

Asylum seeker and refugee infectious diseases screening in Switzerland

A literature review of policy, practice and barriers to access.

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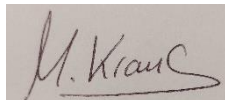
A thesis submitted in partial fulfilment of the requirement for the degree of Master of Science in International Health by Melanie Kraus

Declaration:

Where other people's work has been used (from either a printed or virtual source, or any other source), this has been carefully acknowledged and referenced in accordance with academic requirements.

The thesis 'Asylum seeker and refugee infectious diseases screening in Switzerland. A literature review of policy, practice and barriers to access.' is my own work.

Signature:

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Abstract

Introduction

The number of asylum seekers and refugees arriving in Switzerland has increased in recent years. This population is disproportionately affected by certain chronic infectious diseases. This thesis aims to describe the current policy for and practice of infectious diseases screening in Switzerland and analyze access barriers.

Methods

Scientific literature and grey literature were assessed for the policy review. A literature review on implementation and access barriers to infectious diseases screening in asylum seekers and refugees in Switzerland was performed. Access barriers to infectious diseases screening were analyzed using Levesques framework.

Results

Policy and Implementation: Active TB screening is done at federal reception centres via questionnaire. Further screening is recommended after transferal to cantonal level through the local GP. If and how often screening is done by GPs is unclear. Main barriers to screening were found in the dimensions of approachability and ability to perceive and appropriateness and ability to engage. Overarching barriers were language barriers and lack of proactively offered screening opportunities.

Discussion

Facilitating interpreter access for GPs and pre-arranging consultations for screening may increase screening opportunities and uptake. Financial compensation for GPs may provide incentive to offer screening. The migrant care unit implemented in the canton of Vaud warrants further evaluation and extension to other cantons. More research into implementation of and barriers to screening in Switzerland is needed.

Key words: 'Asylum seeker', 'refugee', 'infectious diseases screening', 'access barriers', 'Switzerland'

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Abbreviations

CH	Confoederatio Helvetica/ Switzerland
CMR	Central Mediterranean route
ECDC	European Centre for Disease Prevention and Control
EEA	European Economic Area
EFTA	European Free Trade Association
EMR	Eastern Mediterranean route
EpidA	Epidemic Act
EU	European Union
FDHA	Federal Department of Home Affairs (Switzerland)
FDJP	Federal Department of Justice and Police (Switzerland)
FOPH	Federal Office for Public Health (Switzerland)
GP	General Practitioner
HBV	Hepatitis B Virus
HCV	Hepatitis C Virus
HIV	Human Immunodeficiency Virus
HMO	Health Maintenance Organization
LTBI	Latent Tuberculosis Infection
MEC	Medical entry consultation
MEI	Medical entry information
SEM	State Secretariat for Migration (Switzerland)
TB	Tuberculosis
WAAR	Western African Atlantic route
WHO	World Health Organization
WMR	Western Mediterranean route

Glossary of Terms

Asylum seeker

“A general term for any person who is seeking international protection. In some countries, it is used as a legal term referring to a person who has applied for refugee status or a complementary international protection status and has not yet received a final decision on their claim. It can also refer to a person who has not yet submitted an application but may intend to do so or may be in need of international protection. Not every asylum-seeker will ultimately be recognized as a refugee, but every refugee is initially an asylum seeker. However, an asylum-seeker may not be sent back to their country of origin until their asylum claim has been examined in a fair procedure, and is entitled to certain minimum standards of treatment pending determination of their status.” (1)

Dublin III Regulation

An Agreement between the Dublin Association Member states, which comprise the EU and EFTA states to determine which state is responsible to process an asylum application in order to avoid multiple asylum procedures. The asylum procedure itself is carried out according to each member states regulations. The Duplin Regulation only applies for persons who are not nationals of the member states. Upon first application for asylum in a member state a person’s fingerprints are entered into the eurodac database to determine if they have applied in any other member state. (2)

Eurodac

Central European Union fingerprint database for asylum matters. (3)

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.” (4)

Permit S (People in need of protection)

This is a certain kind of permit issued in Switzerland for predefined people in need of protection. It allows for an accelerated asylum procedure and was created to minimize overload of the asylum process. Persons who are granted the Permit S have the right to stay in Switzerland, access social care and can seek employment (needs to be authorized by Swiss authorities) in Switzerland. Permit S has been issued for the first time for people fleeing from Ukraine. (5)(6)

Refugee

“Persons recognized as refugees, by a State or the United Nations High Commissioner for Refugees, on the basis of objective criteria related to the circumstances in their country of origin, which justify a presumption that they meet the criteria of the applicable refugee definition.” (4)

Introduction

I have a background in internal medicine and started my studies at KIT in March 2018 with the NTC. Since then, I have worked in various settings from hospital to health department to general practice and a few others strewn in for pleasure and experience. Most memorable for me was my half year spent working in the NHS, the English health service, and my eight weeks in the Philippines with a traveling medical unit for German doctors.

Though, what gave rise to the idea for this master thesis was my year spent working for the health department of Basel-Stadt from February 2022 to March 2023. Originally hired for the Covid 19 unit at the health department, I was assigned different tasks as the Covid 19 situation increasingly relaxed. One of my unit's new responsibilities was communicating with the federal reception center at Basel-Stadt and providing advice in outbreak situations. Not having worked in a migration setting before, the setting and the processes of the asylum system were new and not transparent to me. I got increasingly curious and wanted to know how the processes for health care for asylum seekers and refugees worked, especially if and how infectious diseases screenings were conducted in this setting. Recognizing often chronic infectious diseases such as TB, LTBI, HIV, HBV, HCV, Schistosomiasis and Strongyloidiasis early benefits not only the individual but is in line with WHO public health goals in reducing incidence and prevalence of those diseases.

The thesis helped me to clarify Swiss policy for infectious diseases screening in asylum seekers and refugees and provide insights into actual practice and access barriers. I hope my findings will help other public health officials and health care staff to a better understanding of the system in place, be informative and will provide incentive for further research in this area.

Background

The number of migrants arriving in Switzerland and other European countries has increased in recent years. (7) Certain subgroups of these migrant populations such as asylum seekers and refugees have an increased risk of infectious diseases due to higher prevalence of certain diseases in origin countries, unsafe travel routes and health system inadequacies in origin countries. (8) European Union (EU)/European Free Trade Association (EFTA) member states have different policies and approaches to infectious diseases management in this migrant subgroup. (9)

In 2018 the European center for disease prevention and control (ECDC) provided a public health guideline on infectious disease screening and vaccination for newly arrived migrants in the EU/European Economic Area (EEA). This guideline states that screening for tuberculosis (TB), latent tuberculosis infection (LTBI), human immunodeficiency virus (HIV), hepatitis B virus (HBV) and hepatitis C virus (HCV), Schistosomiasis and Strongyloidiasis is most likely effective and cost-effective depending on disease burden in the country of origin. At the same time the ECDC underlines the need for further research into delivery, acceptability, effectiveness and cost-effectiveness of migrant screening and vaccination practices as there is a general lack of strong data. (10) This thesis addresses this need by focusing on screening policy and practices in Switzerland.

Background information on Switzerland and the Swiss migration system

Switzerland – Governance structure

This paragraph provides a short overview of Switzerland and its political system.

Switzerland or the Swiss Confederation (Confoederatio Helvetica, 'CH') belongs to the World Health Organization (WHO) European Region and is part of the EFTA. However, Switzerland is not part of the EU, but has many bilateral agreements with the EU and thereby is part of the European single market and belongs to the Schengen Area. Switzerland is a federal republic with three levels of governance:

- the confederation,
- the cantons and
- the communes.

Switzerland is a direct democracy, comprised of 26 cantons and 2172 communes. The federal government is made up of seven federal council members. The council members are elected by the federal assembly (parliament) and decide together on the political course. Autonomy is a guiding principle of the Swiss system. The communes, the smallest of the three political levels, have as much autonomy as possible. For example, communes maintain their own infrastructure such as roads and official buildings but are also responsible for health care provision and prevention. Cantons, the next level up, have duties such as policing, the school system, providing cantonal health

programs and supporting the communes and coordinating care if necessary. The confederation, as the highest level is responsible for national security and foreign affairs. (11)

This autonomy also has major effects on how the health sector is organized. The federal office of public health (FOPH) is responsible for national health and providing a guiding structure, while the cantons and communes are responsible for providing health care. (12)

From a political point of view the federal departments involved in health and migration policy are the federal department of justice and police (FDJP) of which the state secretary for migration (SEM) is a part and the federal department of home affairs (FDHA) to which the FOPH is allocated. (13)

Providing health care for asylum seekers and refugees is therefore part of two different federal departments on the national level. Further heterogeneity results through the allocation of asylum seekers and refugees to cantonal reception centers, where the respective canton is responsible for providing health care. (14)

Depending on the canton there might also be two different departments responsible in the context of health care for asylum seekers and refugees. Often the health department of a canton is responsible for providing health care, while the social services department is responsible for organizing health insurance for asylum seekers and refugees and refunding/paying out of pocket payments. (15)(16)

The Swiss Migration System

This paragraph provides an overview of the Swiss migration system and details the steps of the asylum process.

Switzerland is divided into six asylum regions, each with a federal reception center with processing facilities. An asylum seeker will be allocated to a federal reception center to stay during the asylum application procedure. If asylum is granted the asylum seeker will be allocated to one of the 26 Swiss cantons depending on a distribution key. With the revision of the 1998 Asylum Act the Swiss Asylum System was restructured in 2019 with the aim to speed up the application process to last between eight days and a maximum stay at a federal reception center of 140 days. If the process takes longer the asylum seekers are usually relocated to cantonal facilities to await the asylum decision. (17)

Current federal asylum centres in the six regions

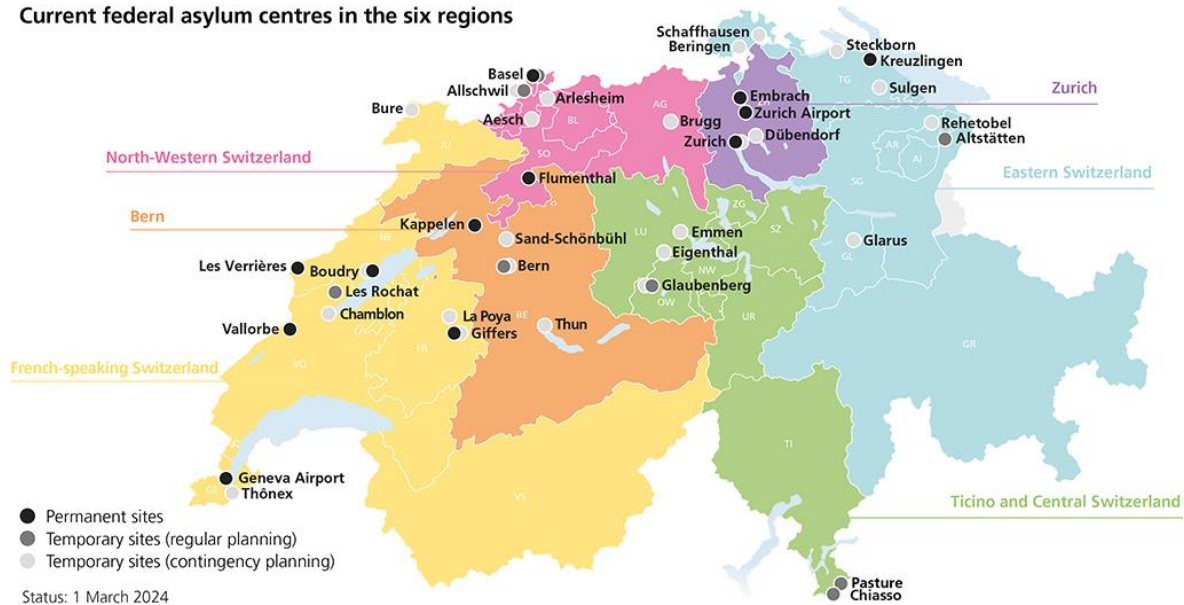


Figure 1 Asylum regions and current federal reception centres (18)

A person seeking asylum in Switzerland has three ‘points of entry’ to make their application. They can ask for asylum at border control at an international airport, at the border or at a federal reception center with processing facilities in the country. If not directly applying at a federal reception center with processing facilities, they are directed to such a reception center within 72 hours of filing an asylum application. A preliminary interview will be executed, mainly to determine if Switzerland is responsible for processing the asylum application or if another state is responsible according to the Dublin III Regulation¹. Furthermore, an age assessment may be conducted to determine if the applicant is a minor or not and personal and medical data (not further specified) including information about the transit route taken is collected. (19)

There are three types of asylum procedures: extended, Dublin and accelerated. The relevant procedure in each case is determined with the Dublin Interview. An asylum seeker will undergo either one of the following three asylum procedures:

- Extended, if Switzerland is responsible for handling the asylum application
- Dublin, if another Dublin III Regulation member state is responsible
- Accelerated, if the person is a resident of a safe third country

The preparatory phase starts directly after an asylum application has been made and includes the preliminary interview described above. The phase concludes with the determination of the type of asylum procedure that is deemed relevant in the respective case. (20) The preparatory phase lasts a maximum of 10 days in case of the Dublin procedure and a maximum of 21 days in case of the accelerated and extended procedure. (21) Figure 2 shows the preparatory phase and the following procedures.

¹ An Agreement between the Dublin Association Member states, which comprise the EU and EFTA states to determine which state is responsible to process an asylum application in order to avoid multiple asylum procedures. The asylum procedure itself is carried out according to each member states regulations. The Duplin Regulation only applies for persons who are not nationals of the member states. Upon first application for asylum in a member state a persons fingerprints are entered into the eurodac database to determine if they have applied in any other member state. (2)

Asylum Procedure starting in 2019

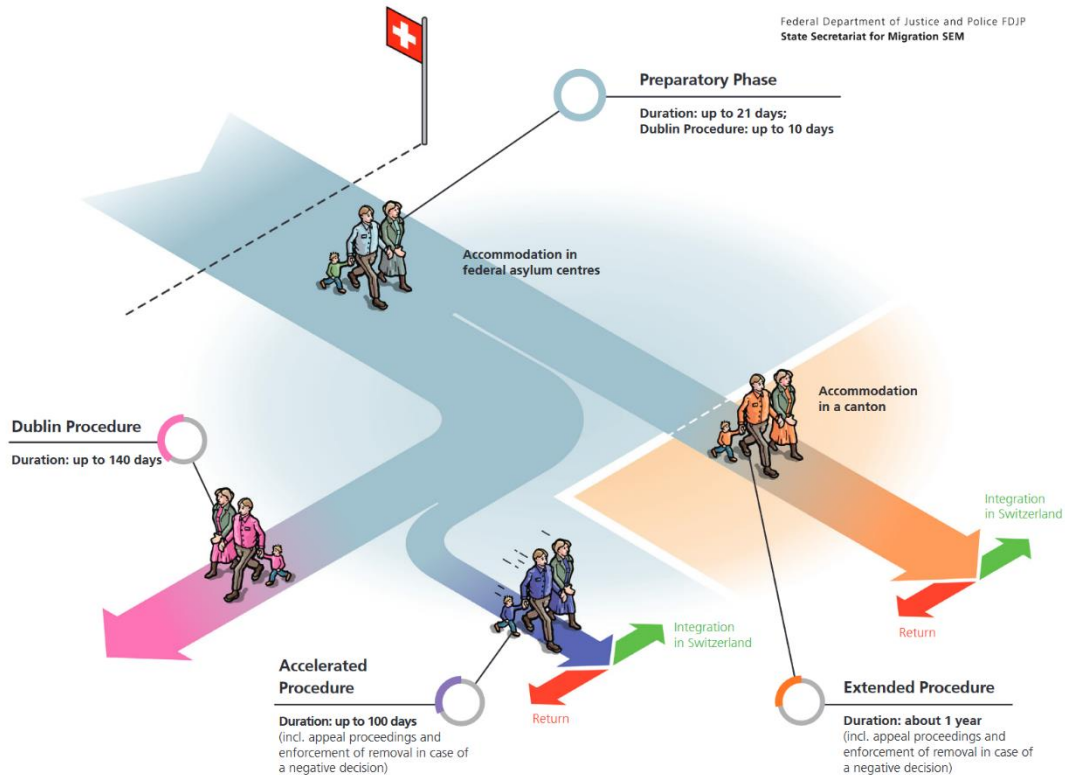


Figure 2 Asylum Procedure (22)

All asylum seekers receive free legal advice and have access to free lawyer services during the asylum procedure. (19)

Current asylum seeker and refugee population in Switzerland

This paragraph provides an overview of the current Swiss asylum seeker and refugee population and transit routes.

Switzerland is a small country with a population of approximately 8.8 million people. (23) In 2023 30 223 asylum applications were submitted, this is a 23.3% rise in comparison to 2022. Additionally, approximately 75 000 Ukrainian people received the so-called Permit S². The total number of asylum seekers in Switzerland at the end of 2022 was 204 374 persons, these included asylum seekers, persons with a Permit S and recognized refugees as well as temporarily admitted persons and those with pending applications and special circumstances. (24)

²This is a certain kind of permit issued in Switzerland for predefined people in need of protection. It allows for an accelerated asylum procedure and was created to minimize overload of the asylum process. Persons who are granted the Permit S have the right to stay in Switzerland, access social care and can seek employment (needs to be authorized by Swiss authorities) in Switzerland. Permit S has been issued for the first time for people fleeing from Ukraine. (4)(5)

The majority of asylum applications in 2023 came from Afghanistan, Turkey, Eritrea, Algeria, Marocco, Syria and Somalia. The number of asylum applications from all these countries has risen in comparison with numbers from 2022. (25) The number of granted asylum per origin country are shown in figure 3.

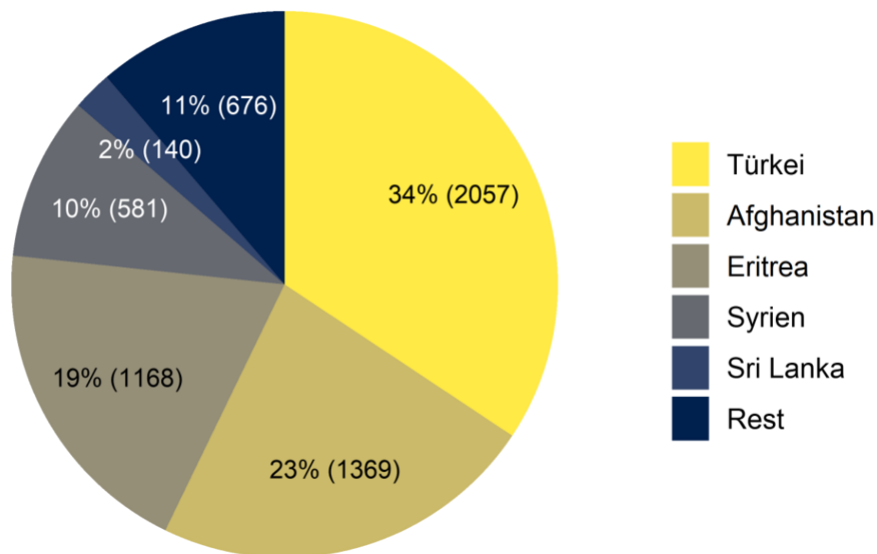


Figure 3 Granted asylum requests 2023 (26)

According to the SEM, higher costs in origin countries due to pandemic weakening of the economy and repercussions from the Ukraine crisis, have increased migration. Furthermore, increasing pressure on persons from Syria and Afghanistan living in Turkey to return to their countries of origin, results in increased migration to European countries. (25) (24)

The majority of granted asylum applications in Switzerland in February 2024 were for persons from Afghanistan, Turkey, Eritrea, Syria and Somalia. (27)

Transit routes

Asylum seekers and refugees are at an increased risk of infectious disease at different stages of the migratory process. Depending on adequacy of the health care system of their origin country, pre-travel advice and vaccination may not have happened. Precarious transit routes are often taken by asylum seekers and refugees trying to reach Europe and these routes are associated with an increased risk of infectious diseases. Longer travel time, unsafe transit countries, unsafe living conditions and increased risk of violence and trafficking all contribute to the risk of contracting infectious diseases. (28)

There are four main transit routes taken by asylum seekers and refugees aiming for Europe. The travel routes taken as shown in Figure 4 illustrate the length of journey:

- The western Mediterranean route (WMR) is taken by asylum seekers reaching the EU through Spain, either via the Mediterranean Sea or via the Spanish enclaves Ceuta and Melilla in Northern Africa.
- The central Mediterranean route (CMR) arrives in Italy and Malta

- The eastern Mediterranean route (EMR) refers to the route through which asylum seekers reach Cyprus, Greece and Bulgaria.
- The western African Atlantic route (WAAR) is taken by asylum seekers arriving in the Canary Islands. (29)

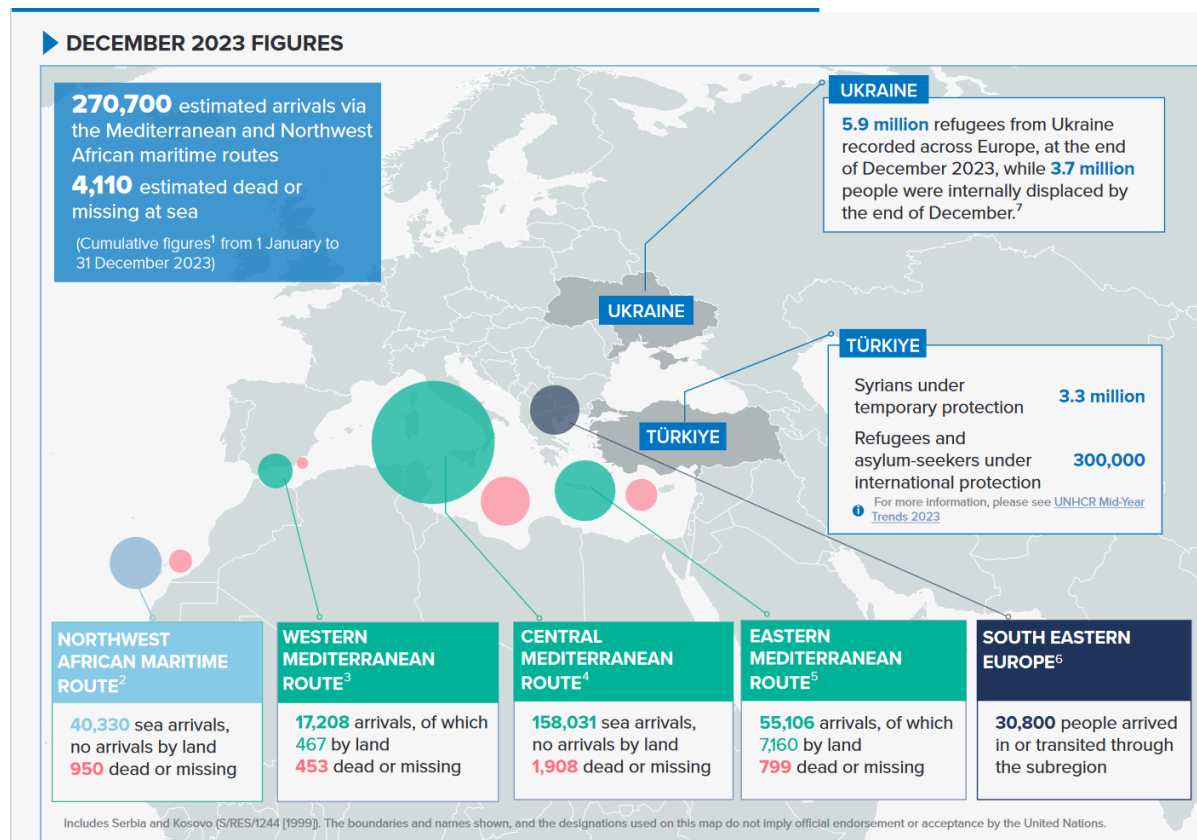


Figure 4 Transit routes December 2023 (30)

Health insurance

All asylum seekers and refugees are required to have basic health insurance, similar as the general population of Switzerland. The basic health insurance covers illnesses, accidents and maternity, the same range of service is offered to every insured person. The state and the cantons have the right to choose a health insurance for asylum seekers and refugees. Health insurance in Switzerland consists of regular monthly payments (premiums) plus out of pocket payments up to a certain amount, depending on the insurance model chosen. (31) Asylum seekers and refugees are usually provided with a so-called HMO (Health Maintenance Organization) model, this is one of the cheapest options that insurers offer. Being insured through the HMO model means that the insured person first must see a general practitioner (GP), who then may refer them to specialist services if needed. Furthermore, out-of-pocket payments up to a certain amount are often required. These are usually covered through social services in case of asylum seekers and refugees. Initially health insurance and out of pocket payments are covered through the SEM. After relocation to a canton, the receptive canton is responsible for providing health insurance, often with a different insurance provider than during the stay at a federal facility. Same as in the federal system, the cantonal social services cover out of pocket payments. (32,33) (15)

Problem statement and justification

In Switzerland as in other EU/EFTA states increasing numbers of asylum seekers and refugees constrain infectious disease management and the health system which restricts resources needed for the implementation of evidence-based approaches. In 2018 the ECDC published a guideline on screening and vaccination of newly arrived migrants. This guideline was created in response to a general request for an evidence-based guideline for the European region as the EU countries have differing approaches to screening and vaccination in this population. Evidence for screening is heterogenous and not always strong. Based on the strength of the existing evidence the ECDC concluded that screening for certain diseases depending on prevalence in the origin countries is most likely effective and also cost-effective. The ECDC recommendations are based on this assessment. (10)

Table 1 summarizes the evidence-based statements for infectious diseases screening in newly arrived migrants as postulated by the ECDC guideline:

Table 1 ECDC summary of evidence-based statements of infectious diseases screening for newly arrived migrants (10)

Active TB	Offer active TB screening using chest X-ray (CXR) soon after arrival for migrant populations from high-TB incidence countries. Those with an abnormal CXR should be referred for assessment of active TB and have a sputum culture for <i>Mycobacterium tuberculosis</i> .
LTBI	Offer LTBI screening using a tuberculin skin test (TST) or an interferon-gamma release assay (IGRA) soon after arrival for all migrant populations from high-TB-incidence countries and link to care and treatment where indicated.
HIV	Offer HIV screening to migrants who have lived in communities with high HIV prevalence ($\geq 1\%$). If HIV positive, link to care and treatment as per clinical guidelines. Offer testing for HIV to all adolescents and adult migrants at high risk for exposure to HIV. If HIV positive, link to care and treatment as per clinical guidelines.
Hepatitis B	Offer screening and treatment for hepatitis B (HBsAg and anti-HBc, anti-HBs) to migrants from intermediate/high prevalence countries ($\geq 2\%$ to $\geq 5\%$ HBsAg.) Offer hepatitis B vaccination series to all migrant children and adolescents from intermediate/high prevalence countries ($\geq 2\%$ to $\geq 5\%$ HBsAg) who do not have evidence of vaccination or immunity.
Hepatitis C	Offer hepatitis C screening to detect HCV antibodies to migrant populations from HCV-endemic countries ($\geq 2\%$) and subsequent RNA testing to those found to have antibodies. Those found to be HCV RNA positive should be linked to care and treatment.
Schistosomiasis	Offer serological screening and treatment (for those found to be positive) to all migrants from countries of high endemicity in sub-Saharan Africa, and focal areas of transmission in Asia, South America and North Africa

Strongyloidiasis	Offer serological screening and treatment (for those found to be positive) for strongyloidiasis to all migrants from countries of high endemicity in Asia, Africa, the Middle East, Oceania and Latin America.
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Asylum seekers and refugees are a heterogeneous group with a different risk profile than the general population of the destination country. Conditions in countries of origin, during transit and in reception centers may increase their risk for certain infections. A timely detection of such conditions is relevant for individual health outcomes as well as for public health considerations, for example: preventing spread of TB. (34) Therefore, providing and ensuring access to infectious diseases screening for different groups of asylum seekers is key in reducing the burden of disease. (10)

In Switzerland the existing Epidemics Act (EpidA) was revised in January 2016. The revision aimed to improve the protection from infectious diseases for asylum seekers and the general population. An analysis from 2017 for the Federal Office of Public Health (FOPH) showed that the health screening process focused mainly on screening for TB and information on HIV status. No systematic screening process existed and practices between the different cantons were variable. (35) In the context of the revision of the EpidA the FOPH and the SEM were instructed to generate an approach to secure protection from infectious diseases for the general population and asylum seekers. The implementation introduced changes, such as the introduction of the compulsory medical entry information (MEI) and the voluntary medical entry consultation (MEC), the official guideline on vaccination and prevention of infectious diseases and management of outbreaks in federal and cantonal asylum seeker facilities, issued by the FOPH and SEM. (36)(15)

Information and literature on the actual implementation of asylum seeker and refugee infectious diseases screening in Switzerland is scarce and has not yet been analyzed in full. Furthermore, the existing literature on the process in Switzerland seems to focus heavily on the supply side (provider side) of the screening process (e.g. the June 2023 official evaluation of the implementation of the new health approach). (9)(37) Neglecting the demand side bears the danger of overlooking key areas for improving provision and uptake of infectious diseases services for asylum seekers and refugees.

This study aims to address the scarcity of knowledge by analyzing experiences with infectious diseases screening for asylum seekers and refugees in Switzerland. The goal is to provide policy makers, health care workers (particularly nurses at reception centers and general practitioners who care for asylum seekers and refugees) and staff at federal and cantonal reception centers with an overview of current policies and bottlenecks in practice to enhance their understanding of the system in place.

Furthermore, the study aims for an analysis of the existing literature on infectious diseases screening in Switzerland in order to better understand the current infectious diseases screening provision and uptake in Switzerland, identify barriers to access of infectious diseases screening and inform policy makers on areas to focus on to improve provision and uptake of screening. Furthermore, identifying gaps in the existing literature will inform on which areas to focus further research on.

Main Research Question and Objectives

With this master thesis the author aims to answer the following main question:

What is the policy for and practice of asylum seeker and refugee infectious diseases screening in Switzerland and what are the main barriers to access?

Main objective:

Review the existing body of scientific and grey literature on policy and practice of infectious diseases screening in Switzerland and analyze barriers to access.

Specific objectives:

1. Describe the current policy and process for asylum seeker and refugee infectious diseases screening in Switzerland and assess its alignment with ECDC guidelines.
2. Review the existing literature on actual practice of asylum seeker and refugee infectious diseases screening in Switzerland.
3. Analyze barriers to infectious diseases screening in Switzerland using an access perspective as per the adapted Levesque framework.
4. Identify areas for further research and areas for improvement for more provision and uptake of screening using the results.

Methods and analytical framework

Methods

Type of study

The main objective of this thesis was to review the existing body of scientific and grey literature on policy and practice of infectious diseases screening in Switzerland and analyze barriers to access.

To reach the objective a literature review was the method of choice, as the primary aim was to give an overview of current policy and practice in use and existing scientific literature on current practice and barriers to access screening services. This approach was chosen over a qualitative approach with interviews for example as it allows for a more comprehensive review, identification of research gaps and recommendations for further research. (38)

Data collection and analysis

The study consists of three specific objectives that are addressed by reviewing the literature, the fourth is addressed through interpretation of the results. These are listed in table 2.

Table 2 Objectives and Search methods

Objective	Data search	Extraction and analysis
1. Describe the current policy and process for asylum seeker and refugee infectious diseases screening in Switzerland and assess its alignment with ECDC guidelines.	-Official country website -Websites of relevant other bodies like ECDC, AIDA, ECRE, IOM	Information and summarizing: -Official procedure of infectious diseases screening
2. Review the existing literature on actual practice of asylum seeker and refugee infectious diseases screening in Switzerland	- Academic papers published in the last 10 years focusing on Switzerland or including Switzerland among studies in EU/EFTA countries -PubMed -Snowballing	Summarize what is known about: -Implementation of screening process -involved stakeholders
3. Analyze barriers to infectious diseases screening in Switzerland using an access perspective as per the adapted Levesque framework.	- Academic papers published in the last 10 years focusing on Switzerland or including Switzerland among studies in EU/EFTA countries or EU systematic reviews -PubMed -Snowballing	Analyze -Barriers to access screening services using the 5 A's of supply and demand side of the adapted Levesque framework

4. Identify areas for further research and areas for improvement for more provision and uptake of screening using the results	Results from objective 1 through 3	Analysis of results

Search strategy

To reach the objectives relevant official websites, documents and guidelines were screened and a literature review of published studies on practice of and access to infectious diseases screening in asylum seekers and refugees in Switzerland was conducted.

For objective 1 general information and grey literature such as international and national guidelines were reviewed using google search and country specific or institution specific websites, for example official government websites or the ECDC website.

For objective 2 and 3 PubMed was searched using the keywords and combinations of keywords described in Annex 1. Multiple PubMed searches were conducted between November 2023 and June 2024. The timeframe was 10 years, from January 2014 until June 2024.

Snowball retrieval using the reference lists of relevant papers was used to complement the search results.

Inclusion and exclusion criteria for objective 2 and 3

Inclusion criteria:

- Studies from Switzerland and/or EU that study multiple countries, including Switzerland
- Studies which include asylum seekers and refugees
- Studies describing/analyzing infectious diseases screening practices
- Studies investigating access or barriers to access to infectious diseases screening in Switzerland and/or multiple country EU studies
- Studies investigating access or barriers to access to health care in Switzerland
- Studies published in the last 10 years, from 2014 to 2024
- Studies in English and German.

Exclusion criteria:

- Studies published before 2014
- Studies only available in languages other than English or German
- Studies that did not at least include asylum seekers and/or refugees

Literature on access barriers to infectious diseases screening in Switzerland was scarce. Because of the limited data available, the scope of the search was gradually expanded to include systematic reviews including EU/EFTA countries to enhance the information found. Studies on Switzerland were included in these systematic reviews. However, data was often aggregated for multiple countries. Furthermore, the author included studies on access barriers to health care in Switzerland to supplement the

information found for access barriers to screening services and to heighten the relevance of the study for Switzerland and the Swiss context.

Furthermore, it was debated to include only studies with screening of one disease instead of more than one. The author decided to include all the diseases the ECDC recommended to screen for in order to enhance the information found and provide a more complete picture and understanding of infectious diseases screening in Switzerland.

In a final step the results found for objectives 1-3 were used to identify areas for further research and areas for improvement for more provision and uptake of screening in Switzerland (objective 4). This information and a list of recommendations is presented in the conclusion chapter.

Limitations

Main limitations of this type of study type were the range and quality of existing studies on the theme and the defined time frame of ten years.

Analytical Framework

The Levesque conceptual framework of access to health care was used to analyze the relevant data and assess access to infectious diseases screening as described in objective 3.

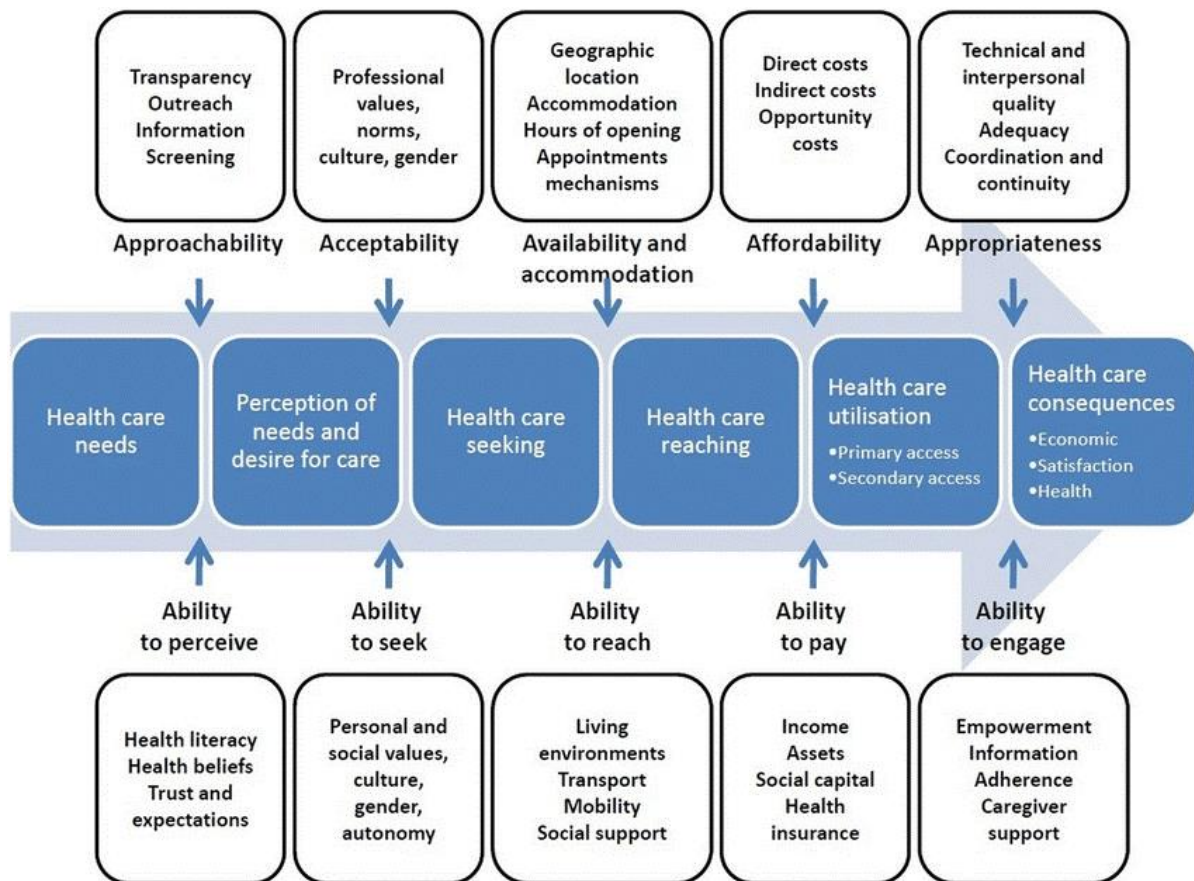


Figure 5 Levesque Framework (24)

Levesque et al. define access as opportunity, which encompasses a broad view of access. They describe a pathway of utilization, which ranges from perception of need to benefitting from care, thus incorporating determinants on the supply side and on the demand side that influence access to a health service. Five dimensions of accessibility and five corresponding abilities of persons to access a health service are described to achieve realized access. (39)

The upper part of the framework describes the five A's, the five dimensions of accessibility. These describe the supply side (or provider side) of a health service and the determinants that influence accessibility on the supply side. These five A's can be influenced by the provider. The lower five A's – the abilities of persons – describe the demand side (or user side) and the determinants that influence them. The effectiveness of a health service is not only influenced by supply side factors but also by demand side factors. Both sides and all the dimensions interlink and influence each other and define overall success of a health service. (39)

This framework was chosen as it represents a broad view of access, it enables a user to analyze access from different viewpoints and enables detection of barriers to access in different areas in the process

of accessing a health service. Furthermore, the Levesque Framework has been used successfully to analyze health care access in multiple settings, including analyzing access to infectious diseases services and analyzing access to health care for asylum seekers and refugees. (40) (41)

The 2008 conceptual framework on access to health care services in lower- and middle-income countries by Peters et al. (42) is similar, offering a relatively comprehensive analysis of demand and supply side factors influencing access. In comparison to Levesques framework the dimensions are not as clearly defined and do not demonstrate the process to realized access and where the process is influenced by demand and supply side factors. For example, the Levesque dimension of approachability and ability to engage is not directly assessed. However, the inclusion of policy and macro-environment as a determinant of the supply and demand side factors in Peters' framework nicely demonstrates the relevance of policy to health care access and should also be thought of as existing around and influencing all the Levesque dimensions of access. (39)(42)

Results

A total of 315 studies were initially found through PubMed search and a further three studies through official Swiss federal websites. 73 studies from PubMed were assessed for inclusion using title and abstract. Of those 27 full text articles from PubMed were analyzed as well as all three from official websites. Ultimately 10 studies from the PubMed search and one study from the official websites were retained. Four more studies were identified through the reference lists. The information is visualized in a results tree in Annex 2.

The studies were used to answer all three objectives. The tables in Annex 4 and 5 provide an overview of the studies relevant to objective 2 (Annex 4) and objective 3 (Annex 5).

Current policy and process for asylum seeker and refugee infectious diseases screening in Switzerland and its alignment with ECDC guidelines (Objective 1)

This paragraph informs the reader on the current prescribed policy of infectious diseases screening for asylum seekers and refugees in federal and cantonal reception centers in Switzerland. It also provides an overview of the relevant openly accessible guidelines and information tools.

In Switzerland a new process and policy for screening has been implemented since 2018. (15) This included the creation of a guideline for infectious diseases management in federal and cantonal reception centres by the FOPH/SEM. (36) Figure 6 gives a short overview of the process at the federal and cantonal reception centre. The guidelines and tools available at each level are listed in table 3. The process and available guidelines and tools are explained in the following chapters.

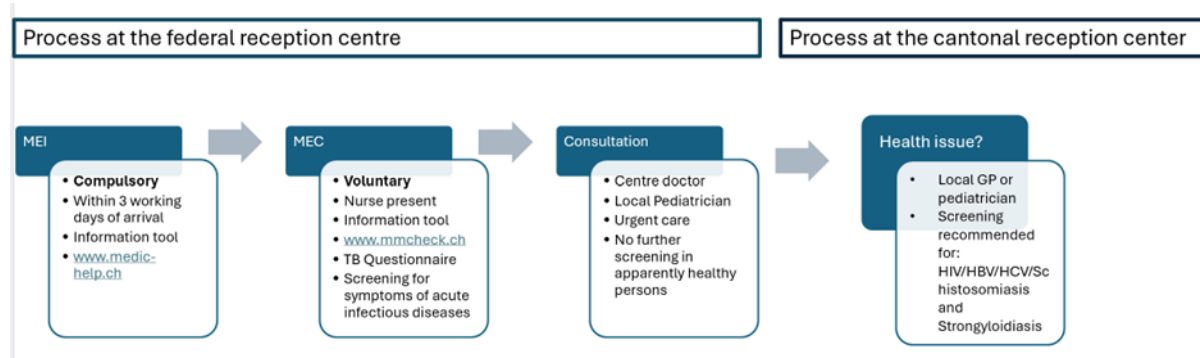


Figure 6 Process at federal and cantonal reception centres (created by the author)

Table 3 Summary of Guidelines and tools available to reception center staff and GPs/Pediatricians

Guidelines and tools	Intended for use by
FOPH/SEM guideline: Recommendations for vaccinations and for the prevention and outbreak management of infectious diseases in federal reception centers and cantonal collective accommodation facilities - Handbook for health personnel (36)	Reception centre nurses and staff Centre doctor
Information tool: https://www.medic-help.ch/de/go/erstkonsultation/	
Information tool: https://www.mm-check.ch/	
Notter et al. Recommendations for everyday clinical practice Infections in adult refugees	Local GPs Pediatricians
Ehrenzeller et al. Infectious diseases and vaccinations for asylum seekers (43)	
Guidance for testing and preventing infections and updating immunizations in asymptomatic refugee children and adolescents in Switzerland was written by the Pediatric Infectious Disease Group of Switzerland (44)	

The process at federal level and the available guidelines and tools

At the federal level, the state is responsible for health care provision and social services. Federal reception centers have trained nurses on staff as well as a centre doctor available for medical consultations on certain days.

Under the new policy newly arrived asylum seekers have a compulsory medical entry information (MEI) within three working days of registration as a first step. This consists of an app-based information tool which is available in the relevant languages (www.medic-help.ch). The tool informs about key concepts of the Swiss health care system, health insurance and relevant contact points in case a medical issue arises. The information tool further inquires about current medical concerns and medications. Ideally, the information tool is used in the presence of a nurse from the federal reception centre to help with any health issues or questions. (15)

The second step is a voluntary medical entry consultation (MEC) which is also based on a digital tool (www.mmcheck.ch). This too is ideally used in the presence of a nurse practitioner. It consists of a medical questionnaire including a special TB screening questionnaire. There, current symptoms and medications are recorded and vaccinations offered. The nurse does the first triage and decides if a patient needs to be seen by the centre doctor, by a pediatrician in the case of children, or needs urgent medical care at a hospital. (15)

The officially available guidance for federal and cantonal reception centres is summarized in table 3. The app-based information tools explain possible symptoms of TB and provide information about HIV

as well as information on symptoms and risks of other sexually transmitted diseases. These tools are used during the MEI and MEC. However, LTBI, HBV, HCV, Schistosomiasis and Strongyloidiasis are not specifically addressed. (15)

The FOPH/SEM guideline is primarily meant for reception centre staff, i.e. the nurses, the centre doctor and other reception centre staff. The guideline was created in 2018 and is irregularly updated as needed (last in January 2023). It advises on common and relevant infectious diseases and their management in the setting of a reception centre. It is also freely accessible for the public on the website of the FOPH. According to this guideline no further screening for LTBI, HIV, HBV, HCV, Schistosomiasis or Strongyloidiasis is advised in apparently healthy individuals at the federal level. (36)

The process at cantonal level and the available guidelines and tools

At the cantonal level the situation is much more heterogenous as each canton is responsible for the organization of their asylum system and the provision of health care and social services. Formally, the new health approach with MEI and MEC as well as the FOPH/SEM guideline are also applicable at this level. Especially if asylum seekers and refugees have not received a MEI and MEC before reaching the cantonal level. Though at this level nurses are not necessarily available at the centre and there are no centre doctors. Healthcare provision at this stage is the same as for the regular population. If needed, asylum seekers and refugees may make an appointment at the local GP or pediatricians practice. (15)

Two publications in the last ten years in the Swiss Medical Forum by Notter et al. and Ehrenzeller et al. have communicated the change in health care policy for asylum seekers and refugees and have advised on infectious diseases screening in this population. These are intended as information and for use by GPs. The available documents are listed in table 3. Regarding screening, these publications contain primarily the same information as the FOPH/SEM guideline – advising for TB, HBV, HCV, Schistosomiasis and Strongyloidiasis screening depending on origin country and symptoms of the asylum seeker or refugee and advising against LTBI screening. (45)(36)(44)(43)

One further publication in *Pediatrica* by Bernhard et al. advises on screening and vaccination in asymptomatic asylum seeker and refugee children and adolescents. These recommendations differ slightly from the recommendations for adults. For apparently healthy children under five years of age regardless of origin country screening for LTBI is advised. For those five years or older TB screening is advised if the children exhibit certain symptoms. HIV and HBV screening should be offered to all children and screening for Schistosomiasis and Strongyloidiasis to those from endemic countries. (44) Annex 3 contains a list of the specific recommendations per disease.

Comparison and alignment with ECDC guidelines

The ECDC guideline recommends screening for TB, LTBI, HIV, HBV, HCV, Schistosomiasis and Strongyloidiasis depending on prevalence in the origin country. A comparison of the ECDC guideline, the FOPH/SEM guideline and the PIGS guideline for their specific recommendations for the screening of the above-mentioned diseases can be found in Annex 3. (10)

The major difference between the guidelines is the recommendation concerning LTBI screening. While the FOPH/SEM guideline does not recommend LTBI screening for apparently healthy persons without exposure, the ECDC and PIGS guidelines recommend screening in adults depending on prevalence in origin country and for all children younger than five years of age independent of TB prevalence in origin country. A possible contributing factor to the divergent recommendation on LTBI screening may be the later publication of the ECDC guideline. (36)(10)(44)

Intermediate conclusion

In this chapter, we aimed to address objective 1. In summary the priority of the current policy and process for Swiss asylum seekers and refugees lies in recognizing and managing acute infectious diseases to prevent an outbreak in reception centre settings. Asylum seekers and refugees are first stationed in a federal reception center, there nurses are on staff and a centre doctor is available at certain times. Apart from voluntary symptom assessment and assessment of a TB-Score, no active screening is recommended at this stage. Asylum seekers and refugees exhibiting certain symptoms are advised to seek medical help. Apparently healthy individuals do not receive such advice.

After transferal to a cantonal facility HIV, HBV, HCV, Strongyloidiasis and Schistosomiasis screening in high-risk groups (see Annex 3) is advised by the FOPH/SEM guideline. LTBI screening is not advised at all. At the cantonal level, medical care is usually provided by a local GP or pediatrician.

Unlike the ECDC guideline, the FOPH/SEM guideline does not recommend LTBI screening in healthy individuals without known contact. An independent guideline by the pediatric infectious diseases group in Switzerland advises LTBI screening in apparently healthy children younger than five years of age regardless of disease burden in origin country. (15)(33)(44)

Current practices of asylum seeker and refugee infectious diseases screening in Switzerland (Objective 2)

Five studies with information on implementation of infectious diseases screening in asylum seekers and refugees in Switzerland were found. Of those, one was an official evaluation of the new health approach, two describe a migrant care unit in the canton of Vaud, one describes a family consultation for resettled Syrian families in the canton of Vaud and one was a qualitative study among primary physicians in the cantons of Basel-Landschaft, Basel-Stadt and Solothurn. **Two additional studies** report on school-based TB screening of migrant children and adolescents in the cantons of Genève and Basel-Stadt.

One study was an official evaluation of the new health concept according to the revised EpidA, commissioned by the FOPH. The study reported that most nurses at the federal reception centres know about the new health concept and the accompanying FOPH/SEM guideline. The nurses also assumed that about 75% of the asylum seekers in federal reception centres claim the voluntary MEC. The report finds that a small number of the nurses in the federal and cantonal reception centres did not know of the new concept or the existing FOPH/SEM guideline. Only about 50% of the nurses in cantonal centres use the guideline in daily practice. Only 60% of cantonal reception centres provide the opportunity for a MEC and these are not always standardized. The study further reports that only one canton out of 26 regularly offers health checkups, preventive screening and recording of health data for public health measures. (37)

A qualitative study among 20 GPs treating asylum seekers and refugees in the cantons of Basel-Landschaft, Basel-Stadt and Solothurn found that the consultations were mostly complaint-oriented and that only rarely preventive consultations took place. (46)

The case of the canton of Vaud

Three studies describe specialized set ups for asylum seekers and refugees in the canton of Vaud. One study reports about a migrant care unit in the canton of Vaud which offers health care for asylum seekers and refugees after transferal to the cantonal reception centre. A nurse-led team acts as a first contact point to the health system and provides health checks, including serological screening for HIV and HBV and for children LTBI screening with a tuberculin skin test. Furthermore, preventive care and health education is addressed. So far, this migrant care is the sole reported unit that combines administrative, socioeconomic and health related data to monitor and evaluate asylum seeker health care services in Switzerland. (47)

A further study reports a similar set up for unaccompanied minor asylum seekers (UMAs). The study describes a health check within the first few days of arrival in the canton by specialized nurse practitioners of the migrant care unit. If necessary, UMAs are referred for further evaluation to the Interdisciplinary Division for Adolescent Health (DISA), an outpatient clinic of the Lausanne University hospital in the canton of Vaud. (48)

Another study describes the implementation of a family consultation for resettled Syrian refugees. In Switzerland a special resettlement program exists for Syrian families. Eligible families receive refugee status before entering Switzerland and are directly distributed among the cantons. Consequently, the Syrian refugees bypass the MEI and MEC and the above-mentioned migrant care unit in the canton of Vaud. For this reason and because resettled Syrian families often have special health needs (as this is

one of the eligibility criteria for resettlement) a family consultation was created, which offers initial health checkup, preventive care and arranges further medical care if necessary. (49)

School based TB screening

Additional two studies were found that describe school-based TB screening for migrant children from high incidence countries in the cantons of Basel-Stadt and Genève. In Basel-Stadt the study analyzed data collected from a school-based TB screening program for migrant children from certain origin countries, which was active between 2001 and 2015. The study does not specify if screening was voluntary or compulsory as well as how and if parental permission was obtained.

During that time period the so-called border sanitary measures were in place, which consisted of a mandatory health questionnaire of newly arriving asylum seekers and refugees.

These findings suggest there might be other implementation pathways for children than for the adult population. (50) (51)

Intermediate conclusion

In this chapter, we aimed to address objective 2. The available guidance and the research on implementation show that there are two stages for asylum seekers and refugees in Switzerland. The first stage is the arrival at a federal reception centre. These reception centres generally have trained nursing staff and regular visits from a centre doctor, but as per the guideline only acute infections / illnesses are treated. The next stage is the transfer to the cantonal reception centre where the basic facilities are very variable with most centres not having nurses on staff. Acute illnesses and medical complaints are treated by the local GP or pediatrician. Those consultations are mostly complaint-oriented and not preventive in nature. (15)(46)

The research suggests that only the canton of Vaud has implemented a migrant care unit for adults and UMAs as well as a family consultation service for resettled Syrian families. These services offer health checkups and preventive care including screening and health education for asylum seekers and refugees at the cantonal level. This is an interesting case and bears further investigation. The migrant care unit as described offers tailored service for the specific needs of this population, such as offering screening services and health checkups for a high-risk population. Through use of intercultural interpreters and specially trained staff this service in theory should be more acceptable to asylum seekers and refugees. The active enrollment and organization of the migrant care unit should reduce fragmentation, such as persons going through multiple diagnostics for the same issue and loss of medical information. Furthermore, public health information is collected and may be used for future adaptations to the system or monitoring of diseases. (48)(47)(49)

The situation may be different for children as they are referred to local pediatricians at both stages, federal and cantonal. If and to what extent those pediatricians offer screening services as advised by ECDC or the PIGS guideline is unclear. A further screening opportunity for children and adolescents are the school-based pediatrician assessments.

The cantons of Basel-Stadt and Genève offered a program for LTBI screening for children from high incidence countries in the past. TB screening or other infectious diseases screening does not seem to be routinely offered during school-based assessments, but further studies are needed to confirm this finding. (51)(50)

Analysis of barriers to infectious diseases screening in Switzerland using an access perspective as per the adapted Levesque framework (Objective 3)

Two studies with information on access to infectious diseases screening in the European region and Switzerland were found. **One study** assessed screening for HBV and HCV in European countries and globally. And **one study** assessed voluntary HIV screening in two Swiss cantons. **Nine studies** with information on health care access for asylum seekers and refugees in Switzerland were found. These studies were used to further assess barriers to health care access in Switzerland. The aim was to gain insights into the Swiss health care system context and to learn from and extrapolate for screening services in Switzerland. A summary of the studies and study types included can be found in Annex 5.

Using Levesques framework, multiple barriers were detected across provider and demand side and through all dimensions of access to infectious diseases screening. In the following paragraphs the main findings are summarized per dimension in a table providing information on access barriers to infectious diseases (dark orange) and access barriers to health care (light orange).

Barriers to Approachability and Ability to perceive

Demand side barrier	Levesque dimension	Provider side barrier	Levesque dimension
<ul style="list-style-type: none"> • Lack of medical knowledge • Low perception of risk • Missing tradition of preventive health care seeking behaviour • Fear of screening providers judgement • Anxiety of confidentiality breaches • Fear of disease related consequences • Language barriers 	<i>Ability to perceive</i>	<ul style="list-style-type: none"> • Restrictive immigration policies • Restrictive health policies • Complex entitlement regulations • Lack of awareness of asylum seeker and refugee entitlements on the provider side • Lack of information on and active offering of screening opportunities at GP and hospital level • Information forms instead of individualized interview with interpreter present 	<i>Approachability</i>

<ul style="list-style-type: none"> • Different health concepts • Lack of knowledge of the Swiss health care system • Unfamiliarity of the concept of preventive care 		<ul style="list-style-type: none"> • Few preventive consultations at GP practices • Language barriers • Lack of interpreter services • GP lack of knowledge of migrant medicine and relevant guidelines • Reluctance of federal reception centre officials to address health needs 	
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Approachability

Approachability of a health care service is defined by its accessibility, by its relevance to a user's health status and by user's knowledge of its existence. (39)

Baggaley et al. find that approachability to infectious diseases screening for asylum seekers and refugees is restricted through restrictive immigration and health policies. Depending on immigration laws and health policies of a country a person may or may not be able to access screening services. Complex entitlement regulations and the lack of awareness of those entitlements on the provider side further restrict access. (52) Furthermore, lack of information on and active offering of screening opportunities at GP and hospital level were identified as major barriers to access screening services. (53) (54) This is further highlighted by a Swiss study which found that after informing asylum seekers and refugees about HIV screening opportunities, most opted for screening. (55)

An assessment of voluntary HIV screening in two Swiss cantons (Vaud and Valais) found a higher uptake in asylum seekers arriving in the canton of Vaud. This disparity was attributed to the difference in approaches. While the canton of Vaud had an individualized interview in the presence of an interpreter, the canton of Valais distributed multi-lingual information forms before vaccination catch up visits (without an interpreter present). (55)

Corroborating these findings a qualitative study on health care access for asylum seekers and refugees in Switzerland found that most GP consultations by asylum seekers and refugees were complaint-oriented and only a small part was preventive. Furthermore, communication was restricted by language barriers and lack of interpreter services, although GPs found that communication was generally sufficient to address acute somatic complaints. A need for training opportunities for migrant medicine for GPs and regular updates on guidelines was also identified. (46)

Another qualitative study identified reluctance of officials at federal reception centres to address family's health needs as a barrier to health care access. (56) If a family at a federal reception centre informs officials of certain health concerns which then are not further addressed by the officials in charge, the family is actively hindered in accessing health care. It is unknown why health concerns were not addressed in this case as asylum seekers and refugees in Switzerland have mandatory health insurance and are entitled to health care access, same as the resident population. Contributing factors might be inadequate or lack of staff training, non-existent knowledge of entitlements or even language barriers. (9)(52)(53) This also highlights how the dimensions of access influence each other. As lack of staff training and knowledge or language barriers are also elements of the 'appropriateness' dimension of the Levesque framework, they will be further discussed under the section on 'Barriers to appropriateness and ability to engage'. From these findings, it can be extrapolated that screening

services for asylum seekers and refugees are not regularly offered at primary care and even if a GP wanted to offer services the communication on screening opportunities would be restricted through existing language barriers. As described in an earlier section, asylum seekers and refugees at a cantonal reception centre will be primarily treated by the local GP as the entry point to the health care system. If GPs do not inform about screening opportunities, be it because of language barriers, time constraints or limited knowledge about relevance of infectious diseases screenings for asylum seekers and refugees from certain origin countries, this represents a major barrier to the approachability of screening services.

Furthermore, if health care access is denied, screening services cannot be accessed even if they do exist.

Ability to perceive

The ability to perceive relates to the extent to which a person is aware of a health need on the demand side. This is influenced by factors such as health care beliefs, health literacy and knowledge of health and sickness. (39)

A systematic review by Seedat et al. and a review by Sasetharran et al. reported the following barriers to the ability to perceive infectious diseases screening: lack of medical knowledge, low perception of risk and a missing tradition of preventive health-seeking behaviour in the origin country.

Furthermore, fear of screening provider's judgement, anxiety about breaches in confidentiality as well as fear of disease related consequences were cited as barriers to access screening services. (9)(57)

Complimenting the findings on access to infectious diseases screening, health care access barriers to the ability to perceive were different health concepts, shaped by experience in the origin country culture, that influenced the perception of the Swiss health care system. Generally, a lack of knowledge of the Swiss health care system was reported. (58)

Furthermore, unfamiliarity with the concept of preventive care was cited as a barrier to access. (56)

This finding potentiates the effect of the provider side barrier to appropriateness: Preventive services are not routinely offered by GPs and hospitals, but they are also not asked for if asylum seekers and refugees are unfamiliar with the concept of preventive care. (46)(58)

It can be extrapolated that asylum seekers and refugees might not know of certain diseases or of the benefit in diagnosing and treating these diseases early and therefore do not ask for infectious diseases screening. This further highlights the necessity to proactively inform and offer infectious diseases screening to those populations.

From these findings, it can be extrapolated that different health concepts, lack of knowledge on the demand side and unfamiliarity with the concept of preventive care can be barriers to access screening services.

Barriers to Acceptability and Ability to seek

Demand side barrier	Levesque dimension	Provider side barrier	Levesque dimension
<ul style="list-style-type: none"> • Fear of racism • Health tourism stigma • Social rejection • Lack of community support • Lower social status • Stigma associated with diagnosis of TB, HIV, HBV, HCV infection • Religious beliefs • Social and emotional isolation 	<i>Ability to seek</i>	<ul style="list-style-type: none"> • Lack of professionalism • Discrimination • Racism • Lack of intercultural interpreters 	<i>Acceptability</i>
<ul style="list-style-type: none"> • Mismatches between asylum seekers and refugees personal, sociocultural and language background and the situation of health care in Switzerland 			

Acceptability

Acceptability of a health care service is defined as a socially and culturally adequate service to the target population. It is influenced by how proper it is for persons to seek such care in their culture. (39)

A systematic review by Seedat et al. identified a lack of professionalism, discrimination on the providers part and racism as barriers to access infectious diseases screening services. (9) Furthermore, Baggaley et al. cite a lack of intercultural interpreters as barriers on the provider side to access screening services. (52)

A study on HIV screening in Switzerland found higher uptake of screening if the information on screening was provided through a personal interview with an intercultural interpreter than through information sheets. (55) This compliments the findings of Baggaley et al. and Seedat et al.. (52)(9)

Ability to seek

The ability to seek a health care service is influenced by the “autonomy and capacity” and individual rights of a person to choose to seek help, as well as a person’s knowledge about their health care options. (39)

Cited demand side barriers to seek infectious diseases screening were fear of racism, health tourism stigma and social rejection as well as lack of community support and lower social status. Stigma associated with TB, HIV, HBV and HIV infection diagnosis was a barrier to seek screening services. (52) Furthermore, religious beliefs and social and emotional isolation contributed to not

accessing screening services. (52) (9)(57) Complementing these findings asylum seekers described mismatches between their personal, sociocultural and language background and the situation of health care to be barriers to access the health care system in Switzerland. (56)

Barriers to Availability and Accommodation and Ability to reach

Demand side barrier	Levesque dimension	Provider side barrier	Levesque dimension
<ul style="list-style-type: none"> Limited knowledge of existing screening services Knowledge about necessary social support Distance to services Limited transportation opportunities 	<i>Ability to reach</i>	<ul style="list-style-type: none"> Limited opening hours Time constraints of services Distance to services Lack of appropriate confidential space Poor management Multiple steps of screening test 	<i>Availability and accommodation</i>
<ul style="list-style-type: none"> Difficulty to organize appointments Lack of orientation and geographical knowledge Disorientation Lack of social support such as childcare 		<ul style="list-style-type: none"> Time constraints at GP level Scheduling repeat appointments Location changes of asylum seekers and refugees e.g. transferral from federal to cantonal facility 	

Availability and accommodation

Availability and accommodation of a health service is given if the location of the health service or the relevant health care worker is accessible to a person seeking care. Factors such as distribution of a health service in a country, opening hours, modes of consultation, available resources and mechanism of appointments influence the availability and accommodation of a service. (39)

Seedat et al. cited poor management of referrals, multiple steps of screening test leading to higher dropout rates and a lack of appropriate confidential space as provider side barriers to access screening services. (9) Baggaley et al. and Seedat et al. found time constraints of appointments to be a barrier. Baggaley et al. further cited limited opening hours and distance to services as barriers. (52) (9) Distance to service in principle is a demand side barrier. However, it is also heavily influenced by the provider as distribution of a service in a country directly influences the distance of a person to said service.

In Switzerland, a qualitative study by Brandenberger et al. noted difficulty to organize appointments as a barrier to health care access. (56) GPs further cited more time was needed for asylum seeker and refugee consultations due to language barriers and/or a different health background with differing disease concepts. Scheduling repeat appointments also proved difficult due to language barriers and location changes of asylum seekers and refugees (e.g. if they were transferred to a different reception centre or canton). (46)

Ability to reach

The ability to reach a health care service is influenced by the geographical location of a person, the availability of transport, flexibility of working hours and knowledge of existing health service locations. (39)

Limited knowledge about existence of relevant screening services as well as limited knowledge about necessary social support restricted the ability to reach screening services. Distance to services and limited transportation options were further demand side barriers. (52) Barriers to access health care in Switzerland were lacking orientation and geographical knowledge of the location of the hospital in relation to the reception centre, which created difficulties. E.g. it was reported that one person did not know how to get back to the reception centre after a consultation, another person from a rural area left the emergency department early as she was concerned, she would not be able to get back to the centre due to public transportation timetable. One person had recently been moved and did not recall the new address. Disorientation, especially after recent re-location were associated with increased anxiety and stress. Furthermore, lack of social support i.e. childcare for healthy siblings was a barrier to organize and reach health care appointments with sick children for caregiver mothers. (56) In Switzerland the transportation cost to and from the hospital or to and from an outpatient consultation should be covered by health care or by social services for asylum seekers and refugees. Appointments and transportation to the appointment are often organized by reception centre staff, but as these findings highlight, the transportation back to the centre is not always pre-arranged and asylum seekers and refugees may find it difficult to find their way back. (56)

From these findings on health care access, it can be extrapolated that reaching screening services may be a barrier depending on the location of the screening services, the geographical knowledge of the asylum seeker or refugee and the organization of transportation by social services.

Barriers to Affordability and Ability to pay

Demand side barrier	Levesque dimension	Provider side barrier	Levesque dimension
<ul style="list-style-type: none"> • Lack of health insurance • Finite financial resources • Social and economic insecurity form high risk living conditions • Poor working conditions 	<i>Ability to pay</i>	<ul style="list-style-type: none"> • Funding • Charging for services 	<i>Affordability</i>

<ul style="list-style-type: none"> Lack of access to cash money 		<ul style="list-style-type: none"> Health insurance card sometimes not issued 	
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Affordability

Affordability refers to the extent to which a person needs financial resources and time to access a health service. Factors such as costs of services, related expenses e.g. for transport and opportunity costs, such as loss of income during a consultation influence the affordability of a service. (39)

Cited barriers by the European systematic review by Seedat et al. were available funds and charging of a screening service. (9)

In Switzerland health care and out of pocket payments are covered by federal or cantonal services. In theory no costs should arise for the individual asylum seeker or refugee. Even though one study found that a health insurance card was sometimes not issued directly in cases with pending asylum decisions. This led to delays in treatment and additional administrative efforts. Furthermore, it led to feelings of inferiority for the asylum seeker. (56)

Ability to pay

The ability to pay refers to the extent to which a person can accumulate income of financial resources to pay for health care services without experiencing catastrophic expenditure. (39)

The review by Baggaley et al. reported a lack of health insurance, social and economic insecurity from high-risk living conditions and poor working conditions as barriers to access screening services. (52)

A Swiss study by Brandenberger et al. describes the case of caregiver mothers fasting for several days as they did not have cash money to buy their own food at the hospital where they stayed together with their sick child. (56) Not having cash money is a demand side barrier, that in Switzerland is influenced by provider side factors as cash money was not issued to the mother by social services, which in theory should have been possible under Swiss policy.

On the other hand, GPs treating asylum seekers and refugees in their consultation did not experience delays in health insurance processing and did not feel that their medical routines and approaches were affected by insurance issues. (46)

As described above, in Switzerland, each asylum seeker and refugee is covered by mandatory health insurance which is either paid for by the state or by the canton he or she is staying in. Additional costs, such as out of pocket payments are covered by social services. In so far, the ability to pay should not represent a barrier to care in Switzerland. For example: the above-mentioned caregiver mothers should have had access to cash money to buy food during their hospital stay with their sick child. This emphasises the impact that lack of knowledge about the health care system and entitlements as well language barriers have on access to care. (15)(56)

Barriers to Appropriateness and Ability to engage

Demand side barrier	Levesque dimension	Provider side barrier	Levesque dimension
<ul style="list-style-type: none"> • Difficulty with laboratory result queries • Insufficient information and communication • Limited knowledge of health care and social services • Limited knowledge of entitlements • Insecure legal status • Refusal of linkage to care 	<i>Ability to engage</i>	<ul style="list-style-type: none"> • Lack of staff training and support • Lack of knowledge • Attitudes of health professionals • Poor management • Lack of time • Lack of appropriate confidential space • Staff inefficiencies • Incoherency of screening • Multiple steps in screening test • Inconsistencies in testing, treatment and charging • Fragmentation of services • Lack of joint up care 	<i>Appropriateness</i>
<ul style="list-style-type: none"> • Language barriers • Previous poor experience with GP 		<ul style="list-style-type: none"> • Insufficient communication • Lack of communication between GPs and social workers • Intercultural differences in describing medical issues • Misunderstandings • Disrespectful treatment • Lack of interpreter services 	

Appropriateness

Appropriateness of a service is given if the service adequately addresses a persons need. Factors such as quality of staff and services provided, continuity and integration influence this dimension. (39)

Several studies found barriers to screening services in this dimension, such as lack of staff training and support as well as knowledge and attitudes of health professionals and poor management. Furthermore, staff inefficiencies, incoherency of screening and/or multiple steps for screening tests as well as inconsistencies in testing, treatment and charging across services all influence the adequacy of care. (9) (52) (57) Fragmentation of services and lack of joint up care were further reported barriers. (52)

Lack of time and lack of appropriate confidential space have already been cited under the dimension of availability and accommodation, but these also influence the appropriateness of a screening service.

Brandenberger et al. found insufficient communication between the hospital and the federal reception centre as a barrier to health care access on the provider side. (56) GPs also noted that better inclusion of tertiary health care services and more regular correspondence between GPs and social workers was needed to improve coordination of services. (46)

Intercultural differences were cited as a barrier, for example the way physicians communicated about a health problem was unfamiliar to the asylum seeker. Misunderstandings and disrespectful treatment were also reported. Lack of interpreter services further reduced quality of care in Switzerland. (56) (46)

GPs in Switzerland further stated missing opportunities to read new guidelines and for further training in migration medicine as barriers to adequate care of the asylum seeker and refugee population. (46)

A questionnaire-based study in Switzerland by Jaeger et al. found that preventive information, information about the disease or treatment option was not given due to the language barrier, according to 55.8% respective 62.3% of responding GPs and paediatricians. Two thirds of GPs and paediatricians facing language barriers never had access to interpreter services. Professional interpreter use was more often reported by paediatricians than by GPs (41.1% vs. 26.6%). About 57% of all professional interpreter services were initiated by a third party such as the asylum authorities. (59) Barriers to professional interpreter use were cited by GPs and paediatricians in Switzerland as cumbersome organization (58.7%), lack of financial coverage (53.7%) and lack of knowledge on how to arrange interpreter interventions (44%). (60)

In Switzerland professional interpreter services can either be requested by the health care provider or by asylum authorities or social services. (59) If and to what degree interpreter services are financially covered and organized depends on the canton and is very heterogenous in Switzerland. (60) Though GPs note limited and unclear financial coverage for translator services and lack of a process to bill translator service. (46)

These findings can be extrapolated to screening services as preventive information and information about the relevant diseases, screening and treatment options is key to the approachability and ability to perceive screening options as well as to provide acceptable and appropriate care. As screening for TB, LTBI, HIV, HBV, HCV, Schistosomiasis and Strongyloidiasis is most likely done at the GP level the lack of professional interpreter use at GP consultations likely represents a major barrier to access screening services in Switzerland. (60)

Ability to engage

The ability to engage refers to the extent a person is involved in decision making and choice of care. These factors are determined by a person's capacity and motivation to take part in their own health care pathway and treatment plan. (39)

Seedat et al. cite difficulty with laboratory result queries and generally insufficient information and explanation as barriers to engage with screening services. (9) Limited knowledge of health and social care services, entitlements and insecure legal status were further barriers. (52) Refusal to linkage of care or treatment was a barrier to access screening services. (57)

Language barriers also influenced health care access in Switzerland: Asylum seekers who did not speak an official Swiss language had fewer contact points with the health system in their first year, possibly reflecting language barriers and mirroring the barrier on the provider side. (47)

Furthermore, previous experience with poor interaction with a GP let asylum seekers to present directly to urgent care, foregoing GP consultation. (58) This finding was corroborated by a further study on migrant care units, which showed even though a special migrant care unit was in place, UMAs chose to forego this and present directly to urgent care. Reasons for this finding are not entirely clear but may be influenced by lack of knowledge of the Swiss health care system and language barriers. (48) This leads to fragmentation and may lead to inferior care due to loss of information and possibly multiple examinations. Furthermore, it creates additional costs. (58)

Facilitators to access screening services

Notably some studies also found facilitators to access screening services. Those were:

Well trained and dedicated staff, that was able to ensure confidentiality, communicate, was culturally sensitive and offered appropriate services, free from discrimination and offered language support. If trust and respect existed for staff's judgment, screening programmes were more likely successful. Further facilitators were migrant involvement in program delivery and migrant community ownership and collaborations. Outreach measures were also facilitators as were offering a general health check and health promotion as well as anonymous testing services. Finally good service provider management e.g. quick turnover of results, efficient referrals, high-quality support, clear algorithms for screening services, quality assurance and good coordination of services were described as facilitators. (9)(52)

Intermediate conclusion

In summary, it can be said that barriers to screening access exist at every stage of the Levesque framework. Barriers to access the Swiss health care system generally were similar to those found for screening access. Differences were mostly in the dimension of affordability and ability to pay with cited barriers to screening being funding and charging on the providers side and poor working conditions and economic insecurity on the demand side. As health care costs and out of pocket payments in Switzerland are covered by federal and cantonal services the barriers in Switzerland were in lack of knowledge on how to access financial resources or organizational issues, such as delayed issuance of an insurance card.

On the provider side, major barriers were found for the dimensions of approachability and appropriateness. Mirroring this finding the demand side barriers were mostly found for the ability to perceive and the ability to engage.

Language barriers and the absence of intercultural interpreters are factors influencing all dimensions of the Levesque framework on provider as well as on the demand side. Language barriers were

mentioned as a barrier to access screening services and health care by multiple studies and influenced all dimensions to a varying degree.

Discussion

In this section, results found for objective one and two on policy and practice and implementation of infectious diseases screening in Switzerland and results for objective three on access barriers to infectious diseases screening will be discussed in two separate paragraphs.

Policy and practice and implementation of infectious diseases screening in Switzerland

Research shows that the FOPH/SEM guideline mostly focuses on the early recognition and containment of active infectious diseases such as active TB, meningococcal diseases, measles, varicella, diphtheria and scabies. More chronic infectious diseases, like HIV, HBV and HCV or Schistosomiasis and Strongyloidiasis, which are less easily transmitted are also referred to, though diagnosis and therapy of those diseases is delegated to the cantonal setting. This is in line with the policy to only address medical conditions that need acute treatment at the federal level. All other medical issues such as screenings or checkups of stable chronic conditions are postponed to after transferal to a cantonal centre. This method is understandable as the general goal is to relocate asylum seekers to cantonal facilities within three months of their filing an asylum request. This strategy is supposed to prevent loss of medical information during transfers, reducing unnecessary diagnostics and costs. Furthermore, the provision of continuity of care once the asylum seeker or refugee has been transferred to a canton prevents loss of information through location change or change of health insurance. The aim was to provide a stable health environment in the canton the asylum seeker or refugee is settled. (36)(15)

However, these reasons do not explain, why LTBI screening in otherwise healthy asylum seekers and refugees without history of contact with an active TB case is not recommended at all in the FOPH/SEM guideline. This might be due to the 2018 ECDC guideline not yet having been published during the initial creation of the Swiss guideline for federal and cantonal reception centres or it might be due to Switzerland specific reasons, which this research did not uncover. (36)(10)

Furthermore, as described above, apart from active TB screening, all other screenings in apparently healthy asylum seekers and refugees are recommended to take place at the cantonal level. If and how screening at cantonal level is implemented is unclear. The evaluation study of the new approach suggests that only one canton out of 26 regularly offers health checkups, preventive screening and recording of health data for public health measures. This finding is supported by Oehri et al., a qualitative study among GPs in the cantons of Basel-Stadt, Basel-Landschaft and Solothurn. The GPs generally reported that only a small part of asylum seeker and refugee consultations were for preventive measures. The general lack of studies and the few existing studies on the matter suggest that active screening of apparently healthy adult asylum seekers and refugees in primary health care and at emergency department visits is rarely or never actively offered. (35)(46)

One reason for the lack of screening in primary care may be insufficient information about the new policy and lack of knowledge of migrant medicine. While information on the new policy and the screening recommendations for primary care were published in two widely read medical journals in Switzerland, the Swiss Medical Forum and *Pediatrica*, this might not have been enough to satisfactorily inform GPs and pediatricians. (45)(43)(44)

Several studies on infectious diseases screening in children and adolescents as well as the PIGS guideline suggest that there might be a difference in screening implementation for children and

adolescents. Even though the SEM/FOPH guideline does not differ from screening recommendations for apparently healthy adults and children, the pediatric guideline specifically recommends LTBI screening in all children younger than five years of age with migration background, as these have the highest risk of developing fulminant TB infection. However, it is unclear if and to what extent children and adolescents are screened for infectious diseases at routine pediatric appointments. Two studies suggest that in at least two cantons (Basel-Stadt and Genève) implementation of routine LTBI screening was either tested (Basel-Stadt) or regularly offered for immigrant children from middle to high incidence countries (Genève) in regular school-based pediatrician consultations at some point. As a cantonal responsibility, these school-based pediatrician consultations differ depending on the canton. In the canton of Basel-Stadt the assessments are voluntary, and children need the written consent of their parents before certain procedures such as vaccinations are performed. The assessments in Basel-Stadt are performed by doctors employed by the canton, but this may differ depending on the canton. (61)(44)(36)(50)(51)

The migrant care unit implemented in the canton of Vaud represents a possible implementation model for other cantons as preventive care is actively offered, interpreter services and interculturally trained staff is available reducing communication errors, coordinating services and necessary further diagnostics and/or treatment plans. Furthermore, public health data is routinely gathered, which will enable further assessment and studies of this population. This unit has more resources than the local GP practice, where time constraints, lack of interpreter services and perhaps also lack of knowledge about prevalence of certain diseases and risks in this population may reduce the likelihood of screening services being offered or diseases and risks correctly diagnosed. (47)(48)(49)

Barriers of access to infectious diseases screening

Research on access to infectious diseases screening in Switzerland was scarce, information found was supplemented by information on access barriers to health care services in Switzerland.

In Switzerland, one major structural barrier to infectious diseases screening as proposed by the ECDC is that only active TB screening is actively offered. This represents only a very small part of the ECDC advised offering of infectious diseases screening for TB, LTBI, HIV, HBV, HCV, Schistosomiasis and Strongyloidiasis. Screening for those diseases (apart from LTBI screening) is theoretically recommended at the cantonal level, where health care is usually provided by the local GP. However, studies showed that GPs did not offer preventive measures routinely, and not proactively. No tailored implementation process seems to be in place, with the exception from the canton of Vaud where the migrant care unit provides preventive care. This finding highlights that one of the major barriers to access infectious diseases screening in Switzerland lies in the provider-based dimension of approachability or even on an overarching level, for it can be argued that the Levesque model does not completely capture the structural and/or political barriers that exist in providing a health care service or that those barriers exist around the five dimensions and influence those to different degrees. (36)(46)(47)(39)

The literature further shows that Switzerland is not alone in merely offering TB screening and is even recommendable in that it has created a national guideline for asylum seekers and refugees. As Baggaley et al. show only few other European countries have national guidelines specifically for asylum seekers and refugees and most of those only apply to TB and HIV screening. If and how existing guidelines are implemented in those countries was not part of the study. (52)

Another overarching barrier is the language barrier. Language barriers influence all dimensions of the Levesque model on provider and demand side in varying extent. This finding is also evident in other European countries. Language barriers influence accessibility, acceptability, quality and adequacy of care as satisfactory communication is key to doctor-patient relationship. Insufficient use of translators can lead to negative health care outcomes such as inappropriate care, difficulty to correctly diagnose a patient due to limited patient history and in consequence the need for additional exams to determine diagnosis and/or health status. Language also influences the ability to reach and the ability to pay, as both dimensions need adequate communication and understanding of the system in place e.g. transport services, health insurance or entitlements to be used correctly. Despite these barriers, accessing interpreter services for either health care providers or asylum seekers and refugees is still associated with obstacles such as organizational and financial barriers. Further complications arise with differing processes depending on the canton. (60)(59)(46)(47)

Generally, scarce information was found for the dimensions of acceptability and ability to seek as well as affordability and ability to pay. Suggesting that either barriers in these areas are not as relevant or, more likely, that information about barriers in these areas is still limited in Switzerland.

Strength and Limitations

This is a relatively new area of study even in the European context, especially research on implementation of screening services is rare. This thesis contributes in-depth knowledge to the field. Information about TB, LTBI, HIV, HBV, HCV, Schistosomiasis and Strongyloidiasis infection in the asylum seeker and refugee community is not well researched. National and international data bases on prevalence of infections among this population group do not exist, further impeding research and adaption of existing guidelines and screening programs. One limitation was that existing studies were most often done in cantons with university hospitals, signifying that information about smaller cantons without university hospitals is even scarcer. Also, only studies in English and German were included. French, Italian and Romansh are also official Swiss languages. Relevant research only available in those language may have been overlooked.

Conclusion

From the results of the three objectives described in the preceding sections, it can be concluded that infectious diseases screening along ECDC recommendations is not routinely offered in the majority of Switzerland. Official guidelines by the FOPH/SEM recommend screening for active TB directly after arrival, HIV, HBV, HCV, Schistosomiasis and Strongyloidiasis screening is recommended after allocation to a canton. Diverging from the ECDC recommendation, LTBI screening for adults is not recommended at all. After a mandatory medical entry information any further contact with the Swiss health care system is voluntary. Preventive care, which would entail certain screenings, is not routinely or proactively offered.

These factors also contribute to structural barriers to screening in Switzerland. They particularly influence the dimensions of approachability and availability and accommodation on the provider side.

The further analysis identified barriers in the dimensions of approachability and ability to perceive as well as for the dimension of appropriateness and ability to engage.

Language barriers on both sites emerged as one overarching barrier that influences all dimensions of access.

Recommendations

The main goal of this thesis was to describe the policy for and practice of asylum seeker and refugee infectious diseases screening in Switzerland and analyze the main barriers to access. Objective four was to identify areas for further research and areas for improvement for more provision and uptake of screening using the results from objectives one through three. These will be addressed in this section.

Recommendations for policymakers and professionals to reduce access barriers to infectious diseases screening in Switzerland

These recommendations are based on the main access barriers and that were identified during this research. It emerged that under current policy mostly GPs and pediatricians are responsible for screening asylum seekers and refugees, therefore many of the listed recommendations relate to GP/pediatricians. Furthermore, aspects of particular importance emerged, these should be prioritized to enhance screening opportunities and practice. These were:

- **Interpreter services** – facilitating easily accessible and cost-efficient access to interpreters in the relevant languages is necessary to offer screening options and enable informed decision making.
- **Raising GP/pediatrician awareness to offer screening services** to asylum seekers and refugees through educational programs and/or information leaflets.
- **Education and information on migration medicine and existing guidelines** for GPs and pediatricians as well as for nurses and social workers who work with asylum seekers and refugees.

Recommendations for policy:

- Cantonal Health Departments: Exchange experiences with the canton of Vaud and evaluate the extension of their migrant care unit model to other cantons.
- FOPH/Cantonal Health Departments: Explore possibilities of cooperation and coordination between cantons with university hospitals and those without to combine resources.
- Cantonal Health Department/Federal government: Consider offering compensatory payment to GPs/pediatricians if the time needed for screening appointments cannot be covered through the regular tariff model to provide incentive to offer screening appointments.
- FOPH: Offer training in migration medicine to GPs and pediatricians to enhance knowledge about infectious disease and the heightened risk in this population.

Recommendations for improvements of practice under the current policy:

- FOPH/SEM: Create regularly updated Check List for GPs/pediatricians with TB, LTBI, HIV, HBV, HCV, Schistosomiasis and Strongyloidiasis and list of origin countries with high risk and recommendation to screening to facilitate screening process at GP/pediatrician level.
- FOPH/SEM: Create a process where an appropriate interpreter is organized by social services and send to the GP appointment together with the asylum seekers and refugees.
- GP/Pediatrician: Offer specialized appointments for health checkup and screening to every asylum seeker and refugee arriving in the cantonal centres.

Recommendations for further research

This study found gaps in research in implementation of screening practices, especially at GP level. Apart from routinely collected data in the canton of Vaud it is not known how often screenings are completed at GP visits. Furthermore, barriers to the offering of screening at GP level need to be further assessed to create tailored programs. Also, this study was a literature review that needs to be complemented by quantitative and qualitative research with migration and infectious diseases experts in Switzerland as well as asylum seekers and refugees to find answer to the following questions:

- What are the reasons for not advising LTBI screening for asylum seekers and refugees from high-risk regions in the FOPH/SEM guideline?
- Research on burden of infectious diseases in asylum seekers and refugees is needed to further inform on the utility and cost-effectiveness of screening programs in certain risk groups.
- Assessment of actual screening implementation in Switzerland – how many asylum seekers and refugees are screened at GPs' and/or pediatricians' practices?
- Further research on access barriers and facilitators to screening for asylum seekers and refugees is needed to tailor screening programs accordingly. Research on all dimensions of access is needed, though the information on the dimensions of acceptability and ability to seek as well as availability and accommodation and ability to reach is particularly scarce.

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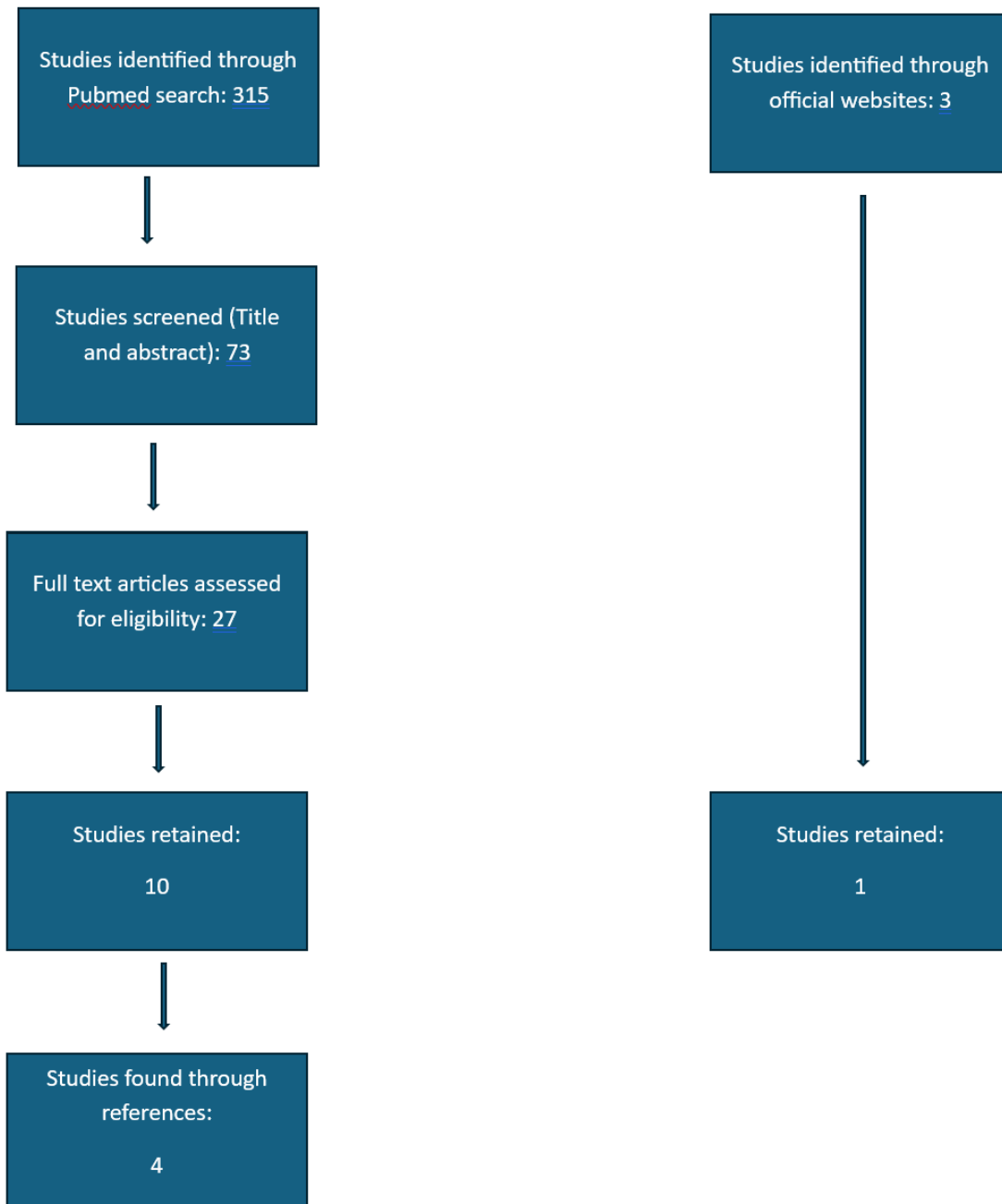
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Annex 1 Search Strategy and Search Terms

Objective	Data search	Extraction and analysis
1. Describe the current policy and process for asylum seeker and refugee infectious diseases screening in Switzerland and assess its alignment with ECDC guidelines.	<p>-Official country website such as https://www.sem.admin.ch https://www.bag.admin.ch</p> <p>-Websites of relevant other bodies like ECDC, AIDA, ECRE, IOM</p>	<p>Information and summarizing: -Official procedure of infectious diseases screening</p>
2. Review the existing literature on actual practice of asylum seeker and refugee infectious diseases screening in Switzerland	<p>- Academic papers published in the last 10 years</p> <p>-Pubmed -Snowballing</p> <p>Search terms: Switzerland AND (Asylum seeker OR refugee) AND (infectious diseases screening OR TB screening OR LTBI OR HIV OR HBV OR HCV OR Strongyloidiasis OR Schistosomiasis)</p> <p>Papers that discuss multiple countries, including Switzerland were included</p>	<p>Summarize what is known about: -Implementation of screening process -involved stakeholders</p>
3. Analyze barriers to infectious diseases screening in Switzerland using an access perspective as per the adapted Levesque framework.	<p>- Academic papers published in the last 10 years - in Switzerland and EU/EFTA countries</p> <p>-Pubmed -Snowballing</p> <p>Search terms: (Switzerland OR EU OR EFTA) AND (asylum seeker OR refugee) AND (infectious diseases screening OR TB OR LTBI OR HIV OR HBV OR HCV OR Schistosomiasis OR Strongyloidiasis) AND access</p>	<p>Analyze -Barriers to access screening services using the 5 A's of supply and demand side of the adapted Levesque framework</p>

Annex 2 Results Tree

Results Tree



Annex 3 Overview of the similarities and differences between the ECDC guideline, the FOPH/SEM guideline and the PIGS guideline

Disease/Guidelines	ECDC Guideline Recommendation 2018	Swiss Guidelines for federal and cantonal reception centers	Spalte1	Guidance for testing and preventing infections and updating immunisations in asymptomatic refugee children and adolescents in Switzerland 2016
Active TB	offer RX all migrants from high incidence countries, (>120/100 000)*	Mandatory entry information and Questionnaire Tool TB-Screening Tool (for children > 12 years of age and adults) further diagnostic with RX for persons with a score of >= 10 points children < 10 years of age testing for TB should be done if there is any of the following: persistent cough (>2 weeks), unremitting cough, weight loss/failure to thrive, persistent (>1 week) unexplained fever (> 38°C), persistent, unexplained lethargy or reduced playfulness	Recommendation for cantonal level	In children ≥ 5 years of age testing for TB should be done if there is any of the following: persistent cough (>2 weeks), unremitting cough, weight loss/failure to thrive, persistent (>1 week) unexplained fever (> 38°C), persistent, unexplained lethargy or reduced playfulness: activity reported by the parent/caregiver
LTBI	TST or IGRA for all migrant populations from high incidence countries	No Screening for healthy individuals without known exposure ?Screening only for exposed persons with IGRA	No Screening for healthy individuals without known exposure	All refugee children < 5 years of age regardless of their country of origin should be screened TST preferred in children < 5 years of age in children ≥ 5 years of age TST or IGRA may be used
HIV	Screening for migrants from high prevalence communities (≥1% prevalence) plus at high exposure risk	Information on symptoms of chronic infectious diseases with entry information no serologic testing if person appears healthy	Serologic Testing advised for risk groups:	Screening for HIV infection should be offered to all refugee children and adolescents
HCV	offer HCV Screening to migrant populations from endemic countries (≥2%)		Serologic Testing advised for risk groups: -persons from countries with prevalence >=3%, Central Asia, Eastern Europe, Sub-Saharan Africa, northern Africa, Middle East -MSM -Sexworker -injection drug abuser	
HBV	offer HBs-Antigen Screening to all migrants from intermediate/high prevalence countries (≥2% - ≥5% HBs-Antigen prevalence)		Serologic Testing advised for risk groups: - persons from countries with prevalence >= 2%, esp. Africa, Asia and Eastern Europe -MSM -Sexworker -after sexual assault or suspected sexual assault -injection drug users -pregnant women	HBsAg, anti-HBc
Schistosomiasis	Offer serological screening and treatment (for those found to be positive) to all migrants from countries of high endemicity in sub-Saharan Africa, and focal areas of transmission in Asia, South America and North Africa		Serologic Testing advised for risk groups: -persons from Sub-saharan Africa -persons with transit through Sub-saharan Africa	Schistosomiasis serology is recommended for refugee children and adolescents from all African and Middle Eastern countries as well as from Brazil, Venezuela, the Caribbean, Surinam, China, Indonesia, the Philippines, the Lao People's Democratic Republic and Cambodia
Strongyloides	Offer serological screening and treatment (for those found to be positive) for strongyloidiasis to all migrants from countries of high endemicity in Asia, Africa, the Middle East, Oceania and Latin America (see Figure 15).		Serologic Testing only advised for risk groups: -persons from Southeast Asia and Africa with chronic gastrointestinal symptoms or before starting immunosuppressive therapy	Strongyloides serology is recommended for refugee children and adolescents from highly endemic countries (Southeast Asia and Africa) 36), 42) . In case of immunosuppression, screening for strongyloides should be done regardless of the patient origin
Guidance origin:	Public health guidance on screening and vaccination for infectious diseases in newly arrived migrants within the EU/EEA	Empfehlungen für Impfungen sowie zur Verhütung und zum Ausbruchmanagement von übertragbaren Krankheiten in den Asylzentren des Bundes und den Kollektivunterkünften der Kantone https://www.bag.admin.ch/bag/de/home/strategie-und-politik/kantone		Guidance for testing and preventing infections and updating immunisations in asymptomatic refugee children and adolescents in Switzerland https://www.sginf.ch/files/guidance_for_testing_and_preventing_infections_and Updating_immunisations_in_asymptomatic_refugee_children_and_adolescents_in_switzerland.pdf
Addendums	*The optimal threshold of incidence in countries of origin at which to screen is yet to be defined.			

Annex 4 Summary of studies with information on implementation of infectious diseases screening in Switzerland

Study	Autor	Location	Information
Formative Evaluation der Gesundheitsversorgung für Asylsuchende_Schlussbericht	BSS, 2023	CH	<p>Most nurses at federal reception centres use the guideline for infectious diseases management</p> <p>Only about 50% of nurses at cantonal centres use the guideline</p> <p>Nurses that 75% of asylum seekers at federal reception centre claim a medical entry consultation</p> <p>Only 60% of cantonal reception centres provide the opportunity for a medical entry consultation</p> <p>One canton out of 26 routinely offers health check ups, preventive screening and recording of public health data</p>
Improving Primary Healthcare Access for Asylum Seekers and Refugees: A Qualitative Study From a Swiss Family Physician Perspective	Oehri et al., 2023	BL, BS, SO	Preventive consultations in primary care are rare
Care and cost trajectories of asylum seekers in a nurse-led, patient centred, care network in Switzerland	Spycher et al., 2021	VD	<p>Nurse-led migrant care unit</p> <p>HIV and HBV screening</p> <p>LTBI screening for children</p>
Clinical profile and care pathways among unaccompanied minor asylum seekers in Vaud, Switzerland	Genton et al., 2022	VD	Nurse-led migrant care unit for UMAs with screening
Medical Facilities for Refugees in Europe: Creating a Consultation for Resettled Syrian Families	Grant et al., 2021	VD	Consultation for resettled Syrian families with screening
Cost-effectiveness of tuberculosis screening for migrant children in a low-incidence country	Usemann et al., 2019	BL	School-based TB screening with Tuberkulin Skin Test for children and adolescents from high-incidence countries
Tuberculosis screening in school health services in Geneva, Switzerland (only abstract available)	Meynard et al., 2016	GE	School-based TB screening with TST for children and adolescents from high incidence countries

Annex 5 Summary of studies with information on health care access and access to infectious diseases screening

Study	Author/Year	Country	
How effective are approaches to migrant screening for infectious diseases in Europe? A systematic review	Seedat et al. 2018	EU and CH	Systematic review
National policies for delivering tuberculosis, HIV and hepatitis B and C virus infection services for refugees and migrants among Member States of the WHO European Region	Baggaley et al. 2023	EU und CH	Review of academic and grey literature in the WHO European region
Prevention, testing, and treatment interventions for hepatitis B and C in refugee populations: results of a scoping review	Saseetharran et al. 2023	EU and global	Review
Assessment of voluntary HIV screening for asylum seekers in two Swiss cantons	Cochand et al. 2019	CH; VD and VS	Prospective study
Perspective of asylum-seeking caregivers on the quality of care provided by a Swiss paediatric hospital: a qualitative study	Brandenberg et al. 2019	CH; BS	Qualitative in-depths interview study
Improving Primary Healthcare Access for Asylum Seekers and Refugees: A Qualitative Study From a Swiss Family Physician Perspective	Oehri et al. 2023	CH; BS, BL and SO	Qualitative study with semi-structured interviews
Asylum Seekers and Swiss Nationals with Low-Acuity Complaints: Disparities in the Perceived level of Urgency, Health Literacy and Ability to Communicate-A Cross-Sectional Survey at a	Klingberg et al. 2020	CH; BE	Cross-sectional survey at tertiary emergency department

Tertiary Emergency Department			
Cost-effectiveness of tuberculosis screening for migrant children in a low-incidence country	Usemann et al. 2019	CH; BS	Retrospective analysis of data from 2001 -2015
Clinical profile and care pathways among unaccompanied minor asylum seekers in Vaud, Switzerland	Genton et al. 2019	CH; VD	Retrospective study
Care and cost trajectories of asylum seekers in a nurse-led, patient centred, care network in Switzerland	Spycher et al. 2021	CH; VD	Retrospective study
Medical Facilities for Refugees in Europe: Creating a Consultation for Resettled Syrian Families	El Ghaziri et al. 2021	CH; VD	Community case study
The migration-related language barrier and professional interpreter use in primary health care in Switzerland	Jaeger et al. 2019	CH	Online questionnaires
Barriers to and solutions for addressing insufficient professional interpreter use in primary healthcare	Jaeger et al. 2019	CH	Online cross-sectional questionnaire-based study