1). Titles and abstracts of all citations identified through the searches were screened by one reviewer (JN or RFB); duplicate screening was performed for a subset of documents, with discrepancies resolved by consensus. The full texts of relevant publications were screened to identify papers for inclusion.

Inclusion criteria were:

- reviews, viewpoints/editorials, policy documents, guidelines and grey literature (including national/international reports and case studies) reporting on policies or guidelines relevant to the prevention, diagnosis, treatment or care of TB, HIV/AIDS, or hepatitis B or C among migrants<sup>6</sup> in the WHO European Region;
- primary research on the implementation or effectiveness of policies and guidelines;
- published after 2010 (for Member States with few identified documents, older documents were also included); and
- published in English or Russian.

Exclusion criteria were:

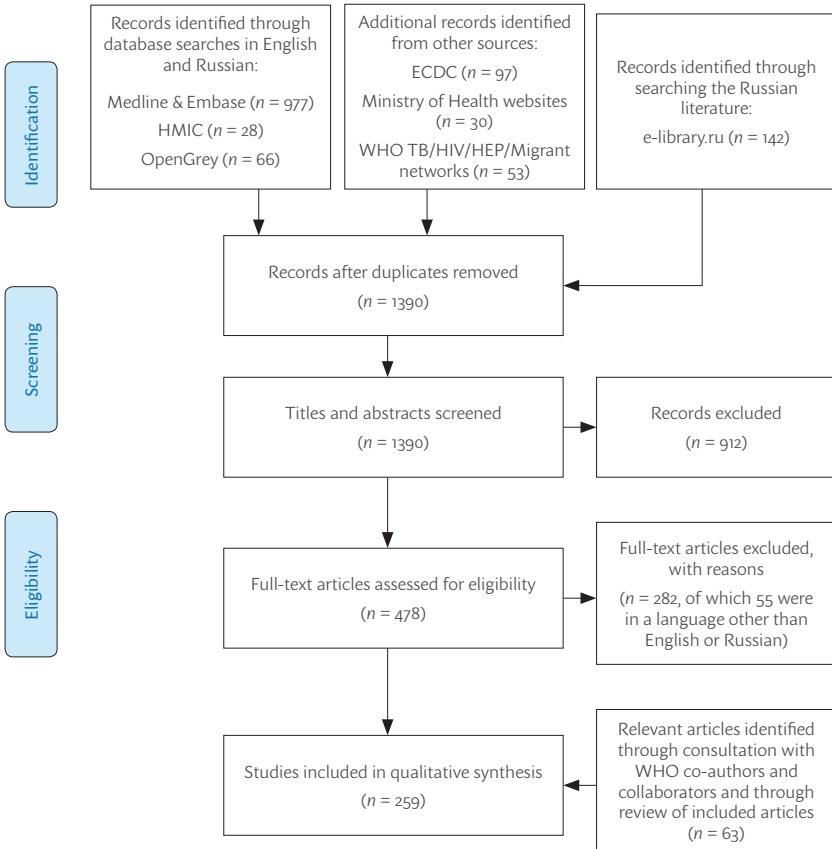
- does not mention refugees, migrants or asylum seekers in the main text;
- about countries outside the WHO European Region;
- report the results of primary research, except for primary research collating information on policies or study participants' opinions on policies; or
- university thesis.

Reviewing documents published in languages other than English and Russian was beyond the scope of this analysis; however, 16 documents were excluded based on language (listed in Table A2). Of these, 9 appear to be national guidance/recommendation documents (Cyprus (2), Czechia (3), Germany (4), Israel (7), Italy (10), Lithuania (11,12) and Spain (13,14)) for one or more of the three infectious diseases, but only one was specifically related to migrants.

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6. Defined as any individuals residing in a different country from the one in which they were born.

Fig. A1. Flowchart of included studies: summary of literature search and screening process



HMIC: Health Management Information Consortium.

**Table A2** Potentially relevant documents that were not included in the review based on language<sup>a</sup>

Country	Disease(s) covered	Population group	Year	Language	Title of document
Cyprus (2)	TB	Adults	2020	Greek	Στρατηγική για τον Έλεγχο της Φυματίωσης στην Κύπρο [Strategy for the control of tuberculosis in Cyprus]
Czechia (3)	HBV	Adults	2018	Czech	Nová evropská a česká doporučení pro léčbu hepatitidy B [New European and Czech guidelines for hepatitis B therapy]
Germany (4)	TB	Adults	2017	German	Szkl-Leitlinie: Tuberkulose im Erwachsenenalter [Tuberculosis guideline for adults]
Germany (5)	Infectious diseases <sup>b</sup>	Refugees	2016	German	Infektionen bei Migranten und ihren Kindern [Infectious diseases in refugees and their minors arriving in Germany – what the GP needs to know]
Germany (6)	Infectious diseases <sup>b</sup>	Refugees	2016	German	Versorgung von minderjährigen Flüchtlingen: Schwerpunkt Diagnostik und Prävention von Infektionskrankheiten [Care of child and adolescent refugees: focus on diagnosis and prevention of infectious diseases]

Table A2 contd

Country	Disease(s) covered	Population group	Year	Language	Title of document
Israel (7)	HCV	Adults	2021	Hebrew	תלחמ רוגימל תימואל תינכת לארשיב C סיטיספהה [A national programme to eradicate hepatitis C in Israel]
Italy (8)	TB	Migrants	2011	Italian	Tubercolosi ed immigrazione: criticità e possibili azioni risolutive [Tuberculosis and immigration: criticality and possible remedial actions]
Italy (9)	TB	Migrants	2018	Italian	Il controllo della tubercolosi tra gli immigrati in Italia: linea guida salute migranti [The control of tuberculosis among immigrants in Italy: migrant health guideline]
Italy (10)	Infectious diseases <sup>b</sup>	Migrants	2020	Italian	Linea guida per uniformare i controlli sanitari ai migranti [Guideline for standardizing health checks for migrants]
Lithuania (11)	TB	Adults	2020	Lithuanian	Mes norime, kad niekas nemirtų nuo tuberkuliozės! Arba kaip išvengti šios ligos? [We want no one to die of tuberculosis! Or how to prevent this disease?]

Table A2 contd

Country	Disease(s) covered	Population group	Year	Language	Title of document
Lithuania (12)	HIV	Adults	2020	Lithuanian	Užkrečiamųjų ligų ir AIDS centro specialistai parengė keturias naujas metodines rekomendacijas [Specialists from the Center for Communicable Diseases and AIDS have developed four new methodological guidelines]
Spain (13)	TB	Children	2010	Spanish	Diagnóstico de la tuberculosis en la edad pediátrica [Diagnosis of tuberculosis in paediatrics]
Spain (14)	TB	Pregnant women and neonates	2015	Spanish	Guía de la Sociedad Española de Infectología Pediátrica sobre tuberculosis en la embarazada y el recién nacido (I): epidemiología y diagnóstico. Tuberculosis congénita [Spanish Society for Paediatric Infectious Diseases guidelines on tuberculosis in pregnant women and neonates (I): Epidemiology and diagnosis. Congenital tuberculosis]
Spain (15)	HCV	Adults	2020	Spanish	Guía de cribado de la infección por el VHC en España, 2020 [Guide for the screening of HCV infection in Spain, 2020]

Table A2 contd

Country	Disease(s) covered	Population group	Year	Language	Title of document
Switzerland: Geneva (16)	TB	Migrants aged < 16 years	2016	French	Le dépistage de la tuberculose en milieu scolaire [Tuberculosis screening in school health services in Geneva, Switzerland]
Switzerland: Canton of Vaud (17)	TB	Asylum seekers	2019	French	Consensus vaudois de prise en charge de maladies infectieuses auprès des requérants d'asile et détenus [Consensus for the management of infectious diseases among asylum seekers and detainees in the canton of Vaud]

<sup>a</sup> National and regional policies and guidelines for managing TB, HIV, HBV and HCV with the main text in a language other than English or Russian identified in the review.

<sup>b</sup> Unclear which infectious diseases are covered in the document.


## Data extraction and assimilation

Articles were organized and deduplicated using Rayyan (an app designed for systematic reviews) (18). A data extraction form was developed based on the study aims to extract data in the following categories: doi, year of publication, authors, title and abstract, language, organization, type of document, methods, disease, focus (prevention, diagnosis, treatment or care), migrant population, country, and relevant policy content (legislation, policy, or guideline; recommendations; alignment with WHO-recommended actions; barriers and facilitators to implementation of guidance; cost-effectiveness or national funding allocation; and gaps). The form was piloted by two reviewers prior to full data extraction. For validation of data extraction, a subset of extracted documents was reviewed by each reviewer. Framework analysis was conducted to identify key themes across policy content categories (19).

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## ANNEX 2. GLOSSARY

The following definitions relating to migrants are taken from the International Organization for Migration (IOM) 2019 Glossary on Migration (1).

**Irregular migrant.** A person who moves or has moved across an international border and is not authorized to enter or to stay in a state pursuant to the law of that state and to international agreements to which that state is a party.

**Migrant.** An umbrella term, not defined under international law, reflecting the common lay understanding of a person who moves away from his or her place of usual residence, whether within a country or across an international border, temporarily or permanently, and for a variety of reasons. The term includes a number of well-defined legal categories of people, such as migrant workers; persons whose particular types of movements are legally defined, such as smuggled migrants; as well as those whose status or means of movement are not specifically defined under international law, such as international students.

**Long-term migrant.** A person who moves to a country other than that of his or her usual residence for a period of at least one year, so that the country of destination effectively becomes his or her new country of usual residence.

**Short-term migrant.** A person who changes his or her place of usual residence for more than three months but less than a year (12 months). Except in cases where the move to that country is for purposes of recreation, holiday, visits to friends or relatives, business or medical treatment.

**Migrant worker.** A person who is to be engaged, is engaged or has been engaged in a remunerated activity in a state of which he or she is not a national.

**Refugee (under the 1951 Refugee Convention).** A person who, owing to a well-founded fear of persecution for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country; or who, not having a nationality and being outside the country of his former habitual residence as a result of such events, is unable or, owing to such fear, is unwilling to return to it.




**Undocumented migrant.** A non-national who enters or stays in a country without the appropriate documentation.

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## ANNEX 3. ADDITIONAL BACKGROUND MATERIALS

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**World Health Organization**

**Regional Office for Europe**

UN City, Marmorvej 51, DK-2100 Copenhagen Ø, Denmark

Tel.: +45 45 33 70 00

Fax: +45 45 33 70 01

Email: [eurocontact@who.int](mailto:eurocontact@who.int)

Website: [www.euro.who.int](http://www.euro.who.int)

