Access to Vaccination
for Newly Arrived Migrants

DELIVERABLE 4.2

General conceptual framework for understanding "How to improve the vaccination coverage for NAMs"

Characterisation and critical analysis of the system barriers and solutions

Co-funded by the European Union's Health Programme (2014-2020)

DATE 28 February 2023

VERSION Version 4.0

REPORT AUTHORS

This report has been written by Giulia Marchetti, Salvatore Scarso, Maria Elena Tosti, Franca D'Angelo, Maria Grazia Dente, Silvia Declich **(Istituto Superiore di Sanità –ISS, National Centre for Global Health).**

In collaboration with Susanna Caminada, Maria Laura Russo, Arianna Bellini; Chiara De Marchi, Caterina Ferrari, Angela Gatta, Maurizio Marceca **(Sapienza University of Rome-SAP, Department of Public Health and Infectious Diseases).**

In collaboration with Pania Karnaki, Nadia Dalma, Nikole Papaevgeniou and Kostandinos Katsas **(Astiki Mi Kerdoskopiki Etaireia Proliptikis Perivallontikis Kai Ergasiakis Iatrikis - Prolepsis), Greece).**

With the support of the other **Consortium Partners Organization**: Fundacio Hospital Universitari Vall d'Hebron - Institut de Recerca (VHIR), Spain; Center for Social Innovation Ltd (CSI), Cyprus; Ministry of Health (Mohgr), Greece; Ethno-Medizinisches Zentrum Ev (EMZ), Germany; Ministry For Health - Government of Malta (MFH), Malta; Narodowy Instytut Zdrowia Publicznego PZH-PIB (NIZP PZH-PIB), Poland; Fundatia Romtens (ROMTENS), Romania.

We acknowledge the insightful remarks on the current report from Lara Tavoschi (University of Pisa, Italy) and Richard Wayne (AcToVax4NAM project external evaluator).

COMMISSIONED BY

3rd EU Health Programme, European Commission

European Health and Digital Executive Agency

DISCLAIMER

This project has been funded with support from the European Commission. This publication (communication) reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein. [Project number: 101018349]

AcToVax4NAM Project website

https://www.accesstovaccination4nam.eu/

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

GCF	General Conceptual Framework
IOM	International Organization for Migration
NAM	Newly Arrived Migrant[1]
NHS	National Health System
NIP	National Immunisation Program/Plan
SOP	Standardised Operating Procedures (SOP)

[1] The operational definition developed by the AcToVax4NAM project is based on Public Health considerations, regardless of legal status or country of origin. *NAM is defined as: "A person (with a different citizenship from the hosting country, with either EU/EEA or third country citizenship), who entered the country in the last 12 months EITHER within the procedures prescribed by the governmental migration policies, excluding tourists and short visa/permit < 3 months, OR outside the procedures recognized by the legislation (or overstay after visa expired)".* For full description, please refer to the Deliverable 4.1 https://www.accesstovaccination4nam.eu/results/

EXECUTIVE SUMMARY

The vaccination coverage of refugees and migrants within the European Union and European Economic Area (EU/EEA) is often poor and it is therefore a priority of the European Union to ensure high levels of immunisation for these populations.

Within the framework of the AcToVax4NAM Work Package 4 (Immunization guidance, reception & vaccine offer systems for NAM e related barriers: a conceptual framework), a General Conceptual Framework (GCF) has been developed **to characterize and critically analyse the system barriers that hinder the immunization of Newly Arrived Migrants (NAMs) and identify possible solutions**, considering the logic steps required for NAMs immunisation in order to understand how to overcome barriers for delivering an inclusive immunisation program for NAMs and improving their immunisation coverage.

The GCF considers all steps taken in the health care pathway from the vaccination entitlement to completion of needed vaccination, addressing also dropout, and adopting a life-course approach to immunization for children, adolescents, adults and elderly.

The document is intended for **managers** and **service providers at different level of the national migrant reception and vaccination system**, **professional associations involved in NAMs vaccination**, **regional and national public health institutions** and **NGO representatives** and, ultimately, for **policy makers at regional and national level** both in the consortium countries and in other ones, **as well as those at European level**. In particular, it is considered highly valuable for increasing awareness of European and national institutional and scientific stakeholders about barriers and solutions for vaccination of NAMs. **The final beneficiaries are NAMs based on the definition developed by the AcToVax4NAM project.**

The GCF will be the blueprint on which each consortium country will base their country specific action oriented flow charts, which will facilitate the vaccination uptake for NAMs in the country, as described in WP6. In fact, the flow charts will be developed, starting from the barriers and the proposed solutions identified and critically analysed in the GCF, adjusting to the situation in each country, and flowing in different possible solutions, with relevant tools for each identified barrier.

The GCF was developed through different steps. First of all, ISS and SAP started hypothesising a logical pathway in the immunization process based on five conceptual hubs of a GCF draft. In a second step, the GCF draft was used as the basis for organising the results of a non-systematic desktop review and to guide qualitative research. The results of the desktop review and the information from the qualitative research were than synthesised, in order to characterise system barriers and possible solutions, and finally critically analysed in order to consolidate the GCF.

The GCF includes all the dimensions relevant to the NAMs vaccination process, based on 5 hubs:

- **Entitlement** concerns the regulatory planning of the vaccination offer
- **Reachability** regards all strategies, including the 'proximity approach', and abilities of the health service to get in contact with NAMs
- **Adherence** includes the strategies to ensure that NAMs respond positively to the vaccination offer and to devise abilities in the 'professionals FOR health' to counteract vaccination hesitancy and fear among NAMs
- **Achievement** concerns the execution and completion of vaccination and should depends on organisation and flexibility of health services
- **Evaluation** regards the data and information flow to be used for the evaluation of activities

The GCF starts with Entitlement that underlines the concept that without the assurance of legally having the right to immunisation the entire process cannot take place. All hubs are linked to each other in a sequential continuous process: if vaccination does not take place, it's important to go back to the previous hubs to understand the barriers. As anticipated, the GCF represents the entire vaccination process and its division into hubs is instrumental to the description. In the reality of the process, abilities/skills cannot be confined to a single hub, and some activities can **involve several hubs but with different purposes.**

For example, the **proximity interventions** do not address only the *Reachability* hub. A vaccination camper van for instance might seem a strategy that concerns only the hub *Reachability* as it facilitates getting closer to NAMs, however, it also improves *Adherence* to vaccinations. The same strategy may concern the execution and follow up of vaccinations improving the *Achievement* of vaccination, as well as recording of performed

vaccinations. Moreover, **training strategies** in *Reachability* regard the training of health, social and police workers on NAMs vaccination rights, in *Adherence* aim to improve the cultural competence of the 'professionals FOR health'. On the other hand, in *Achievement* has the purpose to improve the competence in vaccination procedures.

Similarly, **cultural issues** concern *Reachability*, as the NHS must be culturally competent to reach the NAMs (e.g the vocabulary and language of the invitation letter), *Adherence* given that cultural competence may help to avoid the vaccination hesitancy and also the *Achievement*, because cultural competence and cultural mediators are necessary to carry out vaccinations (e.g. for consent, explanation of the vaccination).

In the end, strategies involving **data source** are carried out in *Reachability* and in *Achievement*, to identify, first the NAMs population in a country (denominator) and, secondly, the NAMs that have been immunised (numerator). This information is essential in the *Evaluation* hub to calculate the vaccination coverage of NAMs in the country and verify, among other, the effectiveness of the whole vaccination process.

In conclusion, it should be emphasised that the logical framework cannot be used in a neutral way, as it would otherwise be a simple map.

The process represented in the GCF essentially involves three dimensions, crossing the 5 hubs:

- Planning *[entitlement/reachability*]
- Offer [*reachability/adherence/achievement*]
- Evaluation *[reachability/evaluation]*

For the process to be as fluent and effective as possible, each of these dimensions must have certain qualities. These qualities influence and direct the process, within the various hubs, to truly strengthen health systems and make vaccination more guaranteed and equitable.

Planning must be ***inclusive.*** Inclusion of NAMs in planning documents and application procedures must always be taken into account.

Offer must be ***active.*** It is the health system that actively proposes the vaccinations, not that passively responds to a NAMs request. In particular, ***free*** provision is the only way to overcome the economic barriers.

The offer should be ***co-operative*** because there is a plurality of actors involved (public, civil society, NGOs) that have to find forms of collaboration and agreement.

It is important that the provision of health prevention be ***autonomous and independent***, and there should be no legal consequences for migrants who are not in good standing with their residence permits.

The offer must also be characterized by organizational ***flexibility***, especially in the development of proximity strategies, through the lines of outreach, a system of mediation involving the entire organization.

To strengthen the offer, it is imperative to maximize the competencies of the health system. It is necessary to invest in training and retraining with a multidisciplinary and multi-sector mode to strengthen both the ***system's health literacy*** and the ***migrant-sensitive approach***.

Evaluation must be ***effective.*** An effective evaluation should be based on a national common recording system and include uniform accuracy of data collection and recording in the whole country. However, particular attention should be paid to data disaggregation and the issues related to the privacy.

Finally, vaccination to NAMs fits fully within the domain of health promotion. In this sense, it is useful to highlight how vaccination to NAMs calls for the collaboration of a plurality of sectors and actors and it becomes necessary, therefore, to adopt an intersectoral and multi-stakeholders approach within which the health system must play a leading, directing, **stewardship role.**

It has become evident that there is an urgent need to create and adopt at country (and also EU level) **Standard Operational Procedures (SOPs)** for the vaccination of NAMs. This will allow all stakeholders involved to know what to do, how to do it and with whom it is important to collaborate.

In fact, as national health systems, as well as migrants' rights and organisation of reception, differ between countries, there is no 'one size fits all' model. To make this GCF useful in everyday vaccination and to improve vaccination coverage among migrants, it is therefore recommended that SOPs be drawn up at the national level, implemented and followed up by all relevant health services. SOPs should cover all aspects/phases of vaccination, e.g. regular information campaigns for migrants, consistent mediator training, vaccine delivery, vaccine registration. .

ABSTRACT

Background. The vaccination coverage of refugees and migrants within the European Union and European Economic Area (EU/EEA) is often poor and it is therefore a priority of the European Union to ensure high levels of immunisation for these populations. Within the framework of the AcToVax4NAM Work Package 4 (Immunization guidance, reception & vaccine offer systems for NAM e related barriers: a conceptual framework), a General Conceptual Framework (GCF) has been developed to characterize and critically analyse the system barriers that hinder the immunization of Newly Arrived Migrants (NAMs) and identify possible solutions, considering the logic steps required for NAMs immunisation in order to understand how to overcome barriers for delivering an inclusive immunisation program for NAMs and improving their immunisation coverage.

Methods. The GCF was developed through different steps. First of all, with the theoretical conceptualization of a GCF draft, ISS and SAP started hypothesising a logical pathway in the immunization process based on five conceptual hubs: ENTITLEMENT to vaccination, REACHABILITY of people to be vaccinated, ADHERENCE to vaccination, ACHIEVEMENT of vaccination, EVALUATION of the intervention. In a second step, the GCF draft was used as the basis for organising the results of a non-systematic desktop review and to guide qualitative research: both of them were implemented based on a predefined methodological protocol to identify system barriers to NAMs' immunisation and possible solutions. The results of the desktop review and the information from the qualitative research were synthesised in order to characterise system barriers and possible solutions reported in this deliverable. Furthermore, the results of the desktop review and the information from the qualitative research were critically analysed in order to consolidate the GCF.

Results. The Final GCF represents the entire vaccination process, based on 5 hubs: Entitlement, Reachability, Adherence, Achievement and Evaluation.
All hubs are linked sequentially, starting with Entitlement without which the process cannot take place. Hubs are connected: if vaccination does not take place, it's important to go back to the previous hubs to understand the barriers. Some strategies to achieve the objectives of each hub could address more than one hub at the same time. In fact, some activities are elements that involve several hubs but with different purposes, such as proximity interventions which, in addition to allowing the system to approach NAMs, promote adherence and thus possibility of completing the process. Training is another strategy that may be implemented with different purposes: it aims to foster a culturally competent approach to facilitate adherence and avoid vaccination hesitancy, but also to improve competence in the entire process and lead to vaccination completion.

Conclusions. The GCF includes all the dimensions relevant to the NAMs vaccination process. Through the identification of barriers and possible solutions at every step of the process, it can allow to find strategies and activities useful to improve health services for NAMs vaccination and therefore make vaccination more guaranteed and equitable. The GCF will be the basis for the creation of country-specific flow-charts through which to test strategies for overcoming their own barriers. The GCF will be useful at EU level, to facilitate both the harmonisation of approaches and interventions and the evaluation of comparable approaches.

SECTION 1 – DESCRIPTION OF THE GENERAL CONCEPTUAL FRAMEWORK

Introduction

In the framework of the AcToVax4NAM Work Package 4 (Immunization guidance, reception & vaccine offer systems for NAMs and related barriers: a conceptual framework), a General Conceptual Framework (GCF) has been developed to characterize and critically analyse the system barriers that hinder the immunization of Newly Arrived Migrants (NAMS)[2] and identify possible solutions, considering the logic steps required for NAMS immunisation in order to understand how to overcome barriers for delivering an inclusive immunisation program for NAMs and improving their immunisation coverage.

The GCF considers all steps taken in the health care pathway from access to appropriate health services to completion of needed vaccination, addressing also dropout, and adopting a life-course approach to immunization for children, adolescents, adults and elderly.

The document is intended for managers and service providers at different level of the national migrant reception and vaccination system, the professional associations involved in NAMS vaccination, regional and national public health institutions and NGO representatives and, ultimately, for policy makers at regional and national level both in the consortium countries and in other ones, as well as those at European level. In particular, it is considered highly valuable for increasing awareness of European and national institutional and scientific stakeholders about barriers and interventions to overcome barriers for vaccination of NAMS. The final beneficiaries are Newly Arrived Migrants (NAMs) based on the definition developed by the AcToVax4NAM project[2].

The General Conceptual Framework (GCF) will be the **blueprint on which each consortium country will base their country specific action oriented flow charts**, which will facilitate the vaccination uptake for NAMs in the country, as described in WP6. In fact, the flow charts will be developed, starting from the barriers and the proposed solutions identified and critically analysed in the General Conceptual Framework, adjusting to the situation/specificities (health system, legal issues etc.) in each country, and flowing in different possible solutions, with relevant tools for each identified barrier. In fact, at national level, it will be necessary to take into consideration the different NAMs categories (e.g. from EU vs non-EU, documented vs undocumented), the heterogeneity of settings and consider the different age group and the life course vaccinations proposed in the country, as well as special groups such as pregnant women. Then countries would clearly define ‘what can be done’, ‘by whom’ and ‘when’ in their context, reflecting also on needed resources and not only proposing simple solutions.

The **GCF will be revised if needed during the following project phases, after translation into WP6 and testing in WP7**.

The General Conceptual Framework will be useful at EU level, as it will facilitate both the harmonisation of approaches and interventions and the evaluation of comparable approaches.

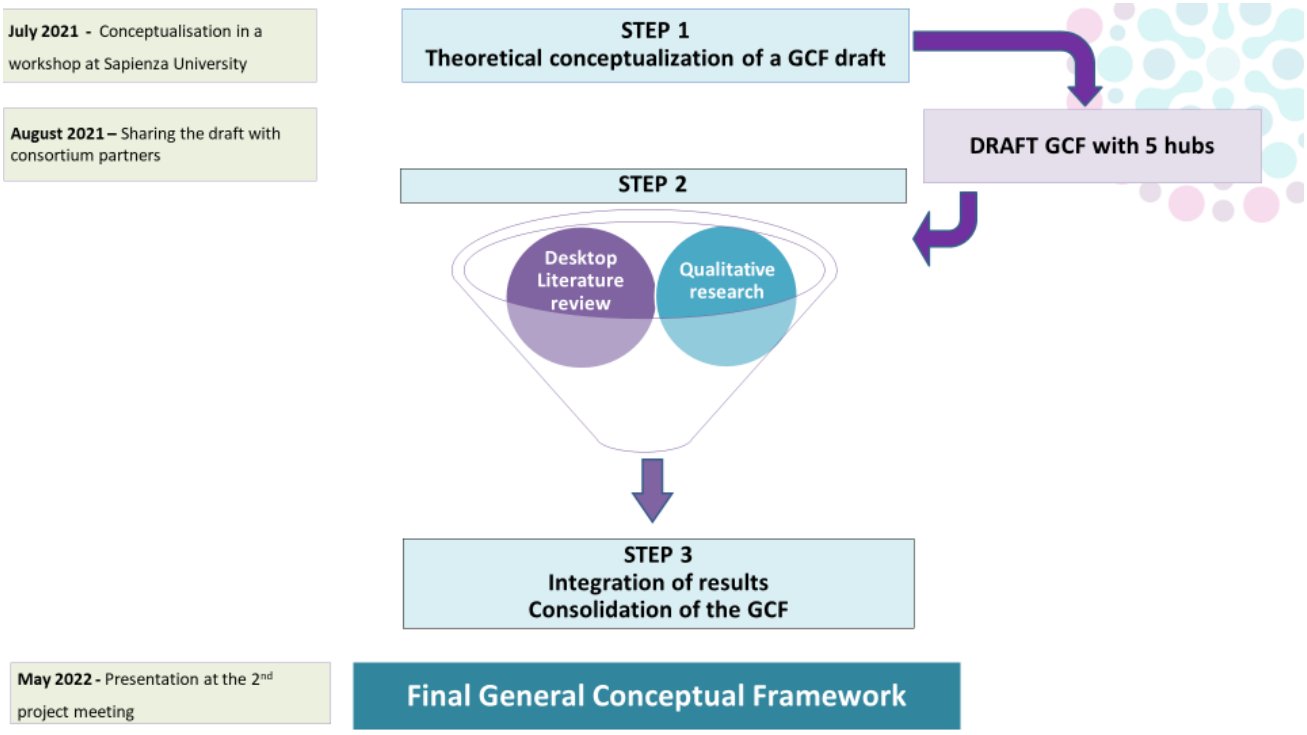
ISS and Sapienza have worked jointly to produce the Conceptual Framework, in collaboration also with Prolepsis. This report was sent to Consortium partners and experts for comments before finalization.

[2] Refer to the footnote in the abbreviations section at the beginning of the document

Methodology

The GCF was developed through stages, with different methodologies (Fig.1).

Figure 1 Stages for the development of the General Conceptual Framework



Theoretical conceptualization of a GCF draft

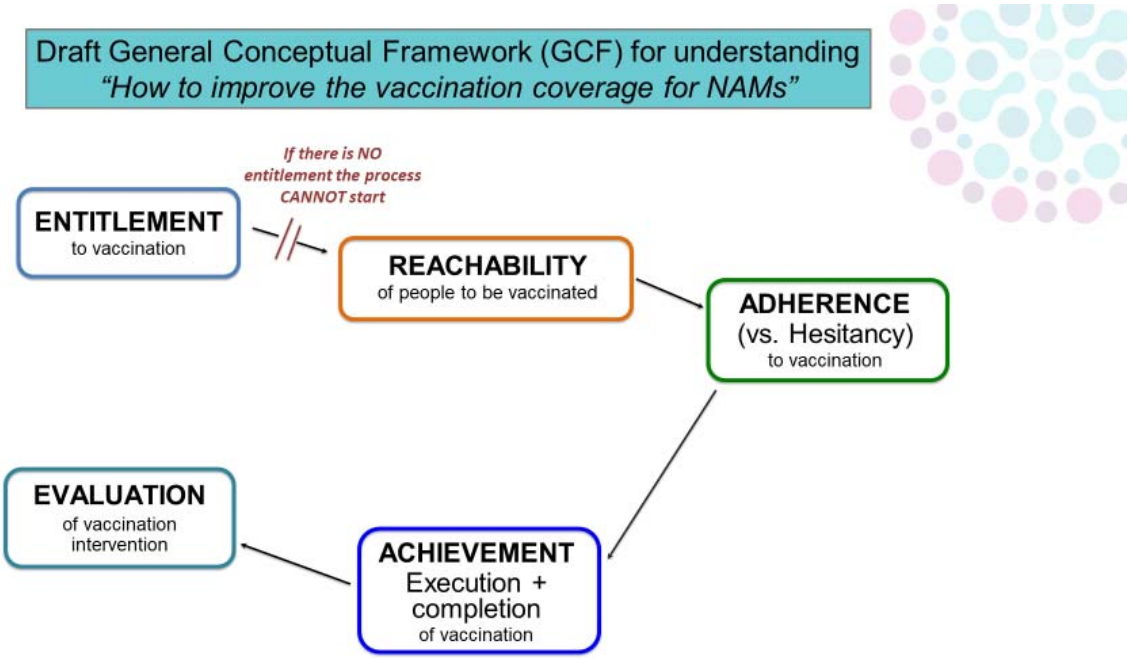
As first stage, the **extended expertise** on migrant health and immunization systems of ISS and SAP staff was used as key resource to conceptualize, identify and design the logical process of the optimal delivery of an inclusive immunization program for NAMS. The development of draft occurred in real time during a hybrid (in-person and virtual) workshop in July 2021 (Figure 2).

Figure 2 ISS and Sapienza Workshop for the first theoretical conceptualization of the GCF

(Photo by M. Marceca)

The theoretical conceptualization by the experts took into account the main steps involved in the vaccination of NAMs**.** These steps become the five hubs of the Draft of GCF **entitlement, reachability, adherence, achievement and evaluation** (Figure 3).

Figure 3 Immunization steps became the 5 hubs of the draft GCF



The Draft was shared at the end of August with the AcToVax4NAM consortium partners and presented and discussed during the consortium meeting on the 2nd September 2021.

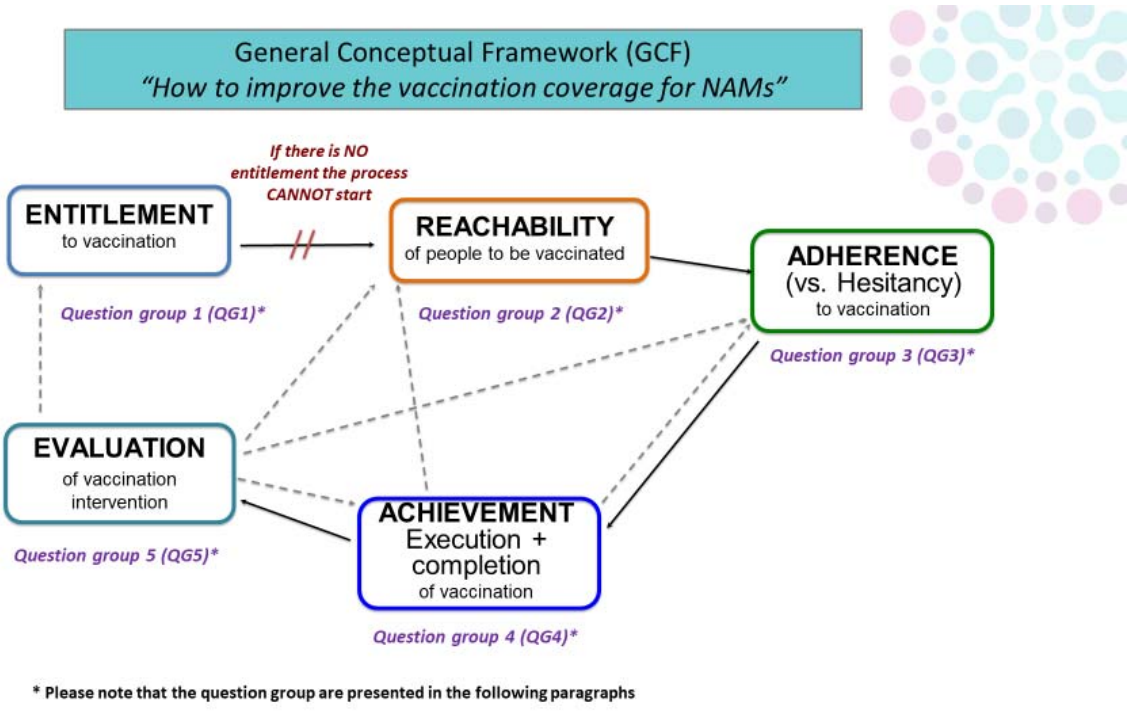
Furthermore, to be able to frame the different issues and understand the reasoning behind each hub, the team has formulated specific "Question Groups" (QG) concerning every concept/hub (Figure 4 and Table 1). The results of the Deliverable 4.1 "National Reception System and Vaccination Policies for NAMs" (https://www.accesstovaccination4nam.eu/results/) regarding NHS organization and the entitlement/right to vaccination for migrants, organizational difficulties to come into contact with the NHS, identified barriers for the immunization of migrants (legal, economic, organizational, logistic, linguistic/cultural) and the lack of systematic data collection on immunization for migrants, all contributed to develop the questions.

These questions were a useful tool for the following developing stages of the GCF described in the following paragraphs, in particular to accurately guide personal interviews and the focus groups and assign all records extracted from the review of literature and the qualitative research in the corresponding hub.

The QG are characterised with barriers and solutions that are features of the hubs. However, the boundaries between the various types of barriers / solutions are not always rigid.

It is important to note that all questions refer to NAMS according to the **AcToVax4NAM operational definition**[3] **and for** all questions **distinctions between different legal status of NAMs** should be taken into account.

Figure 4 Questions groups have been created for each hub



[3] Refer to the footnote in the abbreviations section at the beginning of the document

Table 1 GCF hubs (description and question groups)

GCF Hub/concept	Description	Question Groups
ENTITLEMENT to vaccination **WHAT** rights for vaccination to **WHOM?**	This hub concerns the regulatory planning of the vaccination offer. **If there is NO entitlement the process CANNOT start.**	**Legal barriers/solutions** ● Is there a national vaccination plan? - If so, does this plan consider NAMs? - If so, which categories of NAMs are covered? - If not, are there other documents considering NAM vaccination? ● Are NAMS entitled to vaccinations? - What are the differences between the different categories of NAMs regarding vaccination entitlement? - Are there any differences with respect to the local population when it comes to entitlement to vaccination? **Economic barriers / solutions** ● Does the Health System require the full payment of vaccinations by NAMs? - Are there any differences between the different categories of NAMS regarding payment of vaccination? ● Does the Health System require a co-payment fee for NAMs vaccinations? - Are there any differences between the different categories of NAMs regarding vaccination co-payment fees?
REACHABILITY of people to be vaccinated **HOW** (the health service gets in contact with) **to WHOM** (NAMs)?	This concept regards all strategies, including the 'proximity approach', and abilities of the health service to get in contact with NAMs	**Administrative/organizational barriers / solutions** ● Where are NAMs staying (centres, camps, community)? - Are there any differences between the different categories of NAMs? ● Are there any lists of NAMs who arrived in the country in the previous 12 months? Where is it possible to get this information? - Are there any differences between the different categories of NAMs? ● Through which channels are NAMs contacted? Are NAMs contacted at an individual / collective level (e.g. reception centres)? - Are there any differences between the different categories of NAMs? ● Is there a possibility for NAMs or NGOs working with NAMs to actively request vaccinations? - Are there any differences between the different categories of NAMs? ● Are health, social and police workers adequately trained regarding NAMs vaccination rights?

ADHERENCE (vs. Hesitancy) to vaccination **HOW** (vaccines are offered) **for WHAT** (NAMs needs)?	This concept includes strategies to ensure that NAMs respond positively to the vaccination offer. It is also necessary to devise strategies and abilities in the professional FOR health to counteract vaccination hesitancy, fear, and other psycho-social issues among NAMs	**Organizational/logistic barriers/solutions** ● Is the vaccination offer 'active' (in the sense of actively proposed by the Health System and not only consequent to a specific request of the NAM)? ● Are the services easily accessible? ● Is the vaccination offer organized with proximity services? **Economic barriers / solutions** ● Is the vaccination offer truly free of any charge, if the NAM is entitled to? **Legal barriers/solutions** ● Is there a reporting obligation / risk to non-sanitary bodies (and in particular to the Police) for undocumented NAMs? **Psycho-social barriers/solutions** ● Is the fear of reporting to non-sanitary bodies by the vaccination services countered? ● Are the vaccinations voluntary, confidential, non-stigmatizing? **Cultural-linguistic barriers/solutions** ● Is adequate and accessible information (by method and language) provided by the vaccination service? ● Is adequate and culturally competent information provided about the importance and safety of vaccination to improve adherence? ● Which communication channels are used (health professionals, community leaders, law enforcement agencies, etc.)? ● Are interventions being implemented to combat fake news on vaccines? ● Are health, social and police workers adequately trained to address the cultural barriers so as to ensure an adherence to vaccination?
ACHIEVEMENT Execution + completion of vaccination **WHAT** (vaccines) **and WHEN for WHOM** and **HOW for WHAT?**	This concept concerns the execution and the completion of vaccination and should focus on organization and flexibility of health services.	**Organizational/logistic barriers/solutions** ● Is there an assessment of the previous vaccination status of individual NAM? How is this assessment done? ● Are vaccination services flexible in terms of organization / time? ● Do NAMs have easy physical access to vaccination services? ● Is a vaccination certificate issued? ● How are the vaccinations carried out recorded? ● Are there any differences between the different categories of NAMs in the organization of the vaccine process? **Linguistic-cultural barriers/solutions** ● Is informed consent understandable (simple and translated into a language known by the NAMs)? ● Are health professionals properly trained to address linguistic and cultural barriers? Is there any specific training available for professionals? ● Are cultural mediators available for the needs of the service?

EVALUATION of vaccination intervention **HOW many** and **WHO** (vaccinated) **among ALL (**NAMs**)**.	This concept stresses the importance of the vaccination evaluation through every step of the vaccination process. It is linked to every other hub as the dashed arrows shown in figure 4. The vaccination Evaluation needs to involve the strategies and actions of every other previous hub.	**Organisational barriers/solutions** ● Does the Health System have an information flow dedicated to vaccinations at national level? ● Does the flow allow the extraction of data for NAMs? ● Is it possible to calculate the vaccination coverage for NAMs? - Is vaccination data available as a numerator of vaccination coverage? ● Is there a local/national database? ● How long has the data been collected? - Is the data of NAMs that entered the country in the previous 12 months available as a denominator of vaccination coverage? ● Is there a local/national database? ● How long has the data been collected? - Are there any differences between the different categories of NAMs

Desktop literature review

A **desktop literature review** has been implemented, also at country level, to identify existing research concerning system barriers at legal, linguistic, cultural and logistic level and solutions, recommended or already implemented, to overcome them. The non-systematic desktop review was conducted by ISS and Sapienza with the collaboration of the other members of the Consortium, on the basis of a protocol shared at the beginning of July 2021 (Appendix 1).

In order to find scientific articles or documents concerning the topic of interest (i.e. system barriers at legal, linguistic, cultural and logistic level and solutions to overcome these barriers and implementation challenges) a search strategy, was launched on PubMed, according to the protocol presented in Appendix 1. Another research was carried out on institutional websites.

The inclusion criteria for documents/scientific articles were:

- **time limits**: since 2014 when, given the larger influx of NAMs in EU, relevant analyses and documents in the field were available in the European context; in presence of several documents of the same kind only the most updated documents had to be included;
- documents included must refer to **newly/recently arrived migrants**[4] based on the definition used for the project (see note in the abbreviations section at the beginning of the document);
- documents must refer to **EU/EEA Countries;** however, as regards the barriers and possible solutions, documents referring to non-EU developed countries, which could present situations applicable also in the EU context, had to be considered.

The WP4 leader conducted the literature and document review in English, while the consortium countries integrated the search with materials in local language or contained in national website. Each barrier or solution was extracted in a MS Excel grid according to the protocol (Appendix 1). When a document contained more than one barrier or solution, one line (record) of the excel grid was used for each barrier or solution.

Relevant information from the consortium countries were transferred to ISS by consortium countries also by compiling the extraction grid and later on clustered according to the five hubs of the General Conceptual Framework.

One-hundred and fifty one documents were collected from the review, 85 documents (out of which 38 scientific articles, 16 reports, 5 guidelines, 4 policy documents, 5 technical documents, and 17 other document types), containing at least one barrier and/or solution, were selected and analysed. After the exclusion of 5 documents (not pertinent to immunization), 80 documents were included. From them 315 records were extracted, containing barriers (252 records) and/or possible solutions (221 records). The resulting records were assigned to the different hubs of the GCF: 43 to Entitlement, 47 Reachability, 149 Adherence, 67 Achievement and 9 Evaluation.

[4] Refer to the footnote in the abbreviations section at the beginning of the document

Table 2 Results from the literature review

Document types	N°
Scientific Literature	36
Report	15
Guideline	5
Policy document	5
Technical Document	3
Other document type	16
Totale complessivo	**80**

HUBs	N° records
ENTITLEMENT	43
REACHABILITY	47
ADHERENCE	149
ACHIEVEMENT	67
EVALUATION	9
Total	**315**

All the barriers and solutions collected from the desktop literature review are catalogued and presented according to the GCF hubs (Appendix 3).

Qualitative research

A **qualitative research** was conducted by each country in order to understand in-depth the actual experiences of the "professionals FOR health" involved in NAMs immunization and to achieve the characterization of system barriers (legal, linguistic, cultural, and logistic, etc.) and identification of possible and sustainable solutions at country level.

Eligible participants included: (i) **health and social care professionals who work in the field of delivery of immunizations** with special attention to migrants if possible including physicians, nurses, social workers, psychologists, cultural mediators etc., (ii) **professionals, who work in managing/organizing immunization services** with special attention to migrants such as managers, administrative staff, physicians, nurses, social workers working in managing/organizing immunization services, and (iii) **experts related to immunization planning** with special attention to migrants if possible including policy makers, public health experts, actors involved in the development of the National Immunization Plan, migrant community leaders, etc.

All participants were recruited through the "AcToVax4NAM" partners' regional network. A clear explanation of the program, the study aim, objectives, and procedures were provided to all the participants. One Focus Group (with approximately 4-8 participants each) was conducted with each of the first two target-groups mentioned above (health and social care professionals who work in the field of delivery of immunizations and professionals, who work in managing/organizing immunization services), in the seven participating countries, while 3 Personal Interviews were conducted with the third target group (experts related to immunization planning), in the seven participating countries. In total, **117 people** participated in **13 FGDs and 53 PIs** in Germany, Poland, Spain, Italy, Greece, Malta, and Cyprus.

Guidelines for performing Focus Group discussion and Personal Interviews were developed for all partners by Prolepsis Institute (leading organization for this task) to provide a common methodology in order to ensure a uniform group composition, a general framework on running the focus groups and interviews, and a consistent approach for analysing and reporting the results. A more detailed description of the methodology followed for the qualitative analysis can be found in the relevant Appendix 2.

The topics of the discussions **focused on 5 specific concepts/hubs** related to NAMs vaccination identified in the draft of the GCF. A common discussion guide was developed providing the frame of the discussions as well as indicative open questions. The discussion considered the ActoVax4NAM operational definition -differences in age and legal status of NAMs. Emphasis was also placed on the consequences of COVID-19 for the vaccination of NAMs and also on the opportunity COVID-19 has provided in the field of NAMs' immunization, if any.

Focus Group discussions and Personal Interviews were transcribed verbatim in local languages and identifiers were removed to maintain anonymity. Transcripts were analyzed using thematic analysis (Hsieh and Shannon

2005)[5]. The organization responsible for the analysis (Prolepsis Institute) continued with the clustering of codes into emergent categories, which were then structured and grouped to overarching themes. Final validation of codes against data extracts was undertaken between each participating organization and the lead organization, to ensure the consistent representation of themes and categories to the entire data set and resulted in a final single report (Appendix 4).

Integration of the results from literature review and qualitative research and consolidation of the GCF

The most relevant barriers and solutions resulting from desktop literature review and qualitative research were selected and merged by similarity. The **results** are presented in Section 2 of the present document in order to characterise the GCF reported in this deliverable.
This stage was very useful for the revision and consolidation of the GCF, the advanced draft of which was shared with the project partners at the end of April and then discussed during the 2nd **AcToVax4NAM** project meeting held in Rome May 2-4. Subsequently the partners, especially the members of the project Steering Committee, sent scores and comments according to the grid prepared by the WP3 dedicated to evaluation. These were used for **a** further revision of the document, which was then presented to the project Steering Committee meeting on June 20 and then finalized by the end of June.

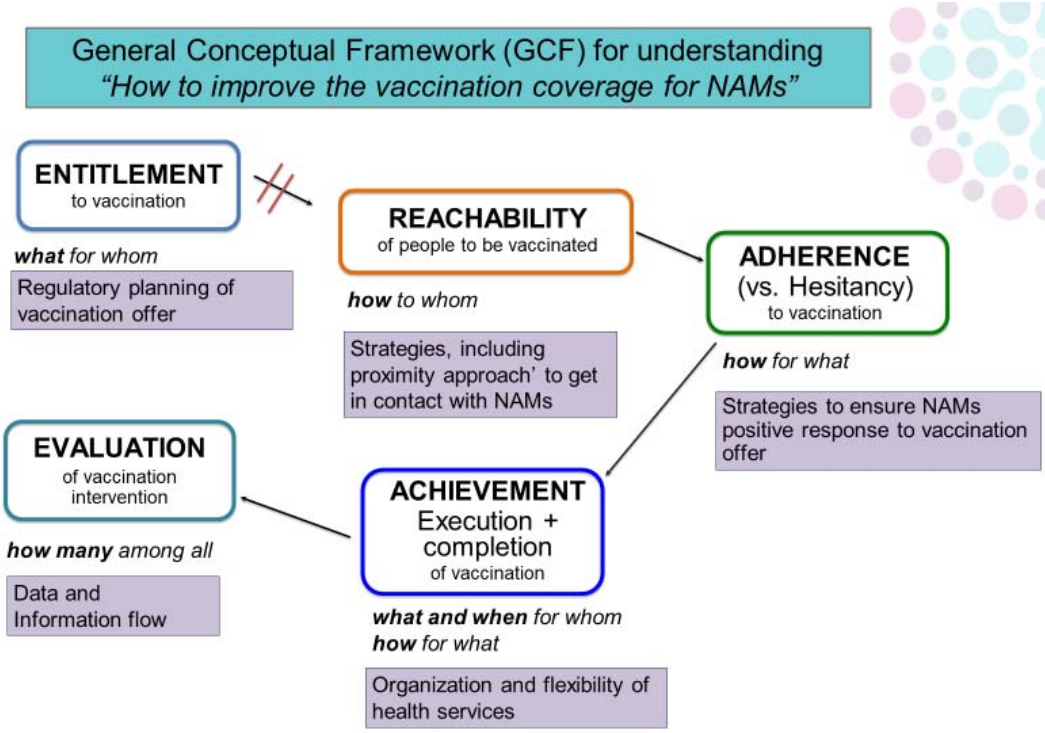
[5] Hsieh, H. F., & Shannon, S. E. (2005). Three Approaches to Qualitative Content Analysis. Qualitative Health Research, 15, 1277-1288.

The General Conceptual Framework at a glance

The General Conceptual Framework represents the entire vaccination process, based on 5 hubs (Fig. 5).

- **Entitlement** concerns the regulatory planning of the vaccination offer
- **Reachability** regards all strategies, including the 'proximity approach', and abilities of the health service to get in contact with NAMs
- **Adherence** includes the strategies to ensure that NAMs respond positively to the vaccination offer and to devise abilities in the 'professional FOR health' to counteract vaccination hesitancy and fear among NAMs
- **Achievement** concerns the execution and completion of vaccination and should depends on organisation and flexibility of health services
- **Evaluation** regards the data and information flow to be used for the evaluation of activities

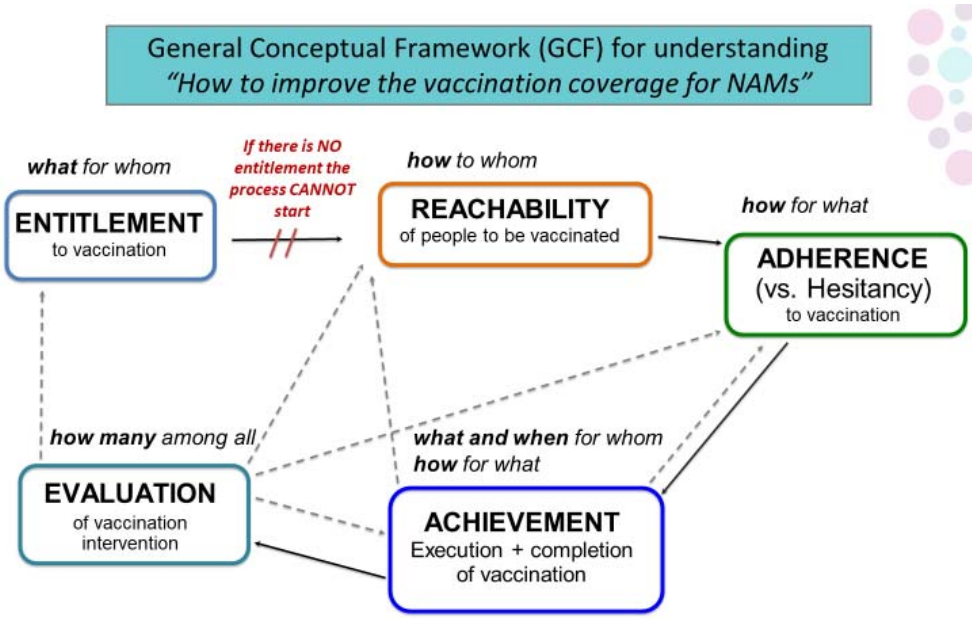
Figure 5 The General Conceptual Framework represents the vaccination process



As can be seen in Figure 6, there is a connection between each hub. The **interrupted arrow** starting from the Entitlement hub underlines that without the legal right to immunisation the entire process cannot start. The **continuous arrows** show the sequential continuity of the process.

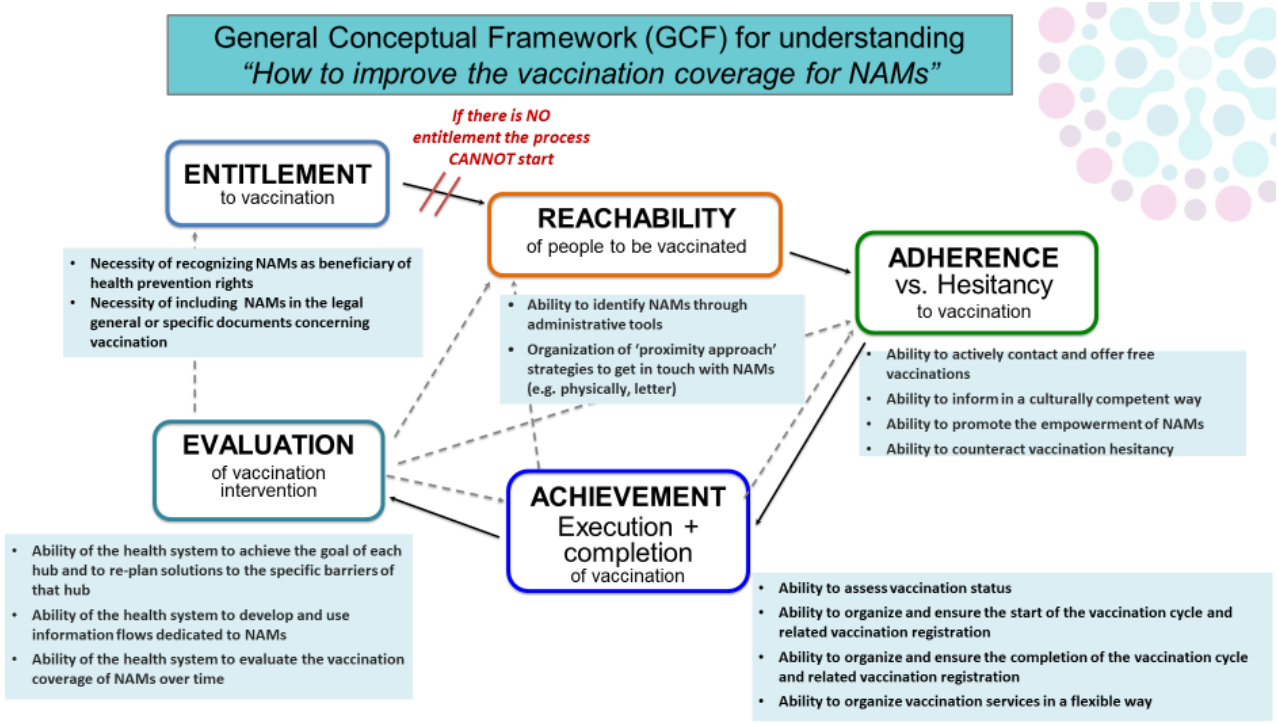
The **dashed arrows** underline that all hubs are linked to each other. In particular, the dashed arrows starting from the Achievement hub indicate that if the execution and completion of vaccination do not happen it is important to go back to the previous hubs (Reachability and Adherence) to understand the reasons. The dashed arrows from the Evaluation hub indicate that the evaluation process has to be cross-cutting at all hubs and has to take into account their strategies and actions.

Figure 6 The hubs of the GCF are connected



Furthermore, each hub includes different abilities for the success of the overall vaccination process (Figure 7). As anticipated, the GCF represents the entire vaccination process and its division into hubs is instrumental to the description. In the reality of the process, abilities/skills cannot be confined to a single hub, but are here schematized for easier illustration.

Figure 7 Each hub includes different abilities for an optimal vaccination process



Entitlement hub

The first step of the process is the "**entitlement to vaccination**". This hub underlines **WHAT** (rights for vaccination) **to WHOM** and concerns the regulatory planning of the vaccination offer. The main concepts behinds this hub are:

- necessity of recognizing NAMs as beneficiaries of health prevention rights
- necessity of including NAMs in the legal general or specific documents concerning vaccination

Reachability hub

The second hub is "**reachability** of NAMs to be vaccinated" and it means **HOW (**the health service gets in contact with) **to WHOM (**NAMs). This concept regards all strategies, including the 'proximity approach', and abilities of the health service to get in contact with NAMs. These strategies include:

- ability to identify NAMs through administrative tools (e.g. in existing registers);
- organisation of 'proximity approaches' strategies to get in touch with NAMs (e.g. physically, invitation letter).

Adherence hub

The third step is "**adherence** to vaccination", which means **HOW for WHAT**, namely how the vaccines are offered considering NAMs' needs. This concept includes the strategies to ensure that NAMs respond positively to the vaccination offer. The strategies that should be implemented by the NHS are:

- ability to actively contact and offer free vaccinations
- ability to inform NAMs in a culturally competent way about vaccine or when they have questions/doubts or concerns about vaccinations

- ability to promote the empowerment of NAMs

It is also necessary to devise strategies for and develop abilities of the "professionals FOR health" to counteract vaccination hesitancy, fear and other psycho-social issues among NAMs.

Achievement hub

The "**achievement**" is the hub concerning the execution and the completion of vaccination, **WHAT** (vaccines) **and WHEN for WHOM** and **HOW for WHAT** and should focus on organization and flexibility of health services. It includes different points:

- ability to assess vaccination status of individual NAM (including the collection of previous immunisation information)
- ability to organise and ensure the vaccination cycle and the necessary vaccination registration
- ability to organise and ensure the completion of the vaccination cycle and related vaccination registration
- ability to organise vaccination services in a flexible way

Evaluation hub

The Evaluation is the hub that reports **HOW many** (vaccinated) **among ALL** (NAMs). In this concept the data information flow is very relevant, in terms of:

- ability of the health system to monitor the vaccination process and achieve the goal of each hub and to re-plan solutions to the specific barriers of that hub
- ability of the health system to develop and use information flows dedicated to NAMs
- ability of the health system to evaluate the vaccination coverage of NAMs over time

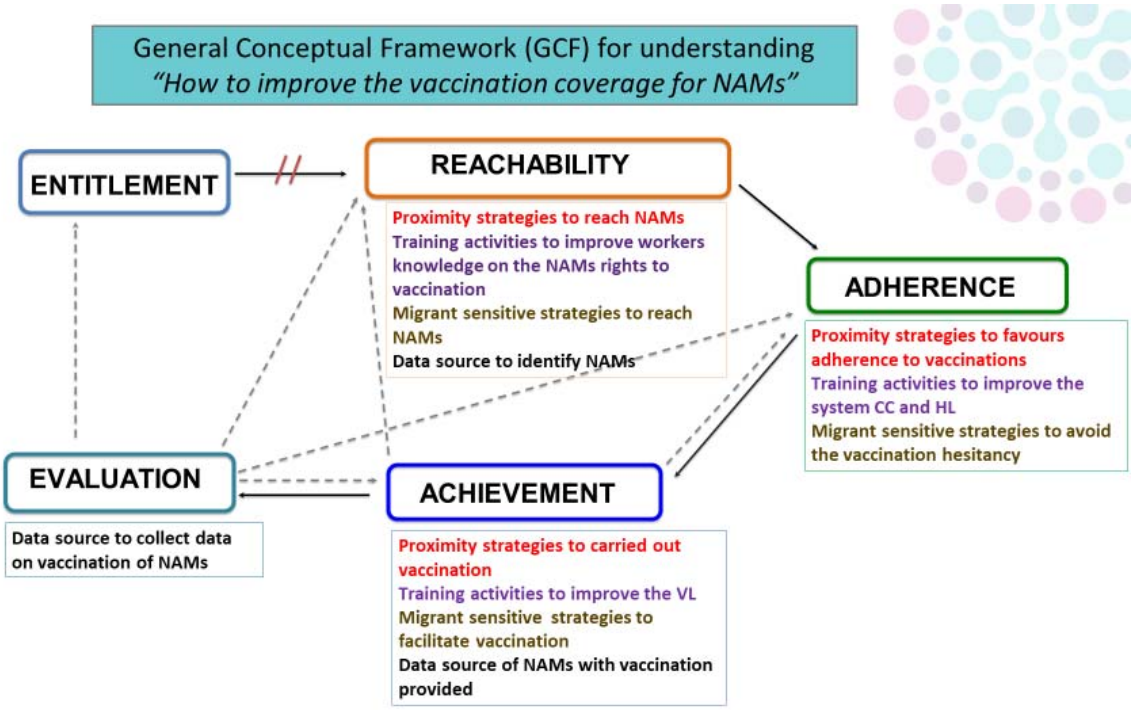
This hub should also stress the importance of evaluating and monitoring through every step of the vaccination process also for the evaluation of the overall effectiveness. It is linked to every other hub as the dashed arrows show in the GCF figure, hence evaluation needs to involve the strategies and actions of every other previous hub.

Overlapping among hubs

Although described individually above, strategies to achieve the objectives of each hub could address more than one hub at the same time. In fact some activities can **involve several hubs but with different purposes** (Fig. 8).

For example, **proximity strategies** (in red in the figure) do not address only the *Reachability* hub. A vaccination camper van for instance might seem a strategy that concerns only the *Reachability* hub as it facilitates getting closer to NAMs, however it also improves adherence to vaccinations. The same strategy may concern the execution and follow up of vaccinations improving the Achievement of vaccination, as well as recording of performed vaccinations.

Figure 8 Overlapping among hubs



Moreover, the **training strategies** (in violet in the figure) in *Reachability* regards the training of health, social and police workers on NAMs vaccination rights, while in *Adherence* aim to improve the cultural competence of the professionals for health. On the other hand, in *Achievement* training has the purpose to improve the competence in vaccination procedures.

Similarly, **cultural issues** (in brown in the figure) concern *Reachability*, as the NHS must be culturally competent to reach the NAMs (e.g the vocabulary and language of the invitation letter), *Adherence* given that cultural competence may help to avoid the vaccination hesitancy and also the *Achievement*, because cultural competence and cultural mediators are necessary to carry out vaccinations (e.g. for consent, explanation of the vaccination).

In the end, strategies involving **data source** (in black in the figure) are carried out in *Reachability* and in *Achievement*, to identify, first of all the entire NAMs population in a country (denominator) and, secondly, the NAMs that have been immunised (numerator). Together this information is essential in the *Evaluation* hub to calculate the vaccination coverage of NAMs in the country and verify, among other, the effectiveness of the whole vaccination process.

Access to Vaccination
for Newly Arrived Migrants

ISTITUTO SUPERIORE DI SANITÀ
NATIONAL CENTRE
GLOBAL HEALTH

DIPARTIMENTO DI SANITÀ PUBBLICA E MALATTIE INFETTIVE
SAPIENZA
UNIVERSITÀ DI ROMA

PROLEPSIS
INSTITUTE

SECTION 2 – BARRIERS AND SOLUTIONS FROM THE LITERATURE AND QUALITATIVE RESEARCH

Section 2 describes the system barriers and solutions regarding immunization for NAMs as results of:

- the Desktop Literature Review related to EU/EEA Countries; however, as regards the barriers and possible solutions, documents referring to non-EU developed countries, which could present situations applicable also in the EU context, had to be considered;
- the Qualitative Research conducted in the Consortium Countries.

By using the question groups described in Section 1, the main barriers and solutions were characterized and assigned within each hub.

For more details on references from the desktop literature review see Appendix 3 and for details on results from qualitative research see Appendix 4.

Entitlement to vaccination

Access to and delivery of vaccinations for refugees and migrants, irrespective of their legal status, are recommended by supranational institutions to ensure universal provision of equitable, non-discriminatory and person-centred health-care services. Despite this, there are several barriers to the full implementation of this recommendation in EU Countries, mostly attributable to health regulations towards refugees and migrants.

In this hub are reported legal and economic barriers and solutions that can play a crucial role in entitlement to vaccination for NAMs.[6]

Legal

Table 3 Legal barriers and solutions found for Entitlement

Desktop Literature review		Qualitative Research	
Barriers	***Solutions***	***Barriers***	***Solutions***
- Host countries may lack policies and other legal documents with specific recommendations on immunisation for refugees and other migrants - In some host countries, migrants may not be specially included in National Immunisation Programs (NIPs) - Migrants may have differences in entitlement to health and immunisation services when they arrive in host countries either with respect to the local population and among different groups (e.g. asylum seekers, refugees, undocumented migrants) - Health policies towards refugees and other migrants vary significantly	- Legal status should not be taken into account for the decision on access to vaccinations. - Avoid relying on regularisation of legal status because it would unacceptably delay the protective effects of vaccination, in particular for high-risk population groups (unaccompanied minors, children, pregnant women and the elderly)	- Focus Groups and Interviews showed that in all countries, there is an absence of protocols specific to the immunization of NAMs. Procedures seem to be much more explicit concerning asylum seekers, however, public policy institutions have not considered rights to vaccination specifically for NAMs. - Participants in Spain emphasised the importance of universal healthcare for all. - Even though Germany, Greece and have free access to vaccinations, NAMs from Third countries (not including the EU) are not prioritized mainly due to	- In Greece, a prioritization is provided for vaccines against diseases that can cause outbreaks / epidemics, i.e. MMR. - In Cyprus, NAMs from Third countries receive standard vaccinations in reception camps (polio, tetanus and diphtheria), but this process is characterized by long delays.

[6] For more details on references from the desktop literature review see Appendix 3 and for details on results from qualitative research see Appendix 4.

among host countries and may influence their access to vaccination across countries.		a lack of availability of vaccines/ vaccine flow.	

Economic

Table 4 Economic barriers and solutions found for Entitlement

Desktop Literature review		Qualitative Research	
Barriers	***Solutions***	***Barriers***	***Solutions***
In some host countries there is a lack of clarity on whether there is a cost/fee for people who are not enrolled in national health system/ insurance plans - Many migrant groups do not have access to free health care and vaccines upon arrival in some host countries.	None from literature	- Malta stresses a financial barrier concerning the immunization of Third country nationals who apply for work permits, since vaccinations are needed when applying for a job. Work permit seekers are urged to pay for vaccinations themselves.	Nothing relevant among key findings from qualitative research

Reachability of people to be vaccinated

In this hub are reported administrative/organisational barriers and solutions that can modify the reachability of NAMs to be vaccinated.[7]

Administrative/Organisational

Table 5 Administrative/organizational barriers and solutions found for Reachability

Desktop Literature review		Qualitative Research	
Barriers	***Solutions***	***Barriers***	***Solutions***
- The lack of identification documents is a significant obstacle for reaching migrants. Many refugees and migrants, through fears of legal problems, may have chosen not to keep, or have lost, any personal documentation including vaccination records. - Difficulty of identifying migrants from health registries because they often lack registration with the NHS or health insurance - Difficulties in receiving and understanding invitation letter: even if migrant groups are on the register they have a high mobility and may not understand the invitation letters sent to attend for vaccination - Lack of procedure to reach migrants at community level. Only half of the EU countries had policies and procedures to ensure migrants' access to vaccination at the community level, while all have it only at point of entry - Difficulties with NGOs, which often support	- Flexible solutions to overcome problem of identification -Periodic Intensification of Routine Immunization (PIRI) services in target areas could be a potentially important intervention and a useful approach for reaching marginalized people who may remain underserved by routine service delivery and primary health care -To facilitate community access and proximity health options, it is necessary to identify different vaccination solutions according to specific situations, always giving priority to the proximity of public health options -For migrant reception centres, possible options are: ● in the same reception centre (preferably for large centres) through existing services or through the use of mobile units or ● at vaccination centres (in the case of small reception centres), possibly including	- Locating NAMs to organize immunizations seems to be a challenging procedure for all countries, since there is lack of well-organized immunization records/data bases for the specific population. - The main challenges concerning vaccination are when NAMs start to live in the wider community: ● They often move to another country (this is especially true for first entry countries) ● They often change address or move to another region without informing about their new address hence invitation letters for booster shots (where available)	- NAMs for immunizations depends on: ● Migrant status: asylum seekers can be easily reached in reception centers, when first entering the country. ● Age of NAMs: children can be reached through schools, as certain vaccinations are mandatory/encouraged when enrolling in schools. ● Gender: female NAMs can be reached and informed about vaccinations (infant, child and adult vaccination) through gynecological/maternity visits and reproductive clinics/ programs. - There is need for development of **proximity strategies** based on best practices in each country: ● Germany: need to develop closer collaboration among public policy officials and NGOs ● Greece: information and sensitization of the particular population about vaccinations is an important milestone towards their compliance, and the

[7] For more details on references from the desktop literature review see Appendix 3 and for details on results from qualitative research see Appendix 4.

communication and access for refugees and asylum seekers, in providing ongoing care and to coordinate with other organisations	accompanying services and linguistic and cultural mediation. -Utilise mobile clinic/team as vaccination centre -Networking and coordination with NGOs. There is a need for improvement in communication with asylum seekers and coordination between agencies within and beyond the medical system. - Reach high-risk groups through advocacy, communications and supplementary immunization, including door-to-door initiatives, such as checking of immunization cards, distribution of information materials (in native languages) and vaccination campaigns.	cannot be delivered. ● Thy often change contact mobile numbers hence messages concerning up-coming immunizations, immunization certificates cannot be sent to them. ● Undocumented NAMs avoid visiting vaccination centers, due to fear of deportation. ● Lack of culturally sensitive and language specific campaigns for NAMs about immunizations.	continuation of vaccination on their own free will. ● Italy: regarding proximity strategies, it is important to focus on the construction of "vaccination pathways" and not only on the provision of single services. Moreover, all sectors of the health system (even administration and registration) that come into contact with NAMs, should be able to promote and encourage immunization. Vaccination mandates could also be extended beyond schools, to other organizations such as the police, labor offices etc. that could require evidence of vaccinations. ● Cyprus: the involvement of health visitors and nursing personnel in informing NAMs about immunization after receiving training on cultural competence. ● Poland: adequate, culturally competent and easily accessible information provided to NAMs about vaccinations i.e. translated leaflets, materials, and information sessions.

Adherence (vs Hesitancy) to vaccination

As general solution, **common also to other hubs,** there is the provision of **tailored training to health professionals** to implement new strategies and approaches for underserved and marginalised populations (training on planning and implementing tailored approaches, communication skills, engaging existing community structures and civil society organisations in planning and implementing tailored approaches).

In this hub are reported organisational/logistic, economic, legal, psycho-social, cultural/linguistic barriers and solutions that can influence the adherence of NAMs to vaccination.[8]

Organisational/Logistic

Table 6 Organisational/logistic barriers and solutions found for Adherence

Desktop Literature review		Qualitative Research	
Barriers	***Solutions***	***Barriers***	***Solutions***
- Health professionals may lack awareness and experience in providing (correct) advice on health care and vaccination for refugees and migrants - Decentralised health systems and lack of coordination among local authorities and international stakeholders may have disproportionate negative effects on refugees and migrants; - In some host countries (i.e. UK) migrants groups face barriers to access to primary care and vaccinations due to lack of access points; - Transportation issues are observed to be other barriers to immunisation - Registration through dedicated (online) systems are often required prior to vaccination, which can be confusing, and which often also imply other barriers (technological requirements, language barriers, fear of tracking tools that may lead to arrest or deportation)	- Organisational solutions proposed are focused on ● tailoring immunisation services ● strengthening communication and social mobilisation toward specific population targets ● developing proximity approaches and the use of bus as mobile clinic buses ● actively engaging with affected communities - Strengthen collaborations with local government, relevant charities and community groups, civil society groups, social care services, public health teams and health professionals to develop engagement strategies with migrant communities.	Nothing relevant among key findings from qualitative research	- Developing synergies between NGOs active in the field and public organizations responsible for NAMs vaccination, i.e. in Greece information sessions are usually organized by NGOs active in the field, with the assistance and cooperation of the social services of camps/ reception centers that are more familiar with beneficiaries and can inform them accordingly; in Germany NGOs are linked to a specific contact person at state level, and therefore vaccination efforts of migrants run smoothly. - Organizing and implementing information sessions with community leaders about the importance of specific vaccines. It seems that community leaders have an important impact on beneficiaries and affect adherence (vs hesitancy) to vaccination. - Use of mobile units or “mobile vaccination busses” - Progressively involve all members of a household in vaccinations. Starting usually from the child reach out to other members so progressively involving all the family members in vaccinations. - Providing assistance / support during actual vaccination ● For vaccinations taking place in camps (e.g. mobile units or

[8] For more details on references from the desktop literature review see Appendix 3 and for details on results from qualitative research see Appendix 4.

			vaccines performed by medical services inside camps), health professionals suggest the following best practices in combination or individually: (a) door-to-door visits in order to inform beneficiaries about the upcoming vaccination, (b) a note on their door about the day and time of the event, (c) sending mobile messages (sms) to all beneficiaries who have a mobile phone, (d) posting on social media (camp page, community leaders). All this information needs to be translated into migrant languages. ● Based on existing vaccination records that often organizations seem to keep (camps, NGOs, national public services): (a) informing beneficiaries about vaccinations and booster vaccinations –letters need to be translated in the NAMs languages, (b) making appointments, if needed, (c) escorting and interpreting, if required. - Vaccinations need to be promoted by all services caring for migrants. A particular quote emphasizes this. A participant says for example when patients visit a facility for an issue irrelevant to vaccination an information leaflet or brochure can be provided regardless of the fact that vaccination was not the reason for visiting. - Linking vaccinations to employment, as reflected with in the COVID experience and the “green pass”. - Another trigger for vaccination, for those migrants who aim at continuing their journey to other European countries, is making vaccination compulsory in order to be able to continue their journey.

Economic

Table 7 Economic barriers and solutions found for Adherence

Desktop Literature review		Qualitative Research	
Barriers	***Solutions***	***Barriers***	***Solutions***
- In some host countries, migrant groups have experienced delays in access to care, and therefore low vaccination rates, due to inability to pay for care and vaccines. - Direct health costs and additional external costs associated with seeking care can dissuade migrants from asking for vaccination.	- Health system should ensure that migrants and refugees benefit from easy access to the vaccines offered free of charge under the national vaccination schedule. The integration of free or affordable vaccination services would be more effective in increasing the participation of hard-to-reach communities.	Nothing relevant among key findings from qualitative research	Nothing relevant among key findings from qualitative research

Legal

Table 8 Legal barriers and solutions found for Adherence

Desktop Literature review		Qualitative Research	
Barriers	***Solutions***	***Barriers***	***Solutions***
- Reporting undocumented migrants to immigration authorities and, more in general policies of other government sectors (such as immigration, justice or interior and home affairs) on deportation of irregular migrants also influence utilisation of vaccination services by refugee and migrant groups	- Setting up vaccination centres that do not require formal identification - Coordination among governmental agencies from health and immigration sectors will be needed to ensure vaccination programs are not used by immigration authorities for tracking or enforcement	Nothing relevant among key findings from qualitative research	Nothing relevant among key findings from qualitative research

Psycho-social

Table 9 Psycho-social barriers and solutions found for Adherence

Desktop Literature review		Qualitative Research	
Barriers	***Solutions***	***Barriers***	***Solutions***
- Lack of motivation and the low risk perception: immunisation is something they do not usually go through in their minds due to competing priorities (new arrivals need to balance finding employment and housing, alongside getting catch-up vaccines) - There is a stigma around some infectious diseases and fear of accessing care due to precarious immigration status. Fear of being asked of their legal status or being identified were always present, affecting the everyday life of the migrant families and children with no legal documentation - Mistrust in the health and vaccination system. Some migrant groups (e.g families, workers) may have well-founded mistrust of government and health organisations (based on previous experiences). This lack of trust in the health system causes reluctance to consent	- Ensure all that vaccination is voluntary, confidential, non-stigmatizing - Communication campaigns should be organized to clarify the benefits of vaccination and the total lack of legal consequences in order to avoid the fear of repatriation or removal - Organize vaccination through trusted community health workers or non-profit organisations to avoid fear of legal consequences	Nothing relevant among key findings from qualitative research	In order to overcome these barriers participants emphasize the need for building relationships of trust by using mediators for example as well as community leaders who can boost vaccination uptake. These strong social figures can support.

Cultural/Linguistic

Table 10 Cultural/Linguistic barriers and solutions found for Adherence

Desktop Literature review		Qualitative Research	
Barriers	***Solutions***	***Barriers***	***Solutions***
- Migrants may lack awareness of vaccines' existence. The lack of knowledge of the health system, vaccination schedule and relevant VPDs in the host country are	- Health promotion and educational programs are especially important for refugees and migrants because often they are not familiar with the health and vaccination systems of the host country and so lack knowledge of what kind of support is available,	Nothing relevant among key findings from qualitative research	- Training on how (a) to communicate the need for vaccinations to migrants as well as (b) how to discuss fears, misunderstandings or misinformation.

important barrier to vaccination uptake - Migrants may have misinformation and beliefs about infectious diseases and their risk and transmission factors that hinder the acceptability of screening and vaccination. - Belief that vaccine is unnecessary and optional. Traditional beliefs of migrants may play a role in the value placed on outcomes of infectious disease interventions - Concern about side effects and safety. Some parents are mainly concerned that their children would develop high fever after immunisation and needing medical attention. Others may also worry about the pain associated with the injection. - Several barriers about the lack of cultural competence of the services are reported in literature - The lack of appropriate language aids is a major barrier for access to the health system by refugees and migrants. Poor information resources in their native language can reduce confidence and ability to access vaccination, as well as confidence and adherence to recommendations	whether they are entitled to it and how they can access it - Specific subgroups of migrants should be taken into account in the implementation of the general measures proposed to overcome linguistic barriers, which include the use of information material translated into different languages, staff training and the activation of services tailored to the specific needs of migrants and the identification and training of foreign cultural mediators to inform and motivate migrants on access to vaccination services - Information regarding immunisation and informed consent should be available in multiple languages - Policy-makers must guarantee a culturally competent healthcare service? - The cultural competence and cultural awareness of healthcare practitioners and vaccinators need to be strengthened to adequately respond to the needs of refugees and migrants: the more awareness among practitioners about the cultural background of their patient, the higher the quality of care they can provide. - Generating and maintaining demand for immunisation services and addressing vaccine hesitancy will require use of traditional and new social communication platforms, optimising the role of front-line health care workers, identifying and leveraging immunisation champions and agents of change, tailoring immunisation		

- Professionals or administrative personnel who are not adequately and culturally trained (they are not only likely to contribute to a lower quality of service, but also may assume detrimental inappropriate behaviours and stereotypical attitudes towards migrants)	programme advocacy and communication to susceptible populations, including mobile, marginalised and migrant populations, and communicating the benefits of immunisation and the risks presented by VPDs - Communication and advocacy strategies regarding the benefits and safety of vaccination, including engagement of mainstream and social media and other relevant channels, should be tailored to ensure that evidence and information reach target refugee and migrant communities. - Direct involvement of immigrant communities and cultural mediators and / or third sector associations to encourage the transmission of key messages for prevention in the languages understood by migrants and in a culturally appropriate manner and to prevent the dissemination of incorrect information - The use of cultural mediators can be helpful in facilitating productive cross-cultural patient–provider dialogue and should be encouraged within immunisation programmes. Such mediators have been found to be effective educators, health promoters and health-care system navigators for refugees and migrants, mitigating key barriers to care.		

Achievement: execution and completion of vaccination

In this hub are reported organisational/logistic and linguistic/cultural barriers and solutions that can play a crucial role in the execution and completion of vaccination of NAMs.[9]

Organisational/Logistic

Table 11 Organisational/Logistic barriers and solutions found for Achievement

Desktop Literature review		Qualitative Research	
Barriers	***Solutions***	***Barriers***	***Solutions***
- Specific documents are often required for vaccination, creating a spectrum of barriers that IOM graduates from low to high; ● low: some countries will accept any form of ID, valid or not, expired or not, and from anywhere, only to verify the identity; ● medium: other countries require specific types of documents (e.g. residence permit, host country insurance cards), which constitutes a higher barrier, but those documents are accepted even if expired; ● high: other countries require specific types of documents that are still valid. - Unknown vaccination history and lack of vaccination records - Many vaccines require booster doses and timed intervals of weeks or even months to get	- Administrative flexibility to facilitate the access to vaccination to those who have no registration with the NHS or valid documents has been adopted in several countries for COVID-19 - If the previous vaccination documentation is difficult to interpret because of language barriers, and there may be doubts about its authenticity, it may be preferable to ignore the written record and repeat the vaccination. - If previous immunisation is not available, immigrants should be considered susceptible to the disease in question, triggering the age-appropriate vaccination schedule - The reception centres are an ideal setting to offer full or catch-up vaccination. The operational mechanism for vaccination should essentially be time accommodation dependent, which may require a minimum of 6-7 months. For migrants who may move across borders in their migration, high-quality data need to be collected and shared between countries to facilitate completion of vaccination doses. - Strengthening partnerships and implementing initiatives across countries of arrival, transit and destination to develop and share better	Key findings for execution and completion do not differ to those presented for adherence and hesitancy.	Key findings for execution and completion do not differ to those presented for adherence and hesitancy.

[9] For more details on references from the desktop literature review see Appendix 3 and for details on results from qualitative research see Appendix 4.

full immunisation. Ensuring appropriate follow-up and the completion of vaccination schedule within and across countries is difficult when dealing with migrants. - Lack of recording of vaccination doses and information is not shared with risk of duplication of vaccination doses - Vaccine price and limited supply doses may affect particularly marginalised communities - Health system capacity: lack of financial and human resources - Fragmented health systems and diverse models of care, with separate pathways for screening and vaccination of refugees and migrants, can create confusion for both patients and health-care providers especially when lead with large influx of refugees and migrants - Organization and opening of services is inconvenient, considering the need of multiple appointments; lack of time for dedicated outpatient visits.	documentation in order to ensure immunisation and avoid revaccination - Innovative Solutions and tailored approaches - The importance of a coordinated response to ensure vaccination provision is prioritised in situations of sudden large influxes of refugees and migrants. Intersectoral stakeholders should be engaged in the development of action plans to improve country preparedness, and public–private partnerships might be used to address issues of vaccine supply to cater for sudden influxes of refugees and migrants. Additional financial and human resources should be available for appropriate service delivery strategies - A single-dose vaccine option may be preferable for (e.g. seasonal workers) who move between locations/states - Extended clinical hours, out-of–hours clinics, drop-in centres and pharmacy-based delivery of vaccination can provide opportunities for administering vaccination and reduce socioeconomic barriers to accessing care (within immunisation service delivery regulations and laws in the country) - The Health Service Executive's active recall system for the primary immunisation programme. Clinics for the school immunisation programme held over the summer for those children who may have missed vaccination day.		

Linguistic/Cultural

Table 12 Linguistic/Cultural barriers and solutions found for Achievement

Desktop Literature review		Qualitative Research	
Barriers	***Solutions***	***Barriers***	***Solutions***
- Language barriers and lack of interpreters for informed consent - Insufficient training among Health Professionals - Staff shortages, including for cultural mediators and interpreters, who are critical for establishing effective and inclusive services, act as barriers to implementation of national immunisation policies and limit systematic collection and evaluation of data for corrective actions	- Communication services (i.e. cultural mediators, interpreters) for health care providers should be available, or improved, for the promotion of an inclusive and culturally sensitive health system - It is necessary to provide training opportunities for Health Professionals to improve their awareness of the catch-up needs of refugees across all age groups. Resources such as online immunisation calculators, refugee specific guidelines and e-learning could potentially equip Health Professionals with the relevant skills and knowledge and ultimately make implementation of catch-up vaccines for this group easier. - Train immunisation managers and service providers.	Key findings for execution and completion do not differ to those presented for adherence and hesitancy.	Key findings for execution and completion do not differ to those presented for adherence and hesitancy.

Evaluation of vaccination intervention

In this hub are reported organisational barriers and solutions that can influence or avoid the evaluation of vaccination intervention.[10]

Organisational

Table 13 Organisational barriers and solutions found for Evaluation

Desktop Literature review		Qualitative Research	
Barriers	***Solutions***	***Barriers***	***Solutions***
- Lack of robust and standardised data Information on the effectiveness and cost-effectiveness of vaccination programmes targeting migrants, and the practical implementation challenges facing these interventions	- Track each individual's immunisation status, preferably through introduction of electronic immunisation registries that are well integrated within health information systems and leverage other relevant civil registries. - Electronic medical records, interlinking national immunisation registers and data sharing along migratory routes can contribute to monitoring and planning of vaccination of refugees and migrants. - Setting up or expanding immunisation information systems to monitor vaccination coverage - Further research would be valuable in order to better understand and evaluate acceptability and accessibility of migrant communities toward interventions - Immunisation information systems, population-based immunisation registries, record administered vaccinations to support immunisation decision-making at the local level and to guide policies and programmes for public health operations.	- Across all countries, there is lack of national, regional or local data bases to record vaccinations as a way of monitoring vaccination schedules and avoiding unnecessary vaccinations or missing booster vaccinations (for Greece, Malta and Poland the specific barrier was also mentioned in the section about reachability of NAMs) - In all countries apart from Germany, different actors involved in the immunization of NAMs seem to keep their own records and data, however they use them internally.	- The need for improving immunization data registration is emphasized by all participants. - Moreover, there is a need for data collection, in order to evaluate relevant initiatives and promote best practices – advocate them to policy makers, and disseminate them to different actors. - In Germany a collaboration seems to be in effect among different bodies in terms of monitoring vaccination status of NAMs, schedules as well as advocate and disseminate best practices.

[10] For more details on references from the desktop literature review see Appendix 3 and for details on results from qualitative research see Appendix 4.

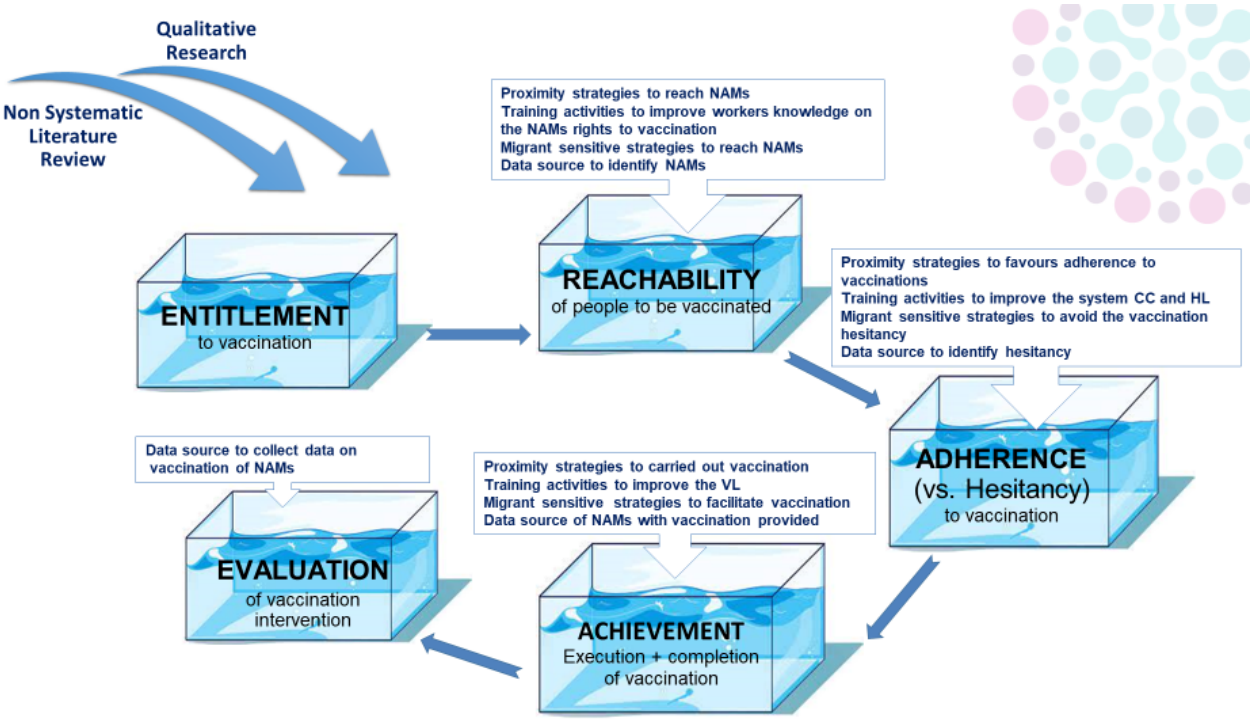
CONCLUSIONS

The results of the literature review, the findings of the qualitative research and several stages of logical conceptualization by the research team have enabled to include all aspects, relevant for the NAMs vaccination process, in a General Conceptual Framework. The entire process has been schematized to better focus on the different segments, so that the details of each juncture can be more closely analysed and the different stakeholders, with whom each of them interacts, more clearly highlighted.

Furthermore, in the re-reading of the results it became evident that most of the intercepted reflections concern migrants in their entirety and only some are referable to NAMs. With respect to this in fact it can be seen that the reference to the time of arrival is not present in the different hubs and only rarely in the research findings.

The methodology that involved the integration of different research tools (theoretical conceptualization, desktop literature review, focus group, personal interview) permitted a deepening of the processes related to the conceptual schema produced. The integrated analysis of the findings produced a 'fill-in' of the conceptual hubs, previously identified in a theoretical way, producing a greater amplitude, depth and complexity of the dynamics that link the logical hubs of the NAMs vaccination process. In particular, there was a focus on the barriers and solutions that both the literature and the qualitative research identified as relevant in the vaccination process with the aim of making the research more linked to day-to-day operations and practices.

Figure 9 Critical analysis of findings and identification of their distinctiveness in each hub



After the initial draft has been filled in and critically reviewed with the results of the non-systematic literature review and qualitative research, the GCF is no longer just a logical framework, but becomes a pathway that can actually strengthen health systems and make vaccination more guaranteed and equitable. Importantly, we need to move from a neutral reading to a critical re-reading, so that the GCF is no longer just a diagram.

However, since this is the schematization of a process, it is clear that most of the considerations of the actors, the recommendations of the institutions, and the literature produced on the subject involve all or most of the process and not just the single segment represented by each hub.

In particular, as noted in Figure 9, there are some strategic lines involving multiple hubs:

- **Proximity strategies**: public health strategies focused on the relationships between public institutions, private social organizations and communities in the area, aimed at promoting access to services, through the active offer of health services, the orientation to services, the creation of pathways for taking in charge and the involvement of the population in empowerment processes. Characteristic features of the experiences and proposals present in the findings with respect to this approach are: networking, multidisciplinary approach, use of itinerant teams, use of cultural mediators, and awareness-raising of providers. These strategies inform the vaccination process and take on a specific profile in each hub, characterizing the specific actions planned in reachability, adherence and achievement.

-**Training courses for providers**: the skills and competencies of providers involved in the vaccination process appear as a strategic variable in the research findings. Training, understood as a continuous process of learning and updating, emerges as a key element in strengthening the health system and all other sectors that may be involved in vaccination. Training emerges as both a prerequisite for the system's ability to reach NAMs, especially those in the hard-to-reach groups (reachability), and for the ability to offer and promote vaccinations, particularly also in countering vaccination hesitancy (adherence), and also in the ability to know how to carry out vaccinations (achievement). It is emphasized that training is also a key element in the development of proximity strategies and that it must involve all actors touched by the issue of vaccination.

- **Migrant sensitive approach**: the ability to promote, organize and offer vaccination with a sensitivity to the differences migrants may have. Particularly important is the ability to recognize the different situations and the different needs related to them not only with respect to being a migrant, but also with respect to age, gender, legal status, economic status, etc... It is necessary to invest in a multidisciplinary and multi-sectoral training and retraining to strengthen the migrant-sensitive approach.

- **Data source**: Improving data collection of vaccination of migrant populations is a crucial point in terms of developing health policies and delivering best services. Hub-specific Standardised Operating Procedures (SOP) could improve the quality of the vaccination process by making the information more shareable within information systems at any level. Access to disaggregated data strengthens the evaluation for each identified hub and then strengthens the vaccination process in that hub. Particularly important is the registration of vaccinations and linkage of different databases for the main characteristic of the target populations: mobility.

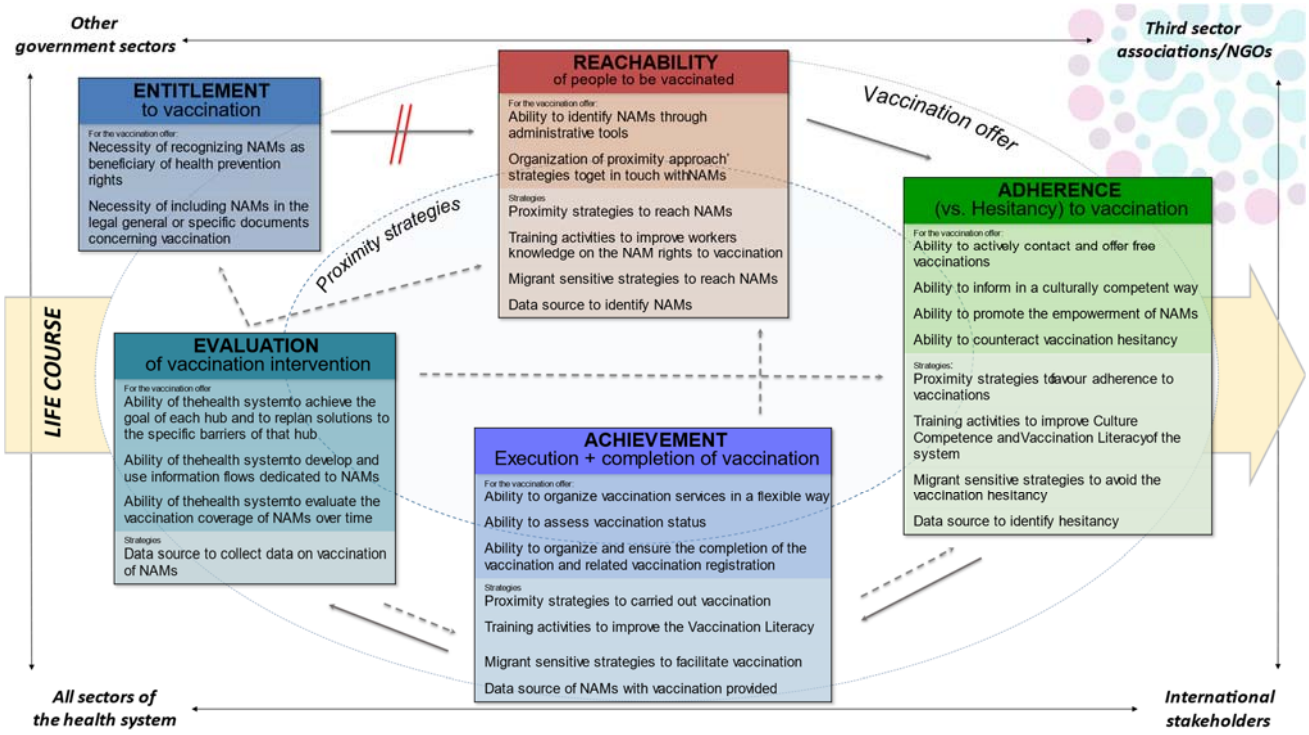
Despite the heterogeneity and breadth of the results of the analytical work, an attempt has been made in Figure 10 to graphically summarize the overall picture obtained, integrating some elements with respect to the starting outline.

Starting from the edges of the figure, in **each corner** there is a group of **stakeholders** involved, including the different levels, connected by circular arrows, which show how the entire vaccination process must be 'embedded' in the relationships established and structured between the four points.

Second, two almost **overlapping ovals** were drawn, referring to the domain of vaccine supply and vaccine supply imprinted by the proximity strategies, described above. The idea is to emphasize how the barriers, solutions and recommendations that emerged from the research are to be related to both the structural vaccine supply of national prevention plans and the vaccine supply that targets hard-to-reach populations.

Another relevant element that emerged particularly strongly from the qualitative research is the importance of the **life course approach,** which graphically becomes a large arrow involving all hubs and domains. Age and gender, and to a lesser extent migration profile, proved to be the variables that most influence the match between health services and NAM.

Figure 10 GCF including cross-hub strategies and approaches



In Figure 10, each box represents what each hub represented in the draft conceptual framework (see Figure 3), supplemented with the results of the research and critical reworking. Each box then lists the elements and skills considered essential (darker shade) and the strategies common to several hubs (lighter shade).

The **Entitlement** box intended to encapsulate 'what for whom', a box essential to the initiation of the whole process, highlights the necessity of recognizing NAMs as beneficiaries of health prevention rights and that of including NAMs in the legal general or specific documents concerning vaccination.

The second **Reachability** box, which was related to 'how to whom', is consolidated through the use of some practices and strategies: the ability of the health system to identify NAMs through information flows, the importance of activating pathways of training to improve providers' knowledge of NAMs' rights to vaccination. The migrant-sensitive strategies to reach NAMs and the outreach strategies to reach NAMs are also present. They call out more prominently the importance of collaborations between the health system and other actors, particularly NGOs, the importance of the involvement of different professions beyond those that are exclusively health-related, and the necessity of the involvement of other sectors (such as schools, labor offices, residence permit offices) in intercepting newly arrived migrants and promoting vaccination.

In the **Adherence** box that framed ‘how for what’, some health system skills useful in strengthening the offer and the adherence to vaccination of migrants are defined. These skills involve both structural components, such as free vaccination and the ability to contract hesitancy, and what we described as proximity strategies.

Regarding the **Achievement** box, indications and suggestions of ability to organize vaccination services flexibly, ability to assess vaccination status and ability to organize and ensure vaccination and related registration are collected.

Finally, there is the box on **Evaluation**, which is also strategic in evaluating all the previous steps and especially emphasizes the importance of a circular approach based on a continuous monitoring system that can turn the system back to the point where a barrier was found.

Further steps in the process should evaluate whether the vaccination services have considered all the stages/steps of the vaccination process and its limitations; whether the evaluation results have been

communicated to the relevant authorities; whether the satisfaction of NAMs with the vaccination service has been measured.

In conclusion, it should be emphasized that the logical framework cannot be used in a neutral way, as it would otherwise be a simple map.

The process represented in the GCF essentially involves three dimensions, crossing the 5 hubs :

- Planning *[entitlement/reachability*]
- Offer [*reachability/adherence/achievement*]
- Evaluation *[reachability/evaluation]*

For the process to be as fluent and effective as possible, each of these dimensions must have certain qualities. These qualities influence and direct the process, within the various hubs, to truly strengthen health systems and make vaccination more guaranteed and equitable.

Planning must be ***inclusive.*** Inclusion of NAMs in planning documents and application procedures has to be always considered.

Offer must be ***active.*** It is the health system that actively has to propose vaccinations, not that passively responds to a NAMs request. In particular, ***free*** provision is the only way to overcome the economic barriers.

The offer should be ***co-operative*** because there is a plurality of actors involved (government, civil society, NGOs) that have to find forms of collaboration and agreement.

It is important that the provision of health prevention be ***autonomous and independent***, and there should be no legal consequences for migrants who are not in good standing with their residence permits.

The offer must also be characterized by organizational ***flexibility***, especially in the development of proximity strategies, through the lines of outreach, a system of mediation involving the entire organization

To strengthen the offer, it is imperative to maximize the competencies of the health system. It is necessary to invest in training and upgrading with a multidisciplinary and multi-sector mode to strengthen both the ***system's health literacy*** and the ***migrant-sensitive approach***.

Evaluation must be ***effective.*** An effective evaluation should be based on a national common recording system and include uniform accuracy of data collection and recording in the whole country. However, particular attention should be paid to data disaggregation and the issues related to the privacy.

Finally, vaccination to NAMs fits fully within the domain of health promotion. In this sense, it is useful to highlight how vaccination to NAMs calls for the collaboration of a plurality of sectors and actors and it becomes necessary, therefore, to adopt an intersectoral and multi-stakeholders approach within which the health system must play a leading, directing, **stewardship role.**

Throughout the qualitative research it has become evident that there is an urgent need to create and adopt at country (and also EU level) **Standard Operational Procedures (SOPs)** for the vaccination of NAMs. This will allow all stakeholders involved to know what to do, how to do it and with whom it is important to collaborate.

In fact, as national health systems, as well as migrants' rights and organisation of reception, differ between countries, there is no 'one size fits all' model. To make this GCF useful in everyday vaccination and to improve vaccination coverage among migrants, it is therefore recommended that SOPs be drawn up at the national level, implemented and followed up by all relevant health services. SOPs should cover all aspects/phases of vaccination, e.g. regular information campaigns for migrants, consistent mediator training, vaccine delivery, vaccine registration.

APPENDIX 1 - Protocols for desktop non-systematic review to identify system barriers (legal, linguistic, cultural, logistic) to immunization of NAMs and solutions already implemented to overcome

WP4 – Immunization guidance, reception & vaccine offer systems for NAMs and related barriers: a conceptual framework

The work of the WP4 will guide the implementation of the subsequent WPs. It is a crucial step for the project as during this phase an updated description of the existing situation in each of the consortium countries concerning the reception systems and vaccination systems for NAMs will be provided. The consortium will conduct desktop review and original research (qualitative participatory research) to identify country specific system barriers and relevant solutions. The results will be critically analysed and organized in a General Conceptual Framework, intended to be useful also for other EU countries not participating to the project. The WP4 has the following two Specific Objectives.

Specific Objective 1: To describe existing immunization guidance and the reception and vaccination offer systems for NAMs in consortium countries

Specific Objective 2. To characterize the specific system barriers that hinder the immunization of NAMs and propose possible solutions

The work of this WP is divided into 5 tasks, Task 4.1 relates to the Desktop review object of this protocol.

Task 4.1 Desktop review on guidance for and barriers to immunization of NAMs

Desktop non-systematic review of European and national level guidance and recommendations (WHO, ECDC, peer reviewed publications and grey literature) on immunization offer and practice for NAMs. The review will also search for barriers to the immunization of NAMs. The WP leader, with the support of a panel of subject matter experts from the consortium, will develop a protocol that will include the definition of system barriers and in particular the definition of legal, linguistic, cultural and logistic barriers, caused by the social and political contexts that NAMs face. Based on these definitions, all partners will collaborate to search at country level for existing information on these aspects in their respective countries in the last 10 years. The task will provide information and guidance to be used in the subsequent WP tasks. The WP leader (ISS) will carry on the review in collaboration with partners.

In order to fulfil these tasks the following methods will be used:

Desktop literature review of existing research. Classical desktop literature review will be implemented in order to describe the **state of the art of guidance and practice recommendations** on immunization of NAMs at European level and in each consortium country.

Desktop literature review will be implemented, also at country level, to identify existing research concerning **system barriers** at legal, linguistic, cultural and logistic level **and solutions** already implemented to overcome them.

Access to Vaccination
for Newly Arrived Migrants

ISTITUTO SUPERIORE DI SANITÀ
NATIONAL CENTRE GLOBAL HEALTH

DIPARTIMENTO DI SANITÀ PUBBLICA E MALATTIE INFETTIVE
SAPIENZA UNIVERSITÀ DI ROMA

Non-systematic review protocol of system barriers (legal, linguistic, cultural, logistic) to immunization of NAMs and solutions already implemented to overcome them

In addition to the barriers (legal, linguistic, cultural, logistical, etc.), the review will consider solutions to overcome these barriers and implementation challenges.

A specific section of the search will be dedicated to the analysis of specific policies and practices in place for vaccination against COVID-19 disease. As such, campaigns present different and specific characteristics and challenges it is of relevance to be able to document in the results what has emerged in terms of specific approaches proposed and/or implemented to ensure equity in terms of access to COVID-19 vaccines. In addition, it is thought that given the specific push to consider underserved populations in times of the pandemic, a number of very critical lessons could be learnt that can be transferred to other routine vaccinations as well, applying the same tools/methods that may have worked for vaccination against COVID-19. As the latter is high on the political agenda, suggestions could be made from the analysis as to how policy approaches could change and learn/be adapted from the recent experiences.

a) system barriers to immunization of NAMs and solutions implemented

Research strategy for Medline: (immunization OR vaccination OR vaccination plan OR vaccine) AND ((migrant OR newly arrived migrants OR undocumented migrants OR irregular migrants OR illegal migrants OR asylum seekers OR foreigners) OR (regular migrants OR documented migrants OR refugees)) AND (barriers OR access OR obstacles OR difficulties OR accessibility OR utilization OR delivery OR uptake OR supply OR hard-to-reach OR equity OR acceptance OR hesitancy OR facilitator OR solution OR effectiveness OR best practice)

Keywords for other websites: immunization, vaccination, vaccine, migrants, asylum seekers, refugees, foreigners, barriers, access, obstacles, difficulties, accessibility, utilization, delivery, uptake, supply, hard-to-reach, equity, hesitancy, solution, effectiveness, best practice

b) Focus on COVID-19 vaccination

Research strategy for Medline: (immunization OR vaccination OR vaccination plan OR vaccine) AND ((migrant OR newly arrived migrants OR undocumented migrants OR irregular migrants OR illegal migrants OR asylum seekers OR foreigners) OR (regular migrants OR documented migrants OR refugees)) AND (barriers OR access OR obstacles OR difficulties OR accessibility OR utilization OR delivery OR uptake OR supply OR hard-to-reach OR equity OR acceptance OR hesitancy OR facilitator OR solution) AND (COVID-19 OR Sars-Cov-2)

Keywords for other websites: immunization, vaccination, vaccine, migrants, asylum seekers, refugees, foreigners, barriers, access, obstacles, difficulties, accessibility, utilization, delivery, uptake, supply, hard-to-reach, equity, hesitancy, solution, effectiveness, best practice, COVID-19, Sars-Cov-2

Website to explore	
• MedLine-PubMed, for a search in the scientific literature	• EC - European website on integration
• WHO	• EC – European Observatory on Health Systems and Policies
• WHO Europe	• EUPHA
• WHO PHAME Public Health Aspects of Migration in Europe	• PICUM (Platform for International Cooperation on Undocumented Migrants)

• UNHCR	• Reliefweb
• UNICEF	• COVAX
• United Nations High Commissioner for Human Rights (OHCHR)	• GAVI
• CMW (UN Committee on Migrant Workers)	• MSF Medicins sans Frontieres
• UN Special Rapporteur on the Human Rights of Migrants	• Project PROMOVAX http://www.promovax.eu/
• IOM	• Project CARE–Common Approach for REfugees and other migrants' health" http://careformigrants.eu/
• ECDC	• Mig-HealthCare Project https://www.mighealthcare.eu/
• Council of Europe	• Project MyHealth http://www.healthonthemove.net/it/
• European Commission	

Inclusion Criteria

The following criteria, not included in the search strings, should be applied during the selection of relevant documents to be selected:

- **Time limits**: since 2014 when, given the larger influx of NAMs in EU, relevant analyses and documents in the field were available in the European context, taking into consideration only the most updated documents in presence of several documents of the same kind.
- Documents included must refer to **newly/recently arrived migrants** based on the definition used for the project.
- Documents must refer on **EU Countries.** However, as regards the barriers and possible solutions, it will also be useful to examine documents referring to non-EU developed countries, which could present situations applicable also in the EU context.

Division of Task between WP4 leader and consortium partners

The WP4 leader will perform the literature and document review in English, while the consortium partners will conduct the review in local language as explained in the next paragraph.

Guidelines for consortium partners

In order to find scientific articles or documents not accessible in English, each referent of the **consortium Countries will be asked** to integrate the search with materials in local languages or contained in websites not taken under consideration.

The **kind of documents** in local language to be searched for are:

- Scientific literature
- Guidance
- Guideline
- Bulletin

- Report
- Legislation
- Policy document
- Standard operating procedure

The keywords, to be translated in local language, to guide the search are:

For system barriers to immunization of NAMs and solutions implemented

immunization, vaccination, vaccine, migrants, asylum seekers, refugees, foreigners, barriers, access, obstacles, difficulties, accessibility, utilization, delivery, uptake, supply, hard-to-reach, equity, hesitancy, solution, effectiveness, best practice

for the focus on COVID-19 vaccination

immunization, vaccination, vaccine, migrants, asylum seekers, refugees, foreigners, barriers, access, obstacles, difficulties, accessibility, utilization, delivery, uptake, supply, hard-to-reach, equity, hesitancy, solution, effectiveness, best practice, COVID-19, Sars-Cov-2

Example of websites to be consulted for Italy

- Scientific articles in Italian non indexed in Medline
- Italian National Institute of Health (ISS)
- Epidemology for Public Health (EpiCentro-ISS)
- National Institute for Health, Migration and Poverty (NIHMP)
- Italian Ministry of Health
- Italian Society of Migration Medicine and Congress Proceedings
- Regional Health Authorities
- Salute Internazionale
- Osservasalute
- Rapporto IDOS
- Civil Society organizations: ASGI, Emergency, Centro Astalli, Intersos, Medici contro la Tortura, Médecins du Monde, MEDU, Medici Senza Frontiere, Caritas italiana, Sanità di Frontiera.

In order to transfer to WP4 leader (ISS) relevant information from the consortium Countries, **an information extraction grid in Excel is provided.**

All the information to be filled in should be translated in English.

The Excel file has the following columns (information) to be filled in:

Column name	Description
Document progressive number	Progressive identification number of the specific document
Country	Name of the consortium Country
Reviewer	Name of the operator who is conducting the search
Topic	● RECOMMENDATIONS ● BARRIERS/SOLUTIONS ● RECOMMENDATIONS/BARRIERS/SOLUTIONS
Title	Title of the document
Authors	Authors of the document

Year	Publication year
Publisher	Institution that published the document
Source/website	Consulted website
DocumentType	● Scientific literature ● Guidance ● Guideline ● Bulletin ● Report ● Legislation ● Policy document ● Standard operating procedure ● Other document type
Abstract/Summary	If available, copy/paste of the abstract/summary in English
Link to full text	Link to full text of the document
Population	Specify the subpopulation considered in the document (among NAMs as defined within the project)
Setting	Specific setting taken under consideration in the recommendation or in the description of a barrier/solution
Vaccination	Type of vaccination target of the document (i.e. all compulsory vaccination, or a specific vaccine: COVID-19, MMR, HPV, HBV …)
Recommendation	The recommendation to vaccination included in the document (one recommendation for each record of the Excel file) (max 100 words)
Comments	Any useful comment from the reviewer

NOTE THAT since each document can contain more than one barrier or solution, you must use one line of the Excel file for each recommendation or barrier or solution contained in the same document.

Only in the case that the elements (barriers / solutions) of a document are linked, they must be written on the same line of the excel file.

APPENDIX 2 - Focus Group/Interview Guide

SUMMARY

This document defines the framework for implementing the qualitative research planned within WP4 of the "AcToVAx4NAM" project and more specifically for organizing Focus Groups (FGs) and Personal Interviews (PIs).

The qualitative research is an added value to the project, which will ensure that final solutions and recommendations will be based not only on the description of the systems and the published materials (as per Task 4.1, 4.2 and 4.3) but also on experiences of the target group (here called "professionals FOR health"). The aim is to achieve the characterization of system barriers (legal, linguistic, cultural, and logistic, etc.) and identification of possible and sustainable solutions emerging through a participatory approach.

This guide sets the objectives, expected outcomes, and indicative guidelines for the local organizers and facilitators of FGs and PIs in all participating countries. More specifically, it intends to provide uniform guidance for the facilitators/moderators, in order to be able to conduct the FGs and PIs analyze the data and report the findings.

1. Focus groups and personal interviews

The aim of the FGs and PIs is to gain insight into the experiences of the participants – meaning here professionals FOR health who work with Newly Arrived Migrants (NAMs) or migrants in general in order to:

(a) identify and understand system barriers towards NAMs' immunization (legal, linguistic, cultural and logistic),

(b) explore possible and sustainable solutions at country level.

Emphasis will also be placed on the consequences of COVID-19 for the vaccination of NAMs and also on the opportunity COVID-19 has provided in the field of NAMs' immunization, if any.

During the FGs and PIs we want to deepen into (a) the experiences of professionals involved with NAMs' immunizations, and (b) the necessary cooperation between involved actors, concerning identified difficulties, and the tested or/ and proposed solutions.

According to the AcToVax4NAM project operational definition, "NAMs" include:

- Documented migrants, asylum seekers, refugees, and others forced to flee conflict, natural disasters or economic peril, as well as undocumented migrants
- A person with a different citizenship from the hosting country either from EU/EFTA Member States or Third countries
- Entered the EU consortium country in the last 12 months, (excluding tourists and short visa and permit of < 3 months) plus 12 months in case of relocation or transfer from EU countries

2. Timeline

All partners must submit their FGs and PIs reports to **Prolepsis Institute on Friday, January 14, 2022.**

3. Number of focus groups and personal interviews

Each partner country will conduct:

- ◊ **2 focus groups, and**
- ◊ **3 personal interviews.**

4. Duration of focus groups and personal interviews

- ◊ The duration of each Focus Group will be approximately 45-90 minutes.
- ◊ The duration of each personal interview will be approximately 30-40 minutes.

The above time durations are indicative and depend on the country specific circumstances.

5. Participants

Number of participants

The number of participants in each FG will be **8-10**. Therefore, the total number of FG participants per country in the qualitative study will be **16-20**. However, the recruitment of participants can be a very demanding process, hence the optimal number may be difficult to reach and therefore, each FG should aim to reach at least 6-8 participants. Yet, we are trying for the optimum participation that is, 8-10.

The total number of personal interview' participants per country in the qualitative study is **3**.

The optimal number of participants in the AcToVAx4NAM qualitative study is 19-23.

Recruitment and eligible participants

Participants can be recruited in various ways, based on the country-specific cultural and institutional context. Due to time constraints, partners could use gatekeepers and their organization's networks. Gatekeepers are individuals or organizations who have a prominent role in each target population.

FG participants include the following groups:

- o Health and social care professionals who work in the field of delivery of immunizations with special attention to migrants if possible. Their occupation could be physicians, nurses, social workers, psychologists, cultural mediators etc.

Therefore, participants need to work in the day-to-day delivery of immunization (with special attention to migrants and NAMs if possible) and could be recruited from different locations, i.e. health centres, vaccination local/ national units, NGOs, entry camps, first reception, detention, apartments, associations, shelter centers, where both children/ adolescents and adults are cared for.

<u>This group of professionals constitute the participants of the 1st Focus Group</u>

- o **Professionals, who work in managing/organizing immunization services with special attention to migrants if possible.** Their occupation could be managers, administrative staff, physicians, nurses, social workers working in managing/organizing immunization services.

Therefore, participants need to work in the management, organization and administration of the immunization services to NAMs and could be recruited from different locations, i.e. health centres, vaccination local/national units, NGOs, entry camps, first reception, detention, associations, where both children/adolescents and adults are cared for.

<u>This group of professionals constitute the participants of the 2nd Focus Group</u>

- o **Experts related to immunization planning with special attention to migrants if possible.** They could be policy makers, public health experts, actors involved in the development of the National Immunization Plan, migrant community leaders, etc.

Therefore, participants have a higher professional status and could be recruited from different locations, i.e. Ministries, Institutes of Health, Universities, regional health services, hospitals, International NGOs, Migrants' organizations etc.

This group of professionals will be the participants of the 3 Personal Interviews

Important considerations:

- **Partner-countries need to choose, if they will consider the discussion on NAMs immunization at national or local level or both taking into consideration each country's specific situation.**
- **We are interested in NAMs' immunization throughout the life course. Therefore, it is important to recruit participants, who work both with children/adolescents and adult/elder NAMs.**
- **Another important factor is the legal status of NAMs. Therefore, it is important to recruit participants who work with the different categories of NAMs as outlined in the project NAM definition.**
  - ◊ Documented migrants, asylum seekers, refugees, and others forced to flee conflict, natural disasters or economic peril, as well as undocumented migrants
  - ◊ A person with a different citizenship from the hosting country either from EU/EFTA Member States or Third countries
  - ◊ Entered the EU consortium country in the last 12 months, (excluding tourists and short visa and permit of < 3 months) ® 12 months in case of relocation or transfer from EU countries

6. Delivery of focus groups and personal interviews

On-line focus groups and personal interviews

Due to the coronavirus pandemic and in accordance to each partner country's safety guidelines, FGs and PIs might need to change to online focus groups and personal interviews. This modification does not alter the "classic" focus group/ personal interview methodology, which is described more thoroughly in the next chapters. Nevertheless, in the following section we have included empirical data that might be useful in case partners have to conduct online focus groups/ personal interviews:

- **Selection of an online platform:** Each partner organization is free to choose whichever platform they wish to use. Prior experience with online FGs has shown that Zoom is a reliable platform.
- **Demographics questionnaire and consent form:** both can be emailed to participants a few days before the online focus groups. For example, for FGs conducted in Greece, questionnaires translated into Greek and transferred into a Google Form platform.
- **Recorder:** Online platforms usually have the option of recording. Participants need to provide their consent before the use of the recording (consent form).
- **The role of the note taker:** The note taker/second moderator could also engage with the technical issues, since during the online focus groups technical limitations and problems might occur. The note taker/second moderator could effectively solve these issues. This way the conversation flow remains unaffected.

Consent of participants

Participants need to provide their consent for participation in the focus groups and personal interviews. A consent form in English is provided in **Annex 1**. The consent form needs to be translated in each partner country language. All participants need to provide a signed consent form before participating in the focus groups/ personal interview. The facilitators need to collect the signed consent forms and keep them in confidential records. For on-line focus groups/ personal interviews, the participants need to fill in the form and send it electronically.

Important information about the consent forms (Annex 1): the informed consent forms will be collected under the responsibility of each partner organization. Each partner organization should store them during the whole project ensuring all privacy related issues.

Descriptive characteristics of participants

It is important to collect some descriptive characteristics of the FG/PI participants. A descriptive questionnaire in English is provided in **Annex 2**. The questionnaire does not contain any personal information/ identifiers, such as names, e-mails etc. The questionnaire needs to be translated in each partner country language. All participants need to fill in the descriptive questionnaires before participating in the focus groups/ personal interview. The facilitators need to collect the questionnaires.

For on-line focus groups/personal interviews, partners could transfer the questionnaires into "google forms". Participants will be able to fill in the questionnaires electronically.

Important considerations about the descriptive questionnaire (Annex 2):

a) **After the completion of the fieldwork, partners should send Prolepsis an excel file without personal identification for privacy reasons, including the data of the descriptive questionnaires.**

b) The descriptive questionnaires are provided for completion at the beginning of each focus group/ personal interview. It is crucial to collect accurate descriptive information about participants' demographics. Demographics are important for the data analysis as well as research/publication purposes.

Topics of the focus group discussion/personal interviews

The main goal of the FG and PI discussions is to deepen into (a) the experiences of professionals and (b) the cooperation between the involved actors in relation with the difficulties and the tested or/ and proposed solutions related to NAMs immunization.

The topics will **focus on 5 specific concepts/hubs** related to NAMs' vaccination that have been presented in the "General Conceptual Framework on how to improve the vaccination coverage of NAMs" (WP2, Task 4.5, milestone 4.2):

1. ENTITLEMENT to vaccination
2. REACHABILITY of people to be vaccinated
3. ADHERENCE (vs. Hesitancy) to vaccination
4. ACHIEVEMENT of vaccination (execution and completion)
5. EVALUATION of vaccination intervention

By the end of the two (2) FGs and the three (3) PIs, the aim is to cover all concepts/hubs of the conceptual framework. It is expected that participants in each FG and in in the PIs may be more familiar with some of the concepts/hubs of the framework and not others, due to their profession or other experiences. The FGs and the PIs should focus on what the participants have to share. For example, people working in the field possibly have more insight on the concepts of reachability, adherence and achievement compared to participants in the PIs (experts/professionals of higher status) who possibly have more to say about the concepts of entitlement and evaluation. This means that during discussions participants will be given the space to emphasise more on specific concepts, based on their experiences and profession. This is desirable and should be encouraged by the moderators. Moderators during the FGs and PIs should promote the free flow of the discussion and should not press the participants with probing on each concept of the framework.

The discussion should consider the ActoVax4NAM operational definition -differences in age and legal status of NAMs. Moreover, emphasis will be given on the consequences of COVID-19 for the vaccination of NAMs and on the opportunity, COVID-19 has provided in the field of NAMs' immunization, if any.

One (1) discussion guide has been designed (**Annex 3**) for FGs and PIs. This guide will be used by moderators to guide the discussions. <u>The questions included In the discussion guides are **indicative.** Moderators are free to direct the discussions based on the group dynamics and the experiences of the participants asking the questions mostly appropriate.</u>

7. Data analysis

All focus groups and personal interviews need to be recorded and transcribed as analysis will be conducted based on these transcriptions. Transcriptions should be in the language of each partner country. There is no need for transcriptions' translation into English.

In order to ensure credibility and reliability of the research, the written format of the transcriptions should be an exact replica of the audio file as recorded. The recording of pauses, silences and repeated words is desirable (could also be noted by the note keeper) but depends on how each team in conducting their analysis. There is no need to send records and transcriptions to Prolepsis.

Annex 4 includes the results template -National Report- which needs to be filled in and sent to Prolepsis. The results template describes how reporting of focus groups and personal interviews should be conducted. Quotations justifying each finding need to be included.

8. Deliverables

Each partner conducting the focus groups and personal interviews needs to deliver to Prolepsis Institute a national report detailing the methodology of the focus groups/ personal interviews and the results based on the results template described above (**Annex 4**). Each partner country should also send to Prolepsis Institute the three excel files including the data from the descriptive questionnaires - one for each focus group and one for personal interviews.

The deadline is the 14th of January, 2022.

Partners will send the country specific focus groups reports to the Prolepsis team, who will compile results and produce an overall analysis of findings and conclusions. The overall analysis will constitute the main part of the final report, which will also include each partner country's content analysis. Therefore, please, be precise and specific in the data analysis reports.

9. Useful information for focus group and interview moderators

Each focus group will have a **moderator (facilitator)**. The moderator will need to ensure maximum participation, ensure the discussion is targeted to the objectives set which should also be oriented to produce results. The role of the facilitator is crucial in conducting the focus groups effectively, especially in terms of providing clear explanations of the aim of the group discussion, helping people feel at ease, and facilitating interaction between group members. To this end, it is important that the facilitators have experience in moderating as well as good interpersonal skills in order to promote participants' trust and increase the likelihood of an open and interactive dialogue. A **note taker (rapporteur)** can also participate in each focus group. The main role of the rapporteur will be to keep track and take notes of the main issues discussed.

Crucial issues:

CONFIDENTIALITY

It is crucial that no one except the organizers and the participants is aware of the participants' names. Furthermore, people other than Consortium members should **not** have access to individual participants' answers, neither accidentally nor intentionally. Do not refer to the names of respondents in the interview notes. Use also a unique code assigned to the respondent to protect confidentiality.

BUILDING RAPPORT

- **Participants as experts**

Individuals are being invited to participate in focus groups because they are perceived to possess important knowledge regarding particular experiences, needs, or perspectives, we hope to learn more about as a result

of the needs assessment. Let participants know that you are there to learn from them and help them understand the importance of their contribution.

- **Your role as moderator /facilitator**

It is important to present yourself as a **moderator /facilitator** rather than a friend. You will need to let participants know that you are part of a team that is conducting a study for the needs' assessment of a particular scientific group. This formality will indicate to the participants that their participation is important and will contribute to the needs' assessment.

- **Balancing rapport and professionalism**

Part of your role is to achieve a balance between building rapport with participants and conveying an appropriate level of professionalism. Your role during the focus groups is not that of a good conversationalist or a friend who provides feedback, but of a professional. If you are too casual, participants may not see you as someone who is prepared to take what they have to say seriously. However, if you are too formal, participants may feel intimidated by you and may not be as willing to reveal information. Strive to achieve a balance between being formal and casual during your focus groups.

- **Recognizing and appreciating participants for their time and contribution**

This is one of the most important things you can do to help create rapport. Remember to thank participants for their time and participation. Let them know that the information they have shared is valuable for the project.

LISTENING SKILLS

- **Listen carefully to the participants**

Active listening allows you to probe effectively and at appropriate points during the focus group. Active listening involves not only hearing what someone is saying, but also noticing body posture and facial gestures (i.e., any changes in nonverbal behaviour) that might provide clues as to the appropriate or necessary ways to engage participants.

- **Show participants you are listening**

Show participants that you are listening to what they are saying. Signs that you are paying attention may include leaning forward slightly, looking directly at participants while they are speaking, or nodding at appropriate times. Such behaviours not only indicate that you, as the facilitator, are more engaged, but also will help maintain participants' engagement. Looking away, yawning, or frequently checking your watch will most likely make participants feel that you are not paying attention. If the participants suspect that you are not listening to them with interest, they may take their role of sharing expert knowledge less seriously and, therefore, may not elaborate or provide much detail with their answers.

- **The importance of neutrality during the interview**

While showing participants that you are actively listening and interested in what they are sharing, you will also want to remain as neutral or impartial as possible, even if you have a strong opinion about something. Use phrases such as "Thank you. That is helpful." Comments such as "I can't believe it!" or "You really think that?!" are not appropriate remarks for a facilitator to make, because they infer your opinion and impose judgment on the participant, which will probably shut down the discussion.

QUALITIES OF AN EFFECTIVE FOCUS GROUP MODERATOR/FACILITATOR

Roles and Responsibilities of moderators/facilitators:

- Keep participants focused, engaged, attentive and interested
- Monitor time and use limited time effectively
- Use prompts and probes to stimulate discussion
- Use the focus group guide effectively to ensure all topics are covered
- Politely and diplomatically enforce ground rules:
    - Make sure everyone participates and at a level that is comfortable

  - Limit side conversations
  - Encourage one person to speak at a time
- Be prepared to explain or restate questions
- Diffuse and pre-empt arguments
- After the focus group, work with the note taker to discuss the uprising themes. To facilitate the debriefing discussion, review the notes of the discussion, discussing areas that seemed particularly important or salient given your knowledge of the research questions. [Need to determine who will take responsibility for these notes, as well as the consent forms, and tapes of the focus group discussion.]

Effective moderators:

- Have good listening skills
- Have good observation skills
- Have good speaking skills
- Can foster an open and honest dialogue among diverse groups and individuals
- Can remain impartial (i.e., do not give their opinion about topics, because this can influence other people's perspectives)
- Can encourage participation when someone is reluctant to speak up
- Can manage participants who dominate the conversation
- Are sensitive to gender and cultural issues
- Are sensitive about the differences in power among and within groups

Roles and Responsibilities of Note Takers:

- Bring the following materials for the focus group:
  - Materials to record the focus group, including writing utensils (more than one, in case a pencil breaks or a pen runs out of ink) and a lot of paper
  - Bring a flip chart as well as markers of different colors for recording information (as needed) on a flip chart or dry erase board. NOTE: if a dry erase board is used instead of a flip chart, be sure that dry erase markers are available or that you bring this type of marker.
  - Tape for affixing flip chart pages on the wall, as needed.
  - Recording equipment: a tape recorder, extension cord, extra tapes and extra batteries
- Ensure that ground rules for the focus group are written clearly and neatly on a flip chart (it may be helpful to do this beforehand)
- Assist the facilitator in arranging the room (e.g., seating, flip chart stand and paper, placement of the ground rules, etc.)
- Record major themes, ideas, comments and observations regarding group dynamics in hand-written notes
- Conduct a debriefing discussion with the focus group facilitator immediately after each focus group. To facilitate the debriefing discussion, review your notes with the focus group facilitator. Capture any new insights that emerged as a result of this discussion with the facilitator.
- Do not throw away any papers with notes of the focus group discussion. These will be stored with other data collected through the needs' assessment.
- [Need to determine who will take responsibility for these notes, as well as the consent forms, Debriefing Discussion Tool and tapes of the focus group discussion.]

Effective Note Takers:

- Have good listening skills

- Have good observation skills
- Have good writing skills
- Can take notes that are comprehensive but not word-for-word
- Act as an observer, not as a participant
- Can remain impartial (i.e., do not give her/his opinions about topics, because this can influence what people say)

TIME MANAGEMENT

- **Managing time during the interview**

Individuals love to talk about their experiences and may tend to go on and on about them. Here is where your skills as an interviewer are put to the test. As the interviewer, your job is to structure the interview in such a way that you elicit a complete response to questions, probing insightfully so that you get the level of detail you need to arrange the issues adequately.

- **Keep the interview moving**

It is also your responsibility to politely lead the interview forward when what the respondent is sharing is less useful given your topics of discussion. Other times, you may want to acknowledge that your time together is waning and there are some other aspects of their work and experience that you want to be sure you have time to learn about and explore, and, for this reason, you are going to move on.

ANNEX 1: Consent form

AcToVAx4NAM – QUALITATIVE RESEARCH

CONSENT FORM – ALL PARTICIPANTS

Please check the box if you agree and if you give your permission for the following:

1	I confirm that I have listened to and understand the information about the present study. I have had the opportunity to consider the information, to ask questions and have been given satisfactory answers.	
2	I understand that my participation in the focus group/interview is voluntary and that I am free to withdraw at any time, without giving any reason.	
3	I understand that the focus group/interview will be recorded on a voice-recorder. I give permission for doing this.	
4	I consent to the storage (including electronic) of the collected information (also audiorecord) for the purposes of this study. I understand that any information that could identify me will be kept strictly confidential and that no personal information will be included in the study report or other publication.	
5	I agree to take part in the focus group/interview of this study.	

_____	_____	_____
Date	Name and phone number	Signature

ANNEX 2: Descriptive questionnaire

AcToVAx4NAM – QUALITATIVE RESEARCH

Questionnaire of Demographic Characteristics for Participants

Instructions for completion: This questionnaire is anonymous and the information that will be provided is confidential. Please answer all questions either by writing your answer or ticking the boxes with□ or✓. Thank you very much for your cooperation and participation.

1. **Date:** _____
2. **Country**: _____
3. **Age**: _____
4. **Gender**: Woman ❒Man ❒
5. **Education:**

Less than primary education	❒
Primary or first stage of basic education	❒
Lower secondary or second stage of basic education	❒
Upper secondary education	❒
Post-secondary non-tertiary education (technical or other type)	❒
Tertiary	❒
Master	❒
Doctoral	❒

Other (please indicate)_____

6. **Occupation:** Physician ❒Psychologist ❒Social worker ❒Cultural mediator ❒Nurse ❒Administrative staff ❒Manager ❒ expert ❒policy makers ❒migrant community leader ❒Other (please indicate) _____
7. **Institution/organization (multiple answers are possible):** ❒health centres, ❒vaccination local/ national units, ❒ NGOs, ❒entry camps, ❒first reception, ❒detention, ❒State level organisation, please indicate _____ ❒Municipality ❒Hospital ❒NGO ❒University ❒ Regional health service ❒Regional Clinic ❒Refugee camp ❒Other (please indicate) _____
8. **Concerning immunization do you work mainly with *(you can choose more than one answer)*:** Children ❒Adolescents ❒Adults ❒Elders ❒Other (please indicate)
9. Concerning newly arrived migrants, do you work mainly with ***(you can choose more than one answer)*:** I don't work with NAMs ❒documented NAMs ❒undocumented NAMs ❒resident migrants ❒Other (please indicate)_____

10. **Overall, how long have you been working in the area of immunization?** Years_____
Months_____

Thank you!

ANNEX 3: Discussion guide for Focus Groups and Personal Interviews

USEFUL INFORMATION FOR THE MODERATOR: the questions included in each section of the discussion guide are based on the *intellectual output* "General Conceptual Framework on how to improve the vaccination coverage of NAMs" (WP4, Task 4.5, milestone 4.2) and include its five concepts/hubs:

1. ENTITLEMENT to vaccination
2. REACHABILITY of people to be vaccinated
3. ADHERENCE (vs. Hesitancy) to vaccination
4. ACHIEVEMENT of vaccination (execution and completion)
5. EVALUATION of vaccination intervention

Qualitative research is implemented in order to deepen our understanding on *the actual experiences* of the actors involved in NAMs' immunization. Therefore, by the end of the two (2) FGs and the three (3) PIs, the aim is to cover all concepts/hubs of the conceptual framework. It is expected that participants in each FG and in the PIs may be more familiar with some of the concepts/hubs of the framework and not others, due to their profession or other experiences. The FGs and the PIs should focus on what the participants have to share. For example, people working in the field possibly have more insight on the concepts of reachability, adherence and achievement compared to participants in the PIs (experts/professionals of higher status) who possibly have more to say about the concepts of entitlement and evaluation. This means that during discussions participants will be given the space to emphasise more on specific concepts, based on their experiences and profession. This is desirable and should be encouraged by the moderators. Moderators during the FGs and PIs should promote the free flow of the discussion and should not press the participants with probing on each concept of the framework.

Throughout the discussion please keep in mind the operational definition of NAMs and please probe throughout the discussion to capture information regarding the different categories -different age and legal status of NAMs. Emphasis needs will also be placed on the consequences of COVID-19 for the vaccination of NAMs and the opportunity COVID-19 has provided in the field of NAMs' immunization, if any.

1. Introduction

Goal: to generate an atmosphere of security and trust:

a) The moderator provides a brief explanation of the project, the operational definition of NAM and the project's related goals. Moreover, he/she provides information about the aim of the FG/PI and the procedure.

b) The moderator ensures participants about (a) confidentiality, (b) that no right or wrong answers exist.

c) The moderator provides a brief intro about his/herself.

d) Each participant provides a brief intro about him/herself. Could you start by briefing explaining your role, and the frequency and the way in which you engage with NAMs' immunization?

2. Participants' opinions concerning NAMs' immunization

Goal: to gain a deeper understanding of participants' opinions in terms of the immunization of NAMs. Some indicative questions could be:

- Do you consider that the immunization of NAMs is important? If so, provide the reasons why. If needed, probe for reasons such as personal health, public health, integration etc.
- Do you believe that migrants receive proper immunization? In other words, are vaccines provided to NAMs?

- Do you see differences with the general population? between ages? For example children / adolescents, adults / elders? Do you see differences between countries of origin of NAMs, for example people from the EU vs Third countries? Do you see differences between different status of NAMs, for example asylum seekers, undocumented migrants etc.? Justify your answer.
- Do you see any difference during and before the COVID pandemic? Provide examples. Justify your answers.

3. Barriers and solutions towards NAMs' immunization

Goal: to allow participants to share their opinions about different system level barriers that hinder the immunization of NAMs and discuss solutions that could facilitate the process of vaccination among NAMs**.** The following questions are open-ended and can be used to initiate the discussion.

- Based on your experience which do you think are the barriers that hinder (make difficult) the immunization of NAMs?
- Based on your experience which are the solutions to the above barriers, please mention best practices or other examples tested or not?

We allow participants to express spontaneously and openly their opinions and arguments. The moderator should be aware of the five concepts comprising the conceptual framework and try to navigate the discussion according to these. Therefore, if there are arguments related to specific concepts the moderator needs to research deeper into these concepts.

The following section lists indicative questions (per conceptual framework concept) which can be used for probing or exploring concepts in more detail. The moderator does not need to ask all of these questions. Discussions should flow freely. These questions are to be used at the discretion and decision of the moderator to facilitate the discussion flow.

2.1 Entitlement to vaccinations

Goal: we need to understand, from the perception and perspective of the participants whether NAMs are recognized as beneficiaries or users of the national health care prevention rights system (such as immunizations) or not.

Indicative relative barriers that could be raised and explored further:

Legal barriers/ solutions

- Is there a national immunization plan for migrants?
- What vaccinations are offered to NAMs? Please consider different groups of NAMs
- How could the above barriers be overcome? Mention some factors that would help to overcome these barriers?

Economic barriers/ solutions

- How is the immunization of NAMs covered financially? Is it free of charge for NAMs? Are there differences in terms of legal status of NAMs, county of origin, age of NAMs?
- Do you see any difference in terms of legal and economic considerations related to NAMs' immunization during and before the COVID pandemic? Provide examples. Justify your answers.
- Is the Covid-19 vaccine offered to NAMs? Is it provided free to all regardless of legal status or not?
- Are you aware of any good examples (best practices) to overcome the above legal related barriers? Have you participated in such an activity/project? Could you please describe your experience? Was it effective? In what way?

2.2 Reachability of people to be vaccinated

Goal: we need to understand the strategies that are followed in order to identify NAMs who need to be vaccinated. Are there specific tools used, such as national records/registries/data bases of NAMs or not? Through which channels are NAMs identified? Which are the barriers and enablers related to the reachability of NAMs to be vaccinated?

Indicative relative barriers that could be raised and explored further:

Administrative barriers/ solutions

- Are data available on the immunization of NAMs? Are there national databases, regional, local? Who keeps them? How long have these data been collected for? Do you believe that the lack of regularly collected data about NAMs is a barrier that makes the immunization of NAMs difficult?

Organizational barriers/ solutions

- Through which channels are NAMs contacted in order to get vaccinated? On an individual or/ collective way (i.e. reception centers)
- How important do you consider the cooperation between different involved services? Which are the most important services involved? Do they cooperate? Is this cooperation effective or not? Justify your answers.
- What other organizational barriers do you see in terms of the reachability of NAMs in order to be vaccinated?
- Are there differences in terms of legal status of NAMs, county of origin, age of NAMs?
- Do you see any difference in terms of reachability considerations related to NAMs' immunization during and before the COVID pandemic? Provide examples. Justify your answers.
- What solutions do you see in order to overcome the above mentioned organizational and administrative barriers? Justify your answers.

2.3 Adherence (vs. hesitancy) to vaccination

Goal: we need to understand from the perception and perspective of the participants which are the barriers and enablers related to the adherence to vaccination or else what causes hesitancy and how to overcome it.

Indicative relative barriers that could be raised and explored further:

Barriers/ solutions related to NAMs' entitlement to vaccinations

- Are the barriers/ solutions related to NAMs' entitlement to vaccinations related to NAMs' adherence to vaccination?
- Are there legal and/or economic barriers related to NAMs' adherence to vaccination?
- What vaccinations are offered to NAMs? How is the immunization of NAMs covered financially? Please consider different groups of NAMs as well as the relation of the pandemic to these facts.
- How could the above barriers be overcome?

Logistic barriers/ solutions

- Are immunization services for NAMs easily accessible?
- Are the vaccinations organized by proximity services?
- Please consider different groups of NAMs as well as the relation of the pandemic to these facts.
- How could the above barriers be overcome?

Cultural-linguistic barriers

- Is adequate, culturally competent and easily accessible information provided to NAMs about vaccinations (provision, importance and safety of vaccinations, fake news)? I.e. translated leaflets, materials, speeches etc.
- Is there adequately trained personnel for the provision of the above mentioned information? What kind of training is needed?
- Which communication channels are used, i.e. community leaders, cultural mediators, health professionals, social services etc to promote vaccinations?
- Please consider different groups of NAMs as well as the relation of the pandemic to these facts.
- How could the above barriers be overcome?

Psycho-social barriers/ solutions

- Do NAMs fear vaccination services? Fear of sanitary or/ and non-sanitary services
- Is the vaccination process voluntary, confidential, non-stigmatizing?
- Please consider different groups of NAMs as well as the relation of the pandemic to these facts.
- How could the above barriers be overcome?

2.4 Achievement of vaccination (execution and completion)

Goal: we need to understand from the perception and perspective of the participants the ability to organize the beginning and the vaccination cycle as well as the ability to ensure its completion.

Indicative relative barriers that could be raised and explored further:

Organisational barriers

- Is previous vaccination status assessed?
- Are immunization services flexible in terms of organization/ time?
- Is a vaccination certificate used?
- Are the carried-out immunizations recorder?
- Please consider different groups of NAMs as well as the relation of the pandemic to these facts.
- How could the above barriers be overcome?

Cultural-linguistic barriers

- Is informed consent provided? Is it understandable (use of simple language, translated into the NAMs' language)?
- Are health professional trained? Are there available trainings?
- Are there enough cultural mediators? Provided by whom? State, NGOs?
- Please consider different groups of NAMs as well as the relation of the pandemic to these facts.
- How could the above barriers be overcome?

2.5 Evaluation of vaccination intervention

Goal: we need to understand, from the perception and perspective of participants which are the barriers and enablers related to the evaluation of NAM's immunization. We research deeper the following considerations related to evaluation: (a) development of data bases in terms of NAMs' immunization, that could help in the development of information flows, evaluation procedures, and (b) evaluation of relevant interventions as a strategy for optimization of NAMs' vaccination coverage.

Indicative relative barriers that could be raised and explored further:

- Does the Health System have an information flow concerning vaccinations at national level?
- Does this flow allow to extract data for NAMs' immunization? Is it possible to calculate the immunization of NAMs?
- Are there national databases, regional? By whom are they kept? How long has this information been collected for?
- Please consider different groups of NAMs as well as the relation of the pandemic to these facts.
- How could the above barriers be overcome?

3. Closure

The moderator provides a brief summary of the main topics and thanks the participants for their contribution

ANNEX 4: National report

- **In order to report the findings partners (compile the national report of the FGs and PIs findings need to use a word document titled: *"AvToVax4NAM focus qualitative findings – Name of the country"***
    - **Font style and size:** Calibri 11
    - **Space between lines:** 1.5
- **For the structure and the content of the national report partners need to follow the instructions below:**

1. Introduction

Provide information as follows:

- Total number of participants in the FGs and PIs
- For each target:
    - No. of participants
    - Method that was used for the data collection, i.e. on-line or face-to-face focus groups and interviews
    - Brief description of the recruitment process and the discussion flow, i.e. challenges in the recruitment process; information that according to the person who conducted the discussion would be important for the analysis.

In the following sections, please, take note of the highlighted fonts. These are important considerations you need to address in your national report.

Participants' opinions concerning NAMs' immunization

How participants perceive NAMs' immunization? Guidelines for reporting:

- Report each argument by using bullet points, which will indicate the themes. Under each theme/ bullet provide a brief explanation.
- Justify each argument by providing participants' quotes
- For each quote indicate participant's occupation (social worker, physician, administration, policy maker etc).
- We are expecting overlapping themes between those who work in the field of NAMs' immunization, those who do administrative, managerial work related to NAM's immunization and higher level professionals as well as differentiations. Presentation of commonalities and differences is crucial. Therefore, in your report be clear and precise about commonalities and differences among different type of healthcare professionals.

2. Barriers of NAMs' immunization and solutions related to its improvement

Guidelines for reporting:

- Provide information about the concepts/ hubs that were discussed by each target of the participants. Example:
    a) Professionals working in the field of delivery of immunizations discussed the concepts of adherence and achievement
    b) Professionals working in managing/organizing immunization services in discussed the concepts of entitlement and reachability

c) Experts related to immunization planning discussed the concepts of entitlement and evaluation

2.1 Entitlement to vaccinations

2.1.1. Barriers

Guidelines for reporting:

- We are expecting up to 5-6 arguments. Report each argument by using bullet points, which will indicate the themes. Under each theme/ bullet provide a brief explanation.
    - Justify each argument by providing participants' quotes
    - For each quote indicate participant's occupation
- *Feel free to organize your data in the following categories: (a) legal barriers, (b) economic barriers, if the actual data allow this categorization.*
- Differences and commonalities in terms of (a) age, and (b) legal status of NAMs' should be mentioned.
- In case the specific concept was discussed by different target groups: We are expecting overlapping themes among those who work in the field of NAMs' immunization, those who do administrative, managerial work related to NAM's immunization and higher level professionals as well as differentiations. Presentation of commonalities and differences is crucial. Therefore, in your report be clear and precise about commonalities and differences among different type of health professionals.

2.1.2. Solutions

- We are expecting up to 5-6 arguments. Report each argument by using bullet points, which will indicate the themes. Under each theme/ bullet provide a brief explanation.
    - Justify each argument by providing participants' quotes
    - For each quote indicate participant's occupation
- Solutions could be best practices proposed by participants either tested in their field or experimental.
- *Feel free to organize your data in the following categories: (a) solutions in order to overcome legal barriers, (b) solutions in order to overcome economic barriers, if the actual data allow this categorization.*
- Differences and commonalities in terms of (a) age, and (b) legal status of NAMs' should be mentioned.
- In case the specific concept was discussed by different target groups: We are expecting overlapping themes among those who work in the field of NAMs' immunization, those who do administrative, managerial work related to NAM's immunization and higher level professionals as well as differentiations. Presentation of commonalities and differences is crucial. Therefore, in your report be clear and precise about commonalities and differences among different type of healthcare professionals.

2.2. Reachability of people to be vaccinated

2.2.1. Barriers

- Please follow the structure and instructions described in section 2.1. (above) to fill in this part of your National report.
- *Feel free to organize your data in the following categories: (a) administrative barriers, and (b) organizational barriers, if the actual data allow this categorization.*

2.2.2. Solutions

- Please follow the structure and instructions described in section 2.2. (above) to fill in this part of your National report.

- *Feel free to organize your data in the following categories: (a) solutions in order to overcome administrative barriers, and (b) solutions in order to overcome organizational barriers, if the actual data allow this categorization.*

2.3.Adherence (vs. hesitancy) to vaccination

2.3.1. Barriers

- Please follow the structure and instructions described in section 2.1. (above) to fill in this part of your National report.
- *Feel free to organize your data in the following categories: (a) legal barriers, (b) economic barriers, (c) logistic barriers, (d) cultural-linguistic barriers, and (e) psycho-social barriers, if the actual data allow this categorization.*

2.3.2. Solutions

- Please follow the structure and instructions in section 2.2. (above) to fill in this part of your national report.
- *Feel free to organize your data in the following categories: (a) solutions in order to overcome legal barriers, (b) solutions in order to overcome economic barriers, (c) solutions in order to overcome logistic barriers, (d) solutions in order to overcome cultural-linguistic barriers, and (e) solutions in order to overcome psycho-social barriers, if the actual data allow this categorization.*

2.4.Achievement of vaccination (execution and completion)

2.4.1. Barriers

- Please follow the structure and instructions described in section 2.1. (above) to fill in this part of your National report.
- *Feel free to organize your data in the following categories: (a) organizational barriers, and (b) cultural-linguistic barriers, if the actual data allow this categorization.*

2.4.2. Solutions

- Please follow the structure and instructions in section 2.2. (above) to fill in this part of your national report.
- *Feel free to organize your data in the following categories: (a) solutions in order to overcome organizational barriers, and (b) solutions in order to overcome cultural-linguistic barriers, if the actual data allow this categorization.*

2.5.Evaluation of vaccination intervention

2.5.1. Barriers

- Please follow the structure and instructions described in section 2.1. (above) to fill in this part of your National report.

2.5.2. Solutions

- Please follow the structure and instructions in section 2.2. Section (above) to fill in this part of your National report.

3. COVID-19 pandemic and its consequences towards NAMs' immunization

- Report participants' arguments on the COVID-19 pandemic and its consequences towards NAMs' immunization.

- We are interested in COVID-19 pandemic consequences in all concepts. This means that you report the arguments of the participants per concept:
  - **3.1. Entitlement to vaccination**
  - **3.2. Reachability of people to be vaccinated**
  - **3.3. Adherence (vs. hesitancy) to vaccination**
  - **3.4. Achievement of vaccination (execution and completion)**
  - **3.5. Evaluation of vaccination intervention**
- We are expecting overlapping themes among those who work in the field of NAMs' immunization, those who do administrative, managerial work related to NAM's immunization and higher level professionals as well as differentiations. Presentation of commonalities and differences is crucial. Therefore, in your report be clear and precise about commonalities and differences among different type of healthcare professionals.
- Differences and commonalities in terms of (a) age, and (b) legal status of NAMs' should be mentioned.

4.Conclusions

Please provide a summary of the most important findings (500 words maximum)

APPENDIX 3 - Barriers and solutions from the literature by hub

ENTITLEMENT

Legal barriers

Migrants are not specifically included in legal documents concerning vaccination

Many EU Member States lack policies and strategies with specific recommendations on immunisation for migrants and refugees. Inbuilt administrative barriers for undocumented migrants prohibit their entitlement to free health services including immunization (WHO Europe, 2018a).

Only in 11 countries of the WHO European Region (Germany, Greece, Italy, Latvia, the Netherlands, Portugal, Romania, Slovakia, Tajikistan, United Kingdom (England) and Uzbekistan) recommendations for immunisation for migrants are included in the National Immunisation Program (NIP). Some NIPs include recommendations that apply to specific situations, such as urgent epidemiological conditions (e.g. Romania), or specific vaccinations (e.g. Portugal) (De Vito, 2017).

There are differences in entitlement with respect to the local population

Vaccines are available to the majority of the population of the European Region; however, variable commitment to action is impeding further progress and the innovative solutions and extension of services necessary to fulfil the rights of underserved, marginalised, migrant and disadvantaged children and families (WHO Europe, 2014).

There are differences between the different categories of NAM in health and vaccination entitlement

Access to health care of newly arrived migrants and refugees is shaped by legal frameworks in regards to migration status of each person, and health regulations towards refugees vary significantly among the EU countries, with different entitlements to care for different migrant groups (Pavli, 2017).

From a legal point of view, programmes across the EU/EEA are specifically targeted to asylum seekers and refugees, potentially excluding other migrant groups (Noori, 2021), therefore in many Countries major problems exist for irregular immigrants, who can only visit public hospitals in case of emergency (Theodorou, 2012). The existence of such a barrier is reported in several EU Countries, including Germany (Razum, 2020), Cyprus (Theodorou, 2012), Poland (Armocida, 2021); in Greece people who get a second rejection of their asylum claim have no access to vaccination (PICUM, 2021). Sometimes, differences also exist among migrant groups, with refugees reported to have a lower uptake of services compared with asylum seekers (WHO Europe, 2017). The same barrier has recently been highlighted for COVID-19 vaccination (ECDC,2021b).

In Germany, refugees and asylum seekers are not entitled to basic insurance in the first months of their stay; this means they have reduced access to health and vaccination provision (Spallek, 2019). In general, lack of health insurance or registration with the health system is a barrier to the access to vaccination (WHO-UNHCR-UNICEF, 2015).

Many NIPs mention priority groups without breaking down the various population categories within those groups, therefore getting clarity on the level of migrant inclusion can be challenging. In some cases, policies may intend to be migrant-inclusive but realities may present aspects and processes that policymakers did not consider as barriers for some categories of migrants. Additionally, IOM has noted that some policymakers prefer to avoid publicizing the intention to include migrants in the campaigns for various reasons (for example to avoid xenophobic reactions in the general population) (IOM, 2021); this is reported for COVID-19 vaccination but it may affect all the other vaccinations.

Regarding COVID-19 vaccination, broad inconsistencies in immunisation directives adopted by EU Member States have been reported (Armocida, 2021). The COVID-19 emergency and the resulting vaccination campaign have highlighted that large numbers of more recently arrived migrants remain outside of health systems in many countries, due to, for example, lack of legal entitlement, and thus they are at risk of being excluded from vaccine roll-out. This includes undocumented migrants, asylum seekers and refugees, especially those residing in camps, detention centres and other high-risk settings. Most European countries, for example, restrict access to healthcare and vaccination initiatives for certain migrant groups, which has undoubtedly resulted in lower engagement with mainstream services (Crawshaw, 2021).

Heterogeneity of policies among countries

"The heterogeneity of national policies across the European Region for vaccination of refugees and migrants pose challenges for refugees and migrants in transit, and a difficulty for national immunisation systems is to ensure vaccination of these individuals moving within the Region, particularly for vaccines that require multiple doses" (WHO Europe, 2019a).

Legal solutions

Since immunisation is a health intervention requiring a continuum of follow-up until the full schedule is completed, this requires cooperation among the countries of origin, transit and destination. Refugees, asylum-seekers and migrants should be vaccinated without unnecessary delay according to the national immunisation schedules of the country where they are envisioned to reside for more than a week. Measles/mumps/rubella (MMR) and polio vaccines should be prioritised (WHO-UNHCR-UNICEF, 2015).

The European Vaccine Action Plan 2015-2020 (WHO Europe, 2014) proposes some actions to implement tailored, innovative strategies to address identified causes of inequity, paying special attention to migrants, international travellers and marginalised communities, in ensuring their eligibility and access to (culturally) appropriate immunisation services and information.

Some European governments have removed healthcare entitlement barriers to testing and vaccination for COVID-19 or stated that vaccines will be available irrespective of residence status (Spain, Netherlands, UK, France and Italy), whereas Germany has prioritised asylum seekers living in accommodation centres for vaccination (ECDC, 2021b; Crawshaw, 2021). The Portuguese government will grant residency status to anyone with a pending residence application, providing opportunities to work and access to healthcare and

social benefits, with several other models of good practice identified elsewhere (including Italy) targeting irregular migrants specifically. In Denmark, governments have guaranteed undocumented migrants equal access to the vaccination (ECDC, 2021b).

Solutions related to the migration/legal status

Other specific solutions have been proposed to overcome access barriers related to the legal status of the migrant. A review at European level suggests to provide appropriate health care irrespective of legal status, in particular for vulnerable population groups (unaccompanied minors, children, pregnant women and the elderly) (Pavli, 2017).

The European Centre for Disease Prevention and Control (ECDC) has responded to calls to action to improve migrant health and strengthen universal health coverage by developing evidence-based guidance for policy makers, public health experts, and front-line healthcare professionals on how to approach screening and vaccination in newly arrived migrants within the EU/EEA and by considering wider groups of migrants beyond refugees and asylum seekers in catch-up vaccination programmes (Noori, 2021).

In order to cope with the pandemic situation related to Sars-Cov-2, and to facilitate a wider access to vaccine, some Countries have put in place different strategies and proposed intervention. In Cyprus, to overcome barriers of entitlement to vaccination for refugees and asylum seekers, the Ministry of Health implements prevention and health promotion programmes, including successful vaccination of migrants (Theodorou, 2012). In Germany, it has been suggested that current initiatives to give asylum seekers access to all services provided by the statutory health insurance system via the regular “GKV” insurance card could significantly improve the situation for this group (Spallek, 2019). In Germany and Cyprus asylum seekers living in accommodation centres or closed facilities are prioritised for COVID-19 vaccination (ECDC, 2021b). In a Commentary about access to COVID-19 vaccines, Zard et al. (Zard, 2021) states that legal status should have no place in decisions about vaccine access,and relying on n as a route to vaccination will unacceptably delay the protective effects for migrants and refugees, particularly in groups at higher risk.

Economic barriers

While the COVID-19 vaccine is free in many countries for people registered in national health insurance plans, in some countries there is a lack of clarity on whether there is a cost/fee for people who are not enrolled in such schemes (IOM, 2021).

In some Countries, many vulnerable migrant groups are not entitled to free statutory healthcare and vaccinations on arrival (ECDC Scientific advice, 2018), an example is that in Ireland and Norway migrants have to pay for some of the vaccinations (Giambi, 2019).

REACHABILITY

Administrative/organisational barriers

Lack of personal documents One of the main immunisation barriers is the lack of identification documents (Sypsa, 2016). Many refugees and migrants, through fears of legal problems, may have chosen not to keep, or have lost, any personal documentation, including vaccination records (WHO Europe, 2019a; Giambi 2017).
The lack of identification documents are important barriers also for COVID-19 immunisation, in case of mobility and follow-up with more doses vaccination schedule (Zard, 2021). Homeless people who are not present in the reception facilities, but live in occupied buildings or other informal settlements, represent critical issues (Bandini, 2021).
So-called 'vulnerable' or 'hard-to-reach' groups include immigrants, especially if irregular, and refugees, but also ethnic groups of nomadic populations (Roma, Sinti) and the 'homeless'; their low compliance to vaccinations leads to the creation of 'pockets' of unvaccinated or incompletely vaccinated people in the population (Italian MoH, 2017). In some Member States, there are additional barriers such as the requirement to provide an identity document or proof of residence in the host country or in a particular city (ECDC Scientific advice, 2018).

Lack of registration with NHS or health insurance

Many documents report that one of the main administrative barriers is the difficulty in reaching migrants (Sypsa, 2016; Bandini, 2021) and refugees (Guidance – Spain, 2016) in different settings in order to vaccinate them (Giambi, 2017). It is generally difficult to identify migrants by health registries and to contact them through normal channels (invitation letter) (Italian MoH, 2017; Knights, 2021), because they often lack registration with the NHS (Bandini, 2021), or health insurance (Sypsa, 2016). Barriers in accessing community health services might unnecessarily delay the administration even of first doses, especially while people are on the move (Krishnaswamy, 2018).
With regard to refugees and asylum seekers in particular, according to the 2019 WHO Report, in Europe health screening is widely offered. During the refugee and migrant influx in 2015 and 2016, the initial response could only come from existing health-care structures, which, normally, would only be accessible to people in possession of the relevant documents or who have been registered. The inability of existing public health structures to cope with such an unprecedented situation was overcome by using volunteers – who were initially unorganised – and through existing health-care organisations, which did not wait for an official mandate to begin providing health care in what was a rather chaotic situation (WHO Europe, 2019b).
In some EU/EEA countries migrant populations have low or sub-optimum measles immunisation coverage, with migrant children being less likely to be vaccinated than their native counterparts because **undocumented migrants may not be registered with a national health system** and have limited access of to health care services (Williams, 2016).

Difficulties in receiving and understanding invitation letter

In Ireland migrant parents may have language or health literacy challenges. Even if their children are on the

register, they may not understand the invitation letters sent by the Health Service Executive to attend for vaccination. Some marginalised groups (e.g. migrants and homeless families) may move home frequently and Health Service Executive correspondence/invitations to vaccination may not be received (Rechel, 2019).

Lack of procedure to reach migrants at community level

Only half of the EU countries had policies and procedures to ensure migrants' access to vaccination at the community level, while all have it only at point of entry (Giambi, 2019)

Difficulties with NGOs in providing ongoing care and to coordinate

Nongovernmental and humanitarian agencies often support communication and access for refugees and asylum seekers, but their ability to provide ongoing care and to coordinate with other organisations is limited (Pavli, 2017). Moreover, nonprofit associations who work with these populations are not always involved (Tavolo Immigrazione Salute (TIS) e Tavolo Asilo e Immigrati (TAI), 2021).

Administrative/organizational solutions

Flexible solutions to overcome problem of identification

To overcome the problem of identification, effective coding of country of origin, language, and ethnicity to enable identification when patients register with a practice should be implemented (Knights, 2021).

During COVID-19 immunisation, flexible formulas linked to the vulnerabilities of the population and to specific situations have been used in Italy to identify migrants and refugees (Bandini, 2021). In some countries, specific days were determined in which the COVID-19 vaccination is reserved to those who are not under the national health system (Hui, 2018).

Periodic Intensification of Routine Immunisation services (PIRI)

To extend the health services necessary to fulfil the rights of underserved, marginalised, migrant and disadvantaged children and families, the WHO "Action Plan" (WHO Europe, 2014) proposes to build upon proven-effective approaches in reaching underserved groups, such as the "Reaching Every District" strategy. In more detail, WHO Technical guidance (WHO Europe, 2019a) reports that Periodic Intensification of Routine Immunisation services (PIRI) events in target areas could be a potentially important intervention and a useful approach for reaching marginalised people who may remain underserved by routine service delivery and primary health care. Such activities could include enhanced information, education, communication and social mobilisation (encouraging groups to take action/support a common cause), with selected outreach services to reach the pockets of under- or unvaccinated people in the population. In areas of crises and resource challenges, for example in migrant reception settings in Countries of southern Europe and the Mediterranean area, PIRI events and so-called pulse immunisation (simultaneous mass vaccination over a short period of time for all in a susceptible age group) may potentially be an effective way to rapidly provide catch-up immunisation, extending outreach specifically to target populations.

Facilitate community access and proximity health options

Several examples of good practices for promoting the implementation and utilisation of immunisation services carried out by Member States in the WHO European Region aimed at reaching out to high-risk groups through advocacy, communications and supplementary immunisation, including: door-to-door initiatives, screening in high-risk communities, checking of immunisation cards, distribution of information materials (in native languages) and vaccination campaigns (De Vito, 2017).

In particular, the Italian NIP (Italian MoH, 2017) suggests making territorial health services more "familiar" in order to facilitate access, encouraging close collaboration between the Public Health and Hygiene Services, local health unit vaccination operators, cultural mediators and voluntary associations, planning coordinated interventions aimed at increasing contact between the health system and users, using historical vaccination centres to guarantee quality and safety standards for the vaccination act, encouraging familiarity with health services on the part of the community.

Standard procedures to guarantee the migrants' access to vaccination at the community level are in place only in Portugal, where dedicated social workers, if necessary, accompany migrants to health facilities for vaccination (Krishnaswamy, 2018).

To overcome the difficulty of reaching them, it is necessary to identify different vaccination solutions based on specific situations, always preferring proximity public health options: 1. In the same reception center (preferable for large centers) through existing services or through the use of mobile units; 2. At vaccination hubs / centers (in the case of small centers), possibly including accompanying services and linguistic and cultural mediation (Bandini, 2021). Approach strategies with access to services and closely related to asylum centres and high-density refugee neighbourhoods should be developed (WHO Europe, 2018b).

For refugees staying in a reception center, the optimal solution is to organise a focal team responsible for the education on vaccination. This could be done by the staff of the Health Center closest to the center or by assigning specific personnel (from other health centers or contracted for it). In all cases, it is recommended that there is personnel with adequate training in vaccine management. For refugees staying at private housing, they should be assigned to a health center, whose staff, apart from other sanitary actions, need to be in charge of the vaccination process (Guidance – Spain, 2016).

Starting/updating vaccinations after the integration of migrants, through the same health services used by the local population, might facilitate the administration of full vaccination cycles by planning and respecting scheduled time intervals (Giambi, 2017; Tosti, 2021). With regard to irregular migrants, refugees or asylum seekers, vaccinations carried out at secondary retention centres, after arrival in the country where asylum status has been requested, it may be more feasible (but less timely) to complete vaccination schedules (ECDC – Scientific advice, 2015; Tosti, 2021).

Strengthening vaccination and surveillance activities at border crossings, transit hubs and other access points, such as refugee camps, settlements for internally displaced persons, markets and religious gatherings, is recommended. Moreover, investments to implement and strengthen mobile health-data collection tools, such as the regional vaccination card developed for displaced people and the District Health Information System

software used by national health systems, have been proposed as potential methods for documenting and tracking immunization through displacement (Zard, 2021). For homeless people who are not present in the reception facilities, it is recommended to proceed with the mapping of the structures with the contribution of the associations involved, in order to identify people suffering from particular socio-health frailties to be vaccinated immediately, also providing, in some cases, an active vaccination offer with mobile teams in specific places, meeting places (proximity services), such as canteens or places for distributing meals or other services (Bandini, 2021).

School entry offers an opportunity to engage with parents (Wilson, 2018).

Development of migrant-friendly strategies to increase access to vaccinations at the community level, such as dedicated staff, systematic flow of information or formal agreement between centres and immunisation/health services, should be encouraged. Also targeted interventions, for example door to-door vaccination initiatives, media campaigns and health promotion interventions, should be promoted to improve migrant vaccination uptake (Giambi, 2019).

Utilise mobile clinic/team as vaccination centre

WHO Report (WHO Europe, 2019b) describes a type of solution tested in Germany in 2016 to facilitate the immunisation of migrants and refugees. “Vaccinations for all asylum seekers became an integrated step in the initial medical screening process, and, shortly afterwards, this was complemented by a mobile vaccination programme. This aimed to reach all refugees and migrants who had arrived before the first refugee medical screening centre existed in Berlin and who may have had to manage without the required vaccinations. A vaccination shuttle was established, which took refugees from their residence to the medical screening centre. The vaccination shuttle was replaced by the vaccination bus, a mobile medical practice offering vaccinations and examinations that can be parked near the refugee accommodation. A vaccination service for all newly arrived refugees and migrants was established in March 2016 with the launch of structured initial screening. For those who arrived before this date, Charité (Berlin University Hospital) devised a method to make up for the missing initial screening and vaccinations. A bus shuttle service was launched that took refugees to the health screening centre for admission, including vaccination. In this way, initial screening, TB screening and missing vaccinations for approximately 11,000 refugees and migrants were carried out in just four months. In order to reach all unvaccinated asylum seekers, a mobile solution was developed to transport medical staff into the shelters. A bus was converted by the German state railway operator Deutsche Bahn into a mobile medical practice, which proved to be the ideal solution. The bus was parked near refugee shelters and served throughout the day as a vaccination centre”.

Networking and coordination with NGOs

There is a need for improvement in communication with asylum seekers and coordination between agencies within and beyond the medical system. It is important for WHO European Region and policy-makers to develop specific policies addressing the health needs of migrants, including asylum seekers and refugees (Pavli, 2017).

An Italian document suggests also working closely with migrant communities, cultural mediators and non-profit associations (Tavolo Immigrazione Salute (TIS) e Tavolo Asilo e Immigrati (TAI), 2021).

ADHERENCE

Social determinants restrict uptake of vaccinations even after arrival in Europe, including disparities in access to health care, inability to pay, cultural beliefs and discrimination. This results in refugees and migrants generally having greater susceptibility to VPDs than host country populations (WHO Europe, 2019b)

In literature **several barriers are reported to influence utilisation of health services** by immigrants (especially preventive services), including entitlement to health services, linguistic, sociocultural, education level, and low socioeconomic status. (Declich, 2021). In particular, screening services for VPDs (Vaccine Preventable Disease) and vaccination are not always provided to migrants or are not easily accessible (Mipatrini, 2017). A study comparing access to preventive health services between migrants and the general population in five EU countries found that migrants have poorer access to Pap smear tests, colorectal cancer screening, and influenza vaccination than the general population. Differences also exist among migrant groups, with refugees reported to have a lower uptake of services compared with asylum seekers. Undocumented migrants are often excluded from national health services (Declich, 2021).

Migrants may also face **personal and system-level barriers in accessing** statutory health/appropriate health services on arrival and after, for example due to the lack of clarity about the organisation and financing of care, compounded by linguistic and cultural barriers (ECDC Scientific advice, 2018) and, in the case of COVID-19, detailed as barriers to vaccinations also the need for interpretation, cultural mediators, and geographical and transport (ECDC, 2021a)

The European Vaccine Action Plan 2015-2020 (WHO Europe, 2014) proposes some actions to implement tailored, innovative strategies to address identified causes of inequity:

- **Involve representatives of underserved and marginalised populations** throughout the process of developing and delivering tailored service.
- Apply oversight to ensure that immunisation policy is non-discriminatory and that **services are fully inclusive and user friendly**, particularly for marginalised communities and minorities.
- **Train immunisation managers and service providers** to implement new strategies and tailored approaches to underserved and marginalised populations (training on planning and implementing tailored approaches, communication skills, engaging existing community structures and civil society organisations in planning and implementing tailored approaches, monitoring and evaluation).

The **vaccination hesitancy** in the COVID-19 vaccines by undocumented migrants, asylum seekers, and refugees, was caused by different factors: lack of trust in health systems, high levels of misinformation about the vaccine, and hesitancy about having a vaccine (ECDC, 2021a).

Organisational/logistic barriers

A systematic review on barriers to immunisation among NAMs showed that a barrier reported in nine of the studies was simply **not being offered the vaccine**. Many participants indicated that if their provider had recommended the vaccine, they would have accepted it, but as it had not been recommended, they did not believe it was necessary, or may not have been aware of it in order to ask for themselves (Wilson, 2018).

Recommendation by **healthcare providers** (Hargreaves, 2018), as for the HPV vaccine uptake, may be suboptimal due to the prioritisation of mandatory vaccines and because it could be perceived as optional: "*Usually on their first appointment we really focus on what vaccines are mandatory, cause oftentimes, they need 3, sometimes 4 vaccines at one time*." (Rubens-Auguston, 2019)

The WHO explained that health professionals may **lack awareness and experience in providing health care for refugees and migrants (**WHO Europe, 2019b).

In the case of women, some barriers may be an **incorrect advice about antenatal vaccination** from healthcare providers (HCP) concerned about the safety of antenatal vaccination (Krishnaswamy, 2018).

Bartovic and colleagues reported, in the COVID-19 related issues, that "*Decentralised health systems and lack of coordination among local authorities and international stakeholders may have disproportionate negative effects on refugees and migrants*" (Bartovic, 2021).

In the UK the **lack of access points** for the vaccine for migrants facing barriers to primary care was another important obstacle (Deal, 2021).

For refugee children **transportation** issues are observed to be other barriers to immunisation (Shetty, 2019).

Registration through dedicated (online) systems are often required prior to vaccination, which can be confusing, and which often also imply other barriers (technological requirements, language barriers, fear of tracking tools that may lead to arrest or deportation) (IOM, 2021).

In the COVID-19 are reported **geographical and transport** challenges (ECDC, 2021a).

Organisational/logistic solutions

Since 2015, the refugee crisis calls for all countries to review existing immunity gaps in their populations, and to address areas and groups with suboptimal coverage through tailored immunisation services, strong communication and social mobilisation (WHO-UNHCR-UNICEF, 2015). Provision of vaccination should be **impartial and service delivery** to resident migrants, refugees, or population should be considered. Vaccinations should be administered according to the host country schedule and efforts should be made to maintain the same schedule throughout the country, including IDP (Internally Displaced Person) camps, refugees hosted in the community, and areas which are not under government control (WHO Europe, 2017).

Cost-effective interventions to address health care disparities and provide high-quality primary and secondary health care for large numbers of recently arrived migrants remains a major priority for many high-income countries. Increased funding in conjunction with multi-sector collaboration between governments, nongovernmental organisations, and local community agencies are needed to address the complex social, health, and economic needs of refugee and immigrant children and youth (Shetty, 2019).

Health services in migrant centres and camps and **those in communities** have been identified as the more common model in most EU countries as well as among the non-EU countries of the Mediterranean region and the Black Sea basin although there is a large heterogeneity in national policies and practices in Europe (Declich, 2021)

Other organisational solutions have been proposed:

- to **tailor immunisation services** and to **strengthen communication and social mobilisation** toward specific population targets (Mipatrini, 2017);
- develop **guidelines on where and by whom should vaccinations** be delivered for adult migrants (Socha, 2020);
- **healthcare providers** should have the **important role** of recommending and educating women, particularly newly arrived migrant women (Krishnaswamy, 2018);
- **outreach by community peers**, community engagement between people with and without a migration background (Riza, 2018)
- **collaboration** between different service providers, institutions and public bodies, culture-sensitive prevention programmes (eg HIV/AIDS and child immunisation) (Riza, 2018);
- **establishing a nationwide database** with contact details of all institutes, facilities, healthcare professionals and interpreter services experienced in working with migrants and refugees (Riza, 2018);
- **website** that can be searched for these contacts + online anonymous counselling (Riza, 2018).

In the Germany experiences, following the health screening, refugees and migrants receive vaccination counselling as recommended by the Permanent Vaccine Commission at the Robert Koch Institute (the federal public health institute) with **a proximity approach and the use of bus as mobile clinic buses**. Vaccinations then take place. During the first part of the screening process, a medical history is taken for the initial screening, and vaccination information and consent – supported by interpreters – is obtained. A quick and comprehensive vaccination process was established by preparing the vaccination information and consent forms in 19 different languages, considering five age-group targets for each language. The bus is divided into three separate rooms. In the front part of the bus, a doctor carries out the medical briefing and patient history interview, using an online video interpreting system. In the middle room, vaccines are prepared and administered. In the rear of the bus, there is a protected screening area with an examination stretcher and a second access point for the online video interpreting system. It was crucial that the bus be equipped with an online video interpreting system to enable staff to quickly connect (within one or two minutes) to an interpreter for the most common languages spoken by the patients (WHO Europe, 2019b).

Social mobilisation and community outreach planned vaccination programmes, and education campaigns have proved an increase in vaccinations. Social mobilisation and outreach programmes appeared to be associated with the greatest increases in vaccination rates. In Germany, vaccination strategy for asylum seekers works as follows: the local public health office informed about relevant VPDs through direct **mail, posters, and in person, and invited** them to on-site vaccinations in their housing areas. GPs (General Practitioner) carried out the vaccinations. Information about vaccination was provided in **various languages and by interpreters**.

In areas using this strategy, vaccination rates of 58% were achieved, compared with 6% in areas that did not offer comparable services (ECDC Scientific advice, 2018).

In the COVID-19 context, the ECDC suggested different solution (ECDC, 2021a):

- Actively **engaging with affected communities**, pinpointing their concerns and ensuring their voices and needs are adequately reflected in all strategiesStrengthening **engagement and outreach** to a diverse range of at-risk migrant communities

To **engage local leaders** to support community vaccine decision making is a solution proposed by Knights and colleagues (Knights, 2021). Ideally centrally with community representatives actively guiding their development. Policymakers and researchers must be prepared to hand over power and responsibility to communities to lead inclusive, community-centred strategies for increasing COVID-19 vaccination uptake. Members of the community should be ensured they are more meaningfully included through more culturally competent health systems, where greater emphasis is placed on providing care to patients with diverse values and behaviours and tailoring delivery to meet patients' social, cultural and linguistic needs (Crawshaw, 2021).

Outreach efforts should also be complemented by **longer-term strategies to support and encourage underserved members of the community to access health systems so they can be vaccinated** (Crawshaw, 2021). Initiatives carried out by Member States in the WHO European Region that aimed at reaching out to high-risk groups through **advocacy, communications and supplementary immunisation** include:

- media campaigns, including press conferences, website information, local media articles, posters, banners, billboards, videos, and radio and TV talk shows;
- information presentation, such as press conferences, "clown shows" for children and theatre plays;
- immunisation-focused lessons in schools;
- health promotion days and open-door days;
- telephone hotlines (De Vito, 2017)

Strengthen collaborations with local government, relevant charities and community groups, civil society groups, social care services, public health teams and healthcare professionals to develop engagement strategies with migrant communities (ECDC, 2021a). Use innovative approaches to reach communities that don't engage with mainstream services (eg door-to-door knocking, mobile vans; - Provide communities with platforms to share concerns without judgement, eg public forums, focus groups, information sessions; - Distribute messages through local communication channels (local radio, bilingual pharmacies) and using community champions (Crawshaw, 2021);Provide appropriate administrative mechanisms and ensure political commitment to address the existing barriers to vaccination service delivery and utilization; useful interventions include:

- models for collection of relevant data on migrants and refugees that avoid issues of stigma and discrimination;
- effective collaboration on service delivery between national health services, existing social services networks and local service providers in the country;
- inclusive decision-making that involves migrants and refugees during planning and implementation of

vaccination programmes.

Promote strategies to address wider issues such as marginalisation, health literacy and other social determinants of health that contribute to low vaccination coverage among migrants and refugees. (WHO Europe, 2017).

Economic Barriers

Access to health care across the EU is further influenced by financial difficulties (Pavli, 2017) and this causes low vaccination rate (Ortiz, 2020; Rubens-Augustson, 2019).

A survey reported that migrants had to pay for their vaccination when approaching statutory services and the financial contribution also varied by age (Hargreaves, 2018).

In Norway, even if all vaccines are free for infants, children and adolescents, there may be fees for adult vaccinations. Working migrants need to pay for vaccines and that would likely be a burden given the high price for vaccines (Socha, 2020).

Lack of employment may partly reflect an inability to work due to health conditions that are relatively worse than those of employed immigrants, which, in turn, may have favoured the use of services and therefore greater sensitivity and awareness on the issues of treatment and prevention, including vaccinations (Fabiani, 2017).

Socioeconomic issues such as low income can create difficulties in accessing services that require a co-payment, even if it is small (de Vito, 2017).

In Finland the main gaps in financing vaccination services apply to undocumented migrants and EU and EFTA citizens who are not covered by health insurance in their home country (European Observatory on Health Systems and Policies, 2018).

The COVID-19 pandemic has highlighted that issues of cost (both direct healthcare costs and additional out-of-pocket costs associated with seeking care) may deter displaced persons from seeking vaccination, even when they are eligible (Zard, 2021). Costs associated with the vaccine, both direct and indirect (e.g. travel), were also a major factor for many participants, with many unsure if the vaccine would be free despite existing government messaging that the vaccines will not be charged for (Deal, 2021).

Economic Solution

- Integration of free or affordable services for vaccination was most effective at increasing participation among hard-to-reach communities (Ortiz, 2020).
- Need to publicly fund for whom who cannot afford it is recommended (Rubens-Augustson, 2019). NIPs should ensure that migrants and refugees benefit from easy access to the vaccines offered free of charge under the national vaccination schedule (De Vito, 2017). The migrant participants interviewed expressed the need that vaccination should be free for all (Abdi, 2019).
- Important to call vaccine companies to lower the price, in order to be able to vaccinate vulnerable

populations (MSF, 2016).

*In **Finland**, all vaccinations in the national vaccination programme, including against measles, are free of charge for the patient. The purchasing of the national vaccination programme vaccines is funded from the state budget. The vaccination services are organised by the municipal primary care authorities and funded by the municipalities. The municipalities have the right to levy taxes and they also receive state subsidies. Some large municipalities, such as Helsinki, Espoo and Turku, have decided to provide health services not granted by national legislation to these groups (undocumented migrants and EU and ETA citizens who are not covered by health insurance in their home country). These services include childhood vaccinations* (European Observatory on Health Systems and Policies, 2018).

*In **Italy** the system covers the entire resident population, including non-EU citizens with a regular residence permit and their dependent family members legally residing in Italy. Irregular immigrants are also entitled to receive vaccinations free of charge* (European Observatory on Health Systems and Policies, 2018).

Also in the case of COVID-19 vaccination the literature showed that if there would be no associated costs, many more people from migrants communities would enable to present for a vaccine (Deal, 2021; Thomas, 2021a)

Legal Barriers

The COVID-19 has highlighted that in some countries, health workers are required to **report to immigration authorities** migrants in irregular situations attempting to access health services, which leads to fear of arrest/deportation (IOM, 2021).

Policies of other government sectors (such as immigration, justice or interior and home affairs) on deportation of irregular migrants also influence utilisation of vaccination services by refugee and migrant groups (WHO Europe, 2019a)

Legal Solutions

Governments should consider setting up vaccination **centres that do not require formal identification or registration before vaccination**. Coordination among governmental agencies from health and immigration sectors will be needed to ensure **vaccination programmes are not used by immigration authorities** for tracking or enforcement. A **moratorium on prosecuting undocumented** migrants may also encourage vaccination uptake (Teerawattananon, 2021).

Psycho-social Barriers

There are some psycho-social aspects, which may interfere with vaccination: **the lack of motivation and the low risk perception.** The immunisation is something that generally doesn't cross their mind as a result of being

‘‘lazy” or due to competing priorities (new arrivals need to balance finding employment and housing, alongside getting catch-up vaccines); the lack of health education largely attributed to a lack of access to health information (Abdi, 2019).

Stigma and Fear of reporting by vaccination services

Migrants in an irregular situation may fear that visits to healthcare services may be reported to immigration law enforcement authorities. (ECDC Scientific advice, 2018).

Populations at particularly high risk include migrants in an irregular situation, who may fear being reported to migration authorities, and unaccompanied minors, who lack information about their rights and guidance in seeking health care (WHO Europe, 2018b).

Refugees and migrants may even refuse vaccination and registration with health authorities if they have concerns about their legal status and the possibility of legal consequences if they become noticed (WHO Europe, 2019a).

The COVID-19 has emphasised that the distrust of authorities and fears related to disclosure of immigration status, may deter displaced persons from seeking vaccination, even when they are eligible (Zard, 2021).

There are stigma around diseases and fear of accessing care due to precarious immigration status, lack of knowledge about how to negotiate the host health system, and an inability to communicate effectively with awareness among migrant populations (Noori, 2021).

Sometimes the psychological issue can be a barrier to the vaccination adherence. Fear of being asked of their legal status or being identified were always present, affecting the everyday life of the undocumented families and children (Godoy-Ramirez, 2019). Migrants refuse vaccination and registration by medical authorities for the fear of legal consequences (Mipatrini, 2017; Sypsa, 2016, Vita, 2019).

In occasion of the COVID-19 vaccinations the barrier caused by the discrimination related to disclosure of immigration status and the fear of punitive action if they step forward for vaccination affected specially the undocumented migrants (Teerawattananon, 2021; Zard, 2021).

Lack of trust in the health and vaccination system

Many families are afraid of visiting healthcare facilities because of lack of trust in the health staff based on their previous experiences (Godoy-Ramirez, 2019). The lack of trust causes reluctance to consent (Perry, 2020).

Workers may have a well-founded distrust of government and healthcare organisations (based on historic relationships with immigrant mobile populations) (Thomas, 2021a). Distrust and low confidence in the vaccination system was reported also in the case of COVID-19 vaccinations and may be a barrier for migrants vaccination even if they are eligible (Deal, 2021; Zard, 2021). Overall, a general mistrust of provider/ government/ vaccines (including recommendation) (Wilson, 2018)

The WHO showed as **mistrust of health-care providers, experiences of discrimination or stigmatization** and issues related to acculturation and low levels of integration of refugees and migrants might cause vaccination hesitancy (WHO 2019b).

Psycho-social Solutions

Ensure all that vaccination is **voluntary, confidential, non-stigmatising**. Address the individual, community and health system barriers (for example, low risk perception; disease related stigma; socio-economic, cultural and linguistic barriers). Recognise that NAMs face a range of issues (for example, housing, employment, mental health problems) that may take precedence over seeking preventative healthcare (ECDC Scientific advice, 2018).

Build migrants' confidence in vaccine development through transparency, representation in vaccine trials, recognition of research contributions; - build partnership with community organisations and leverage existing networks (eg school); - Ensure continuous, inclusive engagement adapted to local circumstances and contexts, using active and motivational communication approaches; make vaccine uptake visible: identify recognizable public figures who are willing to get vaccinated publicly, and encourage sharing on social media; - identify respected, trusted and multilingual community champions to deliver messages and facilitate dialogue (Crawshaw, 2021)

In the Godoy-Ramirez study, the interviewed nurses pointed out that they cannot ask too many questions at once, and they have to assess the situation carefully to not scare the families (Godoy-Ramirez, 2019).

To avoid the fear of legal troubles, communication campaigns should be organised to clarify the advantages of vaccination and the complete **lack of legal consequences** (Mipatrini, 2017).

Concerning the fear of legal consequences during the COVID-19 vaccination, immunisation programmes targeted through **trusted community health workers or non-profit organisations** may be one way to encourage uptake. Transparent communication of the prioritisation process is important to ensure public acceptance of this approach, as was done in Singapore, where migrant workers were prioritised for vaccination alongside older adults and essential health workers. The pandemic may also encourage companies to ensure that all employees are registered and offered vaccination to avoid outbreaks that could jeopardise productivity (Teerawattananon, 2021).

Appropriate PIRI (periodic intensification of routine immunisation) activities can address the challenges associated with the mobile nature of refugees and migrants, who are often marginalised from health systems and may avoid contact with authorities through fears of repatriation or removal, among other reasons. Assurance should be given that PIRI activities would not trigger such negative consequences (WHO Europe, 2019a)

Cultural and Linguistic Barriers

Although eligibility of migrants to immunisation services offered as part of national immunisation programs is almost universal, language barriers, cultural differences as well as low level of education, illiteracy, cultural attitudes, may lead to delayed presentation or the inappropriate use of health services(Giambi, 2017; WHO Europe, 2018b),also in the case of COVID-19 immunisation (ECDC, 2021a; IOM, 2021), or could potentially impede care-seeking to the point that the immigrant’s first contact with the health care system is on an emergency basis (Prymula 2018).

The accessibility also relates to the **difficulty of navigating the health system** for people with **limited health literacy and language or cultural barriers**. Language barriers and the **lack of culturally sensitive information and resources in relevant languages** contribute to difficulties in understanding written information, as well as in communicating effectively during consultations about VPDs, vaccines and vaccine safety. This communication difficulty also hinders the ability of practitioners to gain informed consent, report on any adverse events and assess the impact of diagnosis, treatment and adherence for any medical conditions (WHO Europe, 2019a).

During the COVID-19 vaccinations campaign potential reluctance to vaccinate due to ethnicity-related factors, including religion, upbringing and belief also influence immunisation decisions, **poor understanding of the host country's health system, language and cultural barriers and poor doctor–patient relationships**; the consequent misinformation influence immunisation decisions (Crawshaw, 2021). Challenges with communicating are reported in literature, especially with certain migrant populations and communities (ECDC, 2021b) or in consideration of the lack of accessible information sources around COVID-19 vaccine (Deal, 2021).

Vaccine hesitancy or outright anti vaccination attitudes, from a belief that vaccinations are unnecessary, particularly if the disease is rare or not life threatening; concerns also surround vaccine safety, particularly if the vaccine is relatively new (WHO Europe, 2019a); peer influence from non-vaccinating peers/family members (Wilson, 2018) or general anti-vaccination sentiment (McComb, 2018)

Previously knowledge gaps, misinformation and fake news on vaccines

Traditional beliefs of migrants may play a role in the value placed on outcomes of infectious disease interventions. **Incorrect knowledge of infectious diseases** and their risk factors and transmission are barriers to acceptability of screening and vaccination. Poor patient-doctor communication, and reliance on professional opinion, discouraged testing and vaccine uptake (Driedger, 2018). Many migrants are not availing themselves of vaccination due to **misconceptions about vaccines, complacency, low awareness** of benefits of vaccines and religious or philosophical beliefs (WHO-UNHCR-UNICEF, 2015) and a general belief of low risk of infection (Wilson, 2018)

Refugees and migrants have different cultural, social or religious norms and values surrounding their **perceptions of health and illness**, their causes and their prevention. These norms and values, including around the use of traditional medicines or when to see physicians for example, significantly influence their perceptions and decision-making in regards to vaccines (WHO Europe, 2019a).

In general the follow knowledge gaps are reported:

- **Lack of knowledge of the health system, vaccination schedule and relevant VPDs** in the host country, as well as concerns related to vaccine safety, are important obstacles to vaccination uptake (WHO Europe, 2019a) (Wilson, 2018):
- Lack of **knowledge about virus being prevented/role** in other health problems (Wilson, 2018).
- Belief that **vaccine is unnecessary, optional** and perception of low effectiveness of vaccines (Wilson, 2018)

In relation to HPV vaccinations the following gaps are reported:

- little, if any, previous knowledge about HPV, cervical cancer, how it is transmitted, or the fact that there

was a vaccine to protect against it (Rubens-Augustson, 2019) (McComb, 2018) (Allen, 2019)

- Sub-Saharan African and Middle Eastern Refugee women who have resettled in California showed lack of knowledge surrounding the prevalence and cause of cervical cancer. The vast majority of women had never heard of the HPV vaccination and denied having had their children vaccinated. There was also confusion regarding the recommendation to vaccinate male children (Ghebrendrias, 2021).

Conditions for rampant spread of **misinformation** through the community interested all the vaccines and also the immunisation against COVID-19 (Knights, 2021; Thomas, 2021a). An Italian survey on the propensity to vaccinate against COVID-19 by people living in asylum centres reported that the main **information source** is represented by television/radio (50,0%); followed by having talked about it with a friend/countryman (39,4%) or social network (1/3). Those who turn to TV/radio are mainly people who have been in Italy for 1-5 years or more; while for those who have been in Italy for <1 year, friends/countrymen count more (also because of the language barrier). Less important are direct information provided by the health professional (declared by only 1 out of 10 respondents) and the reference of one's own religious community (8.3%).. Unofficial mediated sources prevail; the public information provided (by radio and TV) is neither complete and exhaustive nor able to break down the sphere of doubt and distrust (Tavolo Asilo e Immigrazione, 2021).

Reasons related to **scientifically unsubstantiated information** are given as another reason for non-adherence to the vaccine. The prevailing reason (46% of responses) is that "the vaccine may be dangerous". This is followed by "I don't trust health workers and the information they give" (15.3%) and then "the vaccine is not compulsory so it is not necessary" (11.9%) or even "the covid is not dangerous" (9.1%); "I have already had the covid" (2.8%). Arguments linked to the cultural/religious convictions of the persons interviewed (3.4% of cases) do not appear (Tavolo Asilo e Immigrazione, 2021).

Fear of adverse reaction and concern about safety

Parents were mainly concerned that their children would develop high fever after immunisation and needing medical attention. Some parents were also worried about the pain associated with the injection (Godoy-Ramirez, 2019).

Concern about side effects, safety; especially about newness of vaccine (Wilson, 2018):

Lack of culturally competent services

Some barriers about the cultural competence of the services are reported in literature:

- Challenges appear to exist with some **HCPs' motivation to use translators** and their knowledge of how to arrange and effectively use translators in their clinical services. Potential barriers to using translators should be further explored to ensure providing appropriate and accessible healthcare (Socha, 2020).
- Lack of human resources, in particular **cultural mediators and/or interpreters for setting up culturally competent service**, is seen as a barrier to the effective implementation of national immunisation policies and to the systematic collection and evaluation of data for corrective actions. (De Vito, 2017).

"Attention must be paid to **ensure that primary health services are diversity sensitive**. Despite the potential for primary health services for promoting vaccine delivery, refugees and migrants were found to use primary

health services less than host populations in six European countries; differences in lifestyles, health beliefs and specific risk factors can significantly impact participation in preventive programmes. Continued communication with these target groups should be maintained to develop the credibility of the health system and trust in it, and to reinforce the need for routine immunisation"(WHO Europe, 2019a).)

Access to health care across the EU is influenced by **cultural problems** (European Observatory on Health Systems and Policies, 2018) (Pavli, 2017,) and by **culturally unappropriate healthcare** (Wilson, 2018), such as (Wilson, 2018):

- **cultural norms**
- **religious aspects**: religion, upbringing and perceived beliefs are known to positively or negatively influence immunisation decisions and demand for information, also for the COVID-19 immunisation (ECDC, 2021a)
- lack of discussion of sexuality, **cultural taboos** (above all about HPV). Hesitancy to the HPV vaccine, especially upon learning that HPV is sexually transmitted. Sexuality and sexual health are often a taboo subject among certain cultures in the newcomer community (Rubens-Augustson, 2019) or vaccination as a sign of sexual promiscuity (McComb, 2018)
- The WHO reported that in several countries some groups are unwilling to use immunization services because of strongly held cultural norms or religious traditions, for example concerns that vaccinating children and adolescents against human papillomavirus would allow or encourage them to engage in sexual activity (WHO Europe, 2019a).
- **gender roles**: women's health not valued or men less likely to use the healthcare system (Wilson, 2018)

Limited health literacy and lack of appropriate information and language aids

The lack of **availability of translated resources** is a common issue (Abdi, 2019), and when resources are available they are translated only in a few languages (Rubens-Augustson, 2019). This causes difficulties in advocating and consenting for vaccination (European Observatory on Health Systems and Policies, 2018).

The **lack of vaccination information** (Perry, 2020) might limit the access to vaccinations. Communication problems due to insufficient information about preventive services, **poor language skills and limited health literacy** make it more difficult for migrants to obtain health information to make informed decisions. Also, **needs and expectations** that are not sufficiently taken into account by health care facilities can lead to limited satisfaction with care (Razum, 2020).

The WHO reported that some migrants may have difficulties in accessing health services worldwide, and they may lack the necessary information on their health rights and may also face communication problems because of cultural and language differences (WHO Europe, 2019b).

Lack of appropriate language aids is a major barrier for access to the health system by refugees and migrants, and the paucity of information in their native languages in the host country can reduce confidence and competence for accessing vaccination, as well as trust of, and compliance with recommendations (WHO

Europe, 2019a). Health promotional resources are not at an appropriate literacy level for NAMs to be able to understand the purpose of the vaccine (Rubens-Augustson, 2019).

Linguistic barriers were also an important factor for a vulnerable population, as migrant women might be, that require translation services when receiving care and have **limited literacy in both English and their native language** (Ghebrendrias, 2021); or as migrant parents that may have language or health literacy challenges and even if their child is on the register, they may not understand the invitation letters (European Observatory on Health Systems and Policies, 2018).

Health, social and police workers poorly trained

A common issue is the **poor level of training for health care providers** on migrants' health needs, entitlement to health care and culture. Professionals or administrative personnel who are not adequately trained are not only likely to contribute to a lower quality of service but also may assume detrimental inappropriate behaviours and stereotypical attitudes towards migrants. Sociocultural issues include, on the one hand, marginalization, discrimination and stigmatization and, on the other hand, a low level of integration, difficulties in adaptation, acculturation, family background, and cultural and language barriers (De Vito, 2017). People may find that their health worker does not provide the support they need, others may have concerns about vaccine safety, or do not trust the health authorities. Some may not have been properly informed about when and where to go for (WHO Europe, 2019c).

Another aspect is that the monitoring of vaccination and disease knowledge and attitudes and health-seeking behaviours are limited in the Region, which compromises the ability of authorities to respond adequately to the specific service delivery and information needs of susceptible and vulnerable populations, to successfully **counter anti-vaccination sentiment and to tackle vaccine hesitancy** (WHO Europe, 2014).

Cultural and Linguistic Solutions

Health promotion and education are especially important for refugees and migrants because often they are not familiar with the health systems of the country of destination and so lack knowledge of what kind of support is available, whether they are entitled to it and how they can access it (WHO Europe, 2018c).

Specific subgroups of immigrants should be taken into account in the implementation of the general measures proposed to overcome linguistic barriers, which include the use of information material translated into different languages, staff training and the activation of services tailored to the specific needs of migrants and the identification and training of foreign cultural mediators to inform and motivate immigrants on access to vaccination services (Fabiani, 2017).

Furthermore, as also **COVID-19 immunisation** strategies had underlined, more targeted and less generalised communication efforts would be needed, specifically **enhanced language and tools, with the help of intercultural mediation**, to better convey the message of the importance of vaccination (Tavolo Asilo e Immigrazione, 2021)

Linguistic solutions

The ECDC suggested that information regarding immunisation should be available in **multiple languages**, particularly those most commonly spoken by newly arriving migrants (ECDC Scientific advice, 2018) and communication initiatives about COVID-19 vaccination **be aimed at specific groups** (ECDC, 2021b).

It should be assessed whether language support is necessary for communication and understanding of documents (**interpreters**) and if **gender specific attention** is needed (care of women by women) (Huerta González, 2016).

Turkey's health interventions for refugees and migrants have occurred in many areas, such as establishing migrant health centres designed to be **sensitive to the needs** of refugees and migrants, **awareness-promoting activities** for health services and the employment of **bilingual health professionals** for easier navigation in the system. Bilingual patient guides have been trained to help patients to navigate the health system without being inhibited by a language barrier. Furthermore, protective health services are provided in polyclinics affiliated to community health centres that have been established to overcome language barriers through foreigner polyclinics and family health centres (WHO Europe, 2019b).

Informed consent should be translated into multiple languages and via interpreters with simplified and understandable messages about the purpose and methods of implementation of the intervention (Bandini, 2021)

In addition, it could be helpful **to simplify and disseminate** as much as possible correct information for those without any level of education, and refine information tools for the graduates (Tavolo Asilo e Immigrazione, 2021). Clear and concise written and visual resources for different language/literacy needs should be developed (Crawshaw, 2021),

In Italy, during the COVID-19 emergency, were available posters "health in times of COVID" and brochures translated into various languages to promote the access of the foreign population to public health services in the Lazio Region, immunisation included (Epicentro, 2021a; Epicentro, 2021b).

Professional medical interpreters (rather than family members or other ad hoc untrained people) and multilingual information materials can support positive patient–provider interactions and enhance patient understanding (WHO Europe, 2019a) Provide simple, accurate resources in a range of languages, literacy levels and formats, including for those with no access to internet/digital services; - Tailor messages to communities, using local phrases, humour, cultural references and values (Crawshaw, 2021).

Culturally sensitive ways to approach migrants

To ethically offer interventions, it is needed to **understand the perspective of migrants** regarding the acceptability of interventions, value placed on outcomes, and accessibility of prevention, screening and treatment of infectious disease interventions in the EU/EEA. Existing strategies to improve access to healthcare for migrants include support for transportation, interpreters, and cultural brokers (Huerta González, 2016; Driedger, 2018).

The WHO suggested that vaccination initiatives for refugees and migrants, therefore, must have an understanding of the needs of these groups and actively **address relevant cultural norms and perceptions** in order to devise appropriate interventions. Vaccination initiatives must take into consideration different health-

seeking behaviours, preferred models of care and the use of different social support groups in decision-making, such as family, friends or health professionals. In the end, special attention should be paid to refugees, migrants and other marginalised communities in ensuring their eligibility and access to culturally appropriate immunisation services and information (WHO Europe, 2019a).

Abdi and colleagues (Abdi, 2019) suggested to provide **culturally and linguistically appropriate resources to empower** newly arrived refugees and migrants to gain a better understanding of immunisation; ethno-specific community organisations should play a greater role in the dissemination of health information. Individuals should receive vaccine information in a primary language, in a culturally appropriate manner, and from a trusted source (Williams, 2016; Thomas, 2021b). .It will be important to think carefully about how to do this, to ensure that the rationale for doing so and the methods used are accepted by migrant communities, some of whom may be concerned about interactions with statutory authorities. This may be mitigated by **recruitment of community and health workers from migrant groups**, and by policies that take advantage of research from other areas of health policy that highlight the need to take full account of the legal and cultural issues pertaining to each country, including the entitlement to health care and the levels of racism and xenophobia (Williams, 2016).

The following solutions to improve the HPV vaccinations are reported in literature:

- It will be important to create informational resources and opportunities tailored to the language and cultural needs of NAMs to overcome personal barriers to HPV vaccination, such as providing access to **female healthcare providers** for female patients and having interpretation services readily available (Rubens-Augustson, 2019)
- Once educated about HPV, NAMs are very accepting of the vaccine. The recent decision to include boys in the school-based program would likely de-stigmatize the vaccine and lead to greater acceptance overall. Probably lowering the age of vaccination against HPV and administering it at the same time as other vaccines would put it into the **context of health, as opposed to sexuality** (Rubens-Augustson, 2019).
- Develop **group sessions** geared toward HPV vaccine education (Ghebrendrias, 2021)

COVID-19 vaccination organisations also underlined the need to ensure a **culturally competent health service** (Bandini, 2021):

- health personnel with cultural skills to avoid discriminatory behaviour that could reinforce stigma and prevent refugees and migrants from accessing health services;
- to have culturally oriented and linguistically appropriate and multilingual information materials;
- direct involvement of immigrant communities and cultural mediators and / or third sector associations to encourage the transmission of key messages for prevention in the languages understood by migrants and in a culturally appropriate manner and to prevent the dissemination of incorrect information

To ensure equitable COVID-19 service delivery and use, policy-makers must guarantee **a culturally competent health-care service**. Medical staff should be trained in cultural competency to avoid discriminatory behaviour that might reinforce stigma and inhibit refugees and migrants from accessing health services. Refugees and migrants should receive culturally and linguistically appropriate immunisation messages and practices. Refugees and migrants' awareness of their health rights must be prioritised, particularly for irregular migrants and those in transit, developing training and awareness of health-care providers; establishing health literacy

education programmes (Bartovic, 2021).

Trained health, social and police workers

As reported by WHO, the cultural competence and cultural awareness of **health-care practitioners and vaccinators** needs to be strengthened to adequately respond to the needs of refugees and migrants: the more awareness among practitioners about the cultural background of their patient, the higher the quality of care they can provide. The use of cultural mediators can be helpful in facilitating productive cross-cultural patient–provider dialogue and should be encouraged within immunisation programmes. Such mediators have been found to be effective educators, health promoters and health-care system navigators for refugees and migrants, mitigating key barriers to care (WHO Europe, 2019a)

Generating and maintaining demand for immunisation services and **addressing vaccine hesitancy** in the European Region will require use of traditional and new social communication platforms, optimising the role of front-line health care workers, identifying and leveraging immunisation champions and agents of change, tailoring immunisation programme advocacy and communication to susceptible populations, including mobile, marginalised and migrant populations, and communicating the benefits of immunisation and the risks presented by VPDs (WHO Europe, 2014).

Cultural mediators can plan interventions to increase demand at the community level, increase access to services, and improve communication between users and operators. The strategy is one of accompaniment, mediation and familiarisation with existing vaccination services. Possibility of Home visits by mediators (Italian MoH, 2017).

Specific training, resources and communication services (i.e. cultural mediators, interpreters) to support vaccine roll-out for health care providers should be available, or improved, for the promotion of an inclusive and culturally sensitive health system (Pavli, 2017; Crawshaw, 2021).

The use of professional medical interpreters improves the quality of communication, and studies have found that using professional interpreters also reduces the cost of care and helps to avoid unnecessary diagnostic evaluations and treatments. Cultural mediators facilitate the care process by explaining health concepts and health behaviours, and by helping to ensure that investigations and treatments take into account culturally specific needs (WHO Europe, 2018b; Crawshaw, 2021).

Communication channels

Greater emphasis needs to be placed on improving communication regarding the **benefits and safety of vaccination** and in engagement with refugee and migrant communities to encourage these groups to take action/support a common cause. Communication and advocacy strategies, including engagement of mainstream and **social media** and other relevant channels, should be tailored to ensure that evidence and information, as appropriate, reaches target refugee and migrant communities. Such strategies must also evolve over time and adapt to changes with regard to vaccines and the expectations and knowledge of these groups towards vaccination services (WHO Europe, 2019a). **Physicians** are trusted sources of information and taking the time to recommend a vaccine can be very valuable in promoting vaccine uptake. Healthcare providers

should utilise this influence to equip patients with the knowledge they need to make informed choices (Wilson, 2018).

Primary care providers may be the main, if not the sole, source of information about vaccination for some groups of refugees and migrants, especially in a new environment where familial and social support systems, that usually provide important sources of health promotion or information and advice, are lost. The important role is played by the primary care providers in giving vaccine-related information to refugees and migrants and it highlights the need to strengthen communication strategies in order to reduce missed opportunities during all patient–provider interactions. Comprehensive and integrated care for assorted health issues increases uptake and coverage of preventive programmes, including vaccination. Integration of vaccination into broader primary health services in this way can help to support other public health priorities and vice versa, as one primary health care activity can mutually reinforce another" (WHO Europe, 2019a),

Need to develop enhanced community outreach and education with families and community leaders, making use of key community events and using physicians but ensuring vaccination convenience by bringing vaccines to people, rather than people to vaccines (Ortiz, 2020; Thomas, 2021b; Shetty, 2019).

Some strategies to reduce communication barriers during COVID-19 vaccination are reported (Crawshaw, 2021; Deal, 2021):

- Holistic information **campaigns in multiple formats and languages** to increase reach;
- **campaigns to counter common misinformation** circulating on the COVID-19 vaccine in communities making accessible information on side-effects, contraindications, contents;
- Information should be **tailored for specific groups**, and presented in a sympathetic, culturally appropriate and understandable manner;
- Encourage the spread of information via word-of-mouth/social media by individuals who have taken the vaccine;
- **Existing, effective and trusted channels** should be used, for example charities, food banks, asylum hotels, TV channels, GP practices, NGOs, community groups;
- **Local community champions** should act as an information point for both those in their community and by those designing tailored information campaigns, with sufficient training to ensure effective delivery of methods;
- **campaigns to increase trust** in the primary care systems, without immigration checks or data sharing; increased collaboration with charities and community groups who are a major source of healthcare and information to precarious migrants;
- a series of participatory community workshops conducted with **migrant community leaders**, mistrust and unwillingness to vaccinate for COVID-19 were reported, with concerns raised about the extent of misleading COVID-19 vaccination information circulating in their communities via social media (including TikTok, Facebook and Whatsapp) and the perceived low representation of their communities in vaccine trials.

The most common approach the women suggested for promoting awareness was through workshops at **community centres** or education strategies at community gatherings; this could help raise awareness. The

women agreed that websites would be a good way to get information as also **Social media**. Only few participants felt that phone-based strategies could help increase Pap test and HPV vaccination uptake (Allen, 2019).

Community engagement and effort to counteract misinformation and fake news on vaccines

Timely related to COVID-19 vaccinations, **engaging and listening to communities** is also critical, through risk communication and education, mobilising trusted community and religious leaders, and involving community members, including displaced populations, in vaccine activities (Zard, 2021). The ECDC suggested that public health information should be **co-produced with affected communities**, and translated into key migrant languages and effectively disseminated (ECDC, 2021a).

To reach vulnerable populations in COVID-19 vaccinations, ECDC suggested to provide information in several languages and to target communication initiatives, based on specific needs assessments (ECDC, 2021b). In Austria, stakeholder communication measures are being rolled out on the basis of elaborate interdisciplinary **needs assessments**, with a strong focus on vulnerable groups (e.g.,. groups affected by language barriers or groups less likely to be reached by the governmental information campaign or nationwide media outlets (ECDC, 2021b).

The improvement of **community outreach and engagement strategies** for underserved subjects, and reliable immunisation information (e.g., outreach to community-based organizations with trusted relationships, training, and hiring of persons from the community to serve the community; inclusion of community voices in leadership and planning; and execution of vaccination efforts through liaisons or Community Advisory Board) (Armocida, 2021; Thomas, 2021b)

Educational materials about vaccines should be provided in a variety of languages and literacy levels, in culturally appropriate contexts (Wilson, 2018).

Population diversity should be better recognized by policymakers. This will require actively and meaningfully **engaging with communities** to understand their concerns or barriers to vaccination and working together to co-develop tailored approaches to encourage uptake and rebuild trust. Approaches offering a collaborative model of research are necessary, where researchers, social scientists, community stakeholders and end-users work in partnership to identify a problem and co-produce knowledge, empowering communities to implement sustainable change. Community outreach and engagement could be improved through a variety of platforms, settings and messengers (e.g. opinion leaders and community champions) (Crawshaw, 2021).

There are several **solutions to avoid the COVID-19 vaccination hesitancy** suggested by ECDC (ECDC, 2021a):

- Inclusion of migrant populations in information campaigns and timely dissemination of public health guidelines.
- Tailored and targeted information and communication.
- Counter misinformation and tailor messages to communities, using local phrases, humour, cultural references and values; address generational differences.

- Improved outreach to places of worship, co-designing delivery approaches with the communities themselves, and engaging formal and informal opinion leaders and migrant ambassadors from these communities.
- Greater transparency around COVID-19 vaccine development and testing, as well as safety and efficacy information, to alleviate concerns around a perceived ‘rushed’ vaccine and encourage uptake. Identify respected, trusted and multilingual community champions to deliver messages and facilitate dialogue.
- Provide specific training and resources to healthcare providers to support vaccine roll-out.
- Actively involve communities in identifying preferred communication channels, formats and venues for messaging and vaccination.

ACHIEVEMENT

There are challenges in deciding **when and where** to vaccinate. The situation is compounded further by the fact that many vaccines require **consecutive doses in timed intervals** (WHO-UNHCR-UNICEF, 2015).
Main practical challenges experienced in migrants' access to vaccination and/or application of procedures for migrant immunisation are: low resources, lack of operative procedures, need of specific training of health care workers on migrant health, scarce collaboration with other health institutions, low compliance of migrants to vaccinations, logistic issues, waiting time, difficulties due to the short time of stay of migrants, language barriers, the high frequency of relocation in different structures, difficulty of migrants to get other vaccinations out of the hosting centre (Del Manso, 2017; Dalla Zuanna, 2018). The responders to a survey would also suggest carrying out normal immunisation programs, instead of running mass vaccinations (Del Manso, 2017).

Organisational barriers

A qualitative analysis in Norway reported that some municipalities have not designed a **clear and coordinated system** for ensuring that adult migrants are vaccinated. This can lead to a lack of clarity around the division of responsibilities among HCPs and vaccinations not being offered to adult migrants (Socha, 2020).
As already mentioned in the previous bubs, several practical barriers may prevent migrants from enjoying the right to healthcare: unawareness of entitlements, administrative requirements (e.g. proof of lack of financial means; requirement to register with a general practitioner) and, for migrants in an irregular situation, the fear that visits to healthcare services may be reported to immigration law enforcement authorities. In some EU/EEA Member States, there are additional barriers such as the requirement to provide an identity document or proof of residence in the host country or in a particular city (ECDC Scientific advice, 2018).

Barriers related to the lack of specific documents/certificates required for vaccination

The emergency linked to the SARS-Cov-2 pandemic has highlighted organisational barriers, linked to the anti-COVID-19 vaccination, which in many cases can be extended to the other vaccinations provided by the NIPs. In fact, in many Countries, despite the right to be vaccinated, the **current reservation system is only accessible through a social security number**, making the access to vaccination for undocumented migrants challenging (Armocida, 2021; Geraci, 2021; PICUM, 2021; Godoy-Ramirez, 2019). In some cases, the strategic plan states that vaccinations are based on domicile address in the nation and the working situation (Belgium), thus practical inclusion of irregular migrants would be challenging, even though they are entitled to vaccination (Armocida, 2021). In Italy, exclusive vaccine booking for COVID-19 vaccination was only possible through the national / regional platform, or through GP (Bandini, 2021).
Generalising, **specific documents are often required**, creating a spectrum of barriers that IOM graduates from low to high; low: some countries will accept any form of ID, valid or not, expired or not, and from anywhere, only

to verify the identity; medium: other countries require specific types of documents (e.g. residence permit, host country insurance cards), which constitutes a higher barrier, but those documents are accepted even if expired; high: other countries require specific types of documents that are still valid (IOM, 2021).

Difficulties in assessing vaccination status and lack of documentation on previous vaccinations

Sometimes, as the wars in the native countries may have interrupted vaccination programmes, documentation may be unavailable or unreliable (Prymula, 2018). Most of the migrants have uncertain vaccination status, including incomplete vaccination history and/or **missing documentation of previous vaccinations** (Karnaki, 2018a).

Often, the vaccination status cannot be verified (Robert Koch-Institut Bulletin, 2020; Hui, 2018) due to the lack of documents (i.e., vaccination cards) (Giambi, 2017; Pavli 2017; Karnaki, 2018b; Declich, 2021).

As regard to children, not having their vaccination history, the vaccination status is unknown (Garcia Galan, 2007; Italian MoH, 2017; Riza, 2018) and cannot be traced through official and reliable channels" (Regione Toscana 2019).

COVID-19 Health professionals may only be able to address imminent health risks, whereas determining the need for vaccination requires **assessing a person's vaccination history** and comparing it with the host country's routine schedule. Follow-ups would also be needed to ensure all necessary doses are received (Bartovic, 2021).

Difficulty in carrying out successive doses, within and across countries

Migrants are moving throughout European Countries (Mipatrini, 2017) and many vaccines require two or three doses at timed intervals and the follow up of the full immunisation series. "As multiple doses of vaccines must be given at defined intervals, ensuring appropriate follow-up and completion of the full schedule of vaccines is difficult when people are on the move" (WHO UNHCR UNICEF, 2015; WHO Europe, 2019a; Giambi, 2017). In particular, in Greece it is reported as an obstacle for completing the three-dose vaccination schedule of HBV (Sypsa, 2016). These difficulties relate to particular populations, as the people moving from one camp to another, making vaccination follow up difficult (Mellou, 2019). As regards to children, the follow-up of their health and immunisation status is complicated by frequent mobility of their families, because of their illegal status (Goody-Ramirez, 2019).

The time needed for completing the primary series should be taken into account in relation to the logistics of potential transfers to other camps or other settings. Updating vaccination might not be possible at the point of entry and refugees are unlikely to keep any vaccination records when they plan to request asylum status in another country, so follow-up could be challenging (ECDC – Scientific advice, 2015)

Also regarding COVID-19 vaccination, non-sedentary populations represent a challenge, as they are difficult to reach for the second dose (Bandini, 2021). Logistical hurdles make it difficult to deliver vaccines in some countries. The concern is particularly prevalent in emergency contexts where there is a high number of IDPs (IOM, 2021).

Information on vaccinations carried out is not shared within and among countries

A barrier to the provision of routine and intensified vaccination services to refugees and migrants is the documentation of vaccination doses already provided. Accessible and reliable vaccination records are important to enable public health authorities to identify and reach underserved groups, as well as to allow practitioners to determine catch-up vaccination sessions and **avoid duplication of vaccination doses** (WHO Europe, 2019a).
The lack of coordination among public health authorities of **neighbouring countries** may determine either duplications or lack of vaccine administration (Mipatrini, 2017). Moreover, there is often no information on the immunisation status of migrants and refugees and there are no harmonised indicators across different European countries (Mipatrini, 2017).
Barriers in the data collection are reported. Data collection methods are very heterogeneous (paper or electronic registries; databases specific for migrants or for the general population), making it **difficult to exchange and share information** within and across countries (Giambi, 2019). Countries where information on administered doses is archived in national databases might not routinely share their data with other countries (Giambi, 2017). There is also a lack of data transmission among EU/EEA countries (Noori, 2021).

Vaccine price and shortage

The price of vaccine and the vaccine shortages have also been identified as supply-side challenges to provision of immunisation services for refugees and migrants in the WHO European Region (WHO Europe, 2019a).
Still about the COVID-19 vaccine, the **overall limited supply of doses** across the world continues to make it difficult de facto for many people to have access to vaccinations, including nationals, but this affects particularly marginalised communities, for example migrants in irregular situations (IOM, 2021).

Health system capacity and delivery

Limitations in the host country's health system capacity and the lack of much-needed **financial and human resources** have been identified as other important factors impacting the implementation of national recommendations and policies and the supply of immunisation services at the local level to refugees and migrants (WHO Europe, 2019a).
"**Decentralised** health service delivery can contribute to the undervaccination of refugees and migrants and result in missed opportunities for vaccination during early stages of settlement" (WHO Europe, 2019a).)
"Fragmented health systems and diverse models of care, with separate pathways for screening and vaccination of refugees and migrants, can create confusion for both patients and health-care providers and potentially lead to an undervaccinated population" (WHO Europe, 2019a).)
"The health screening of all asylum seekers is a legal requirement and working structures had to be set up quickly. During the refugee and migrant influx in 2015 and 2016, the initial response could only come from existing health-care structures, which, normally, would only be accessible to people in possession of the relevant documents or who have been registered" (WHO Europe, 2019b).
Complex humanitarian situations, such as the large and sudden influx of refugees and migrants, can represent further organisational barriers for National Health Systems that should support the implementation of

vaccination programmes during humanitarian events or crises. In fact, the volume and speed of movement of refugees and migrants in recent years within the WHO European Region has been particularly challenging in terms of deciding when and where to vaccinate (WHO Europe, 2019a; Bradby, 2015; WHO-UNHCR-UNICEF, 2015).

"**Weak health infrastructures**, including limited cold-chain capabilities, shortages of trained healthcare worker and fragmented health-information systems, pose perennial problems, particularly in remote areas where refugee camps are often located, and these challenges will complicate any future vaccine rollout" (Zard, 2021)

Organization and opening of services is inconvenient

Some people may find **opening hours** and the waiting time inconvenient (WHO Europe, 2019c). In addition the lack of **internet connectivity** is reported as a barrier in countries where vaccine bookings have to be made online (WHO UNICEF, 2021).

The administration of the full vaccination schedule, which may require **multiple appointments** (with intervals of months among the doses), poses additional challenges when dealing with mobile populations such as migrants. (Declich, 2021).

Utilisation of vaccination services among refugees and migrants is also influenced by administrative issues such as difficulties in obtaining appointments or inability to register or receive immunisation **recall and reminder letters without a fixed address** (WHO Europe, 2019a).

For the COVID-19 Vaccine there were specific factors (e.g., storage requirements) making it physically hard for the vaccine to **reach rural locations** (Thomas, 2021a).

A study from Canadian context showed that **the lack of time or opportunity to engage with newcomer** patients (generally defined as foreign-born individuals, usually immigrants or refugees, but may also include students and undocumented migrants) is a barrier for the HPV vaccine (Rubens-Augustson, 2019).

Moreover, clinic **opening times** are a determinant of utilisation of services, with research suggesting that refugees and migrants are more likely to use out-of-hours primary care, especially for non-urgent problems, for reasons such as working in occupations with antisocial hours (WHO Europe, 2019a).

Often those on low incomes find it difficult to go to vaccination centres during working time or to obtain appointments (De Vito, 2017).

Insufficient information on the Child Health Systems in UK for automatic generation of vaccination appointments (Perry, 2020).

Organisational/logistic solutions

Solutions to the lack of specific documents/certificates

In some Countries, solutions have been sought to the lack of specific documents allowing access to COVID-19 vaccination, for example in France foreigners or homeless people are able to **be vaccinated even if they do not have a social security or identification number** (Armocida, 2021). In Italy, it has been suggested to introduce **administrative flexibility** to facilitate the access to vaccination to those who have no registration with

the NHS or valid documents, in order to make the directive of the Italian Medicines Agency applicable (Geraci, 2021). In Italy, appropriate changes to the portal currently in use at national / regional level for **online booking** have also been proposed. It is also recommended to create lists of guests of the structures, with the help of the operators of the structure itself to be sent, for example, to dedicated addresses / contacts of the ASL / Region (Bandini, 2021). A regional health authority recommended to its Local Health Units to provide an ad hoc path for the identification and booking of vaccination against COVID-19 for people not registered in the Health System, together with a telephone number dedicated to user information. The path is dedicated to foreign subjects temporarily present in the territory and subjects in possession of “Eni card” (European not registered). Specifically, the subjects will be reported and included in the booking system (ALISA, 2021).

Solutions related to unknown previous vaccination status

Primary healthcare interactions remain an important opportunity for assessing vaccination status (ECDC Scientific advice, 2018). In case of uncertainty, it is advisable to start from scratch” (Garcia Galan, 2007). “If the documentation is difficult to interpret because of language barriers, and there may be doubts about its authenticity, it may be preferable to **ignore the written record and repeat the vaccination**. If previous immunisation is not available, immigrants should be considered susceptible to the disease in question, triggering the age-appropriate vaccination schedule. Training is vital at immigrant centres, and among general practitioners, paediatricians and community public health staff to ensure vaccination records are consistently checked” (Prymula, 2018).

In Italy for immigrant children aged between 3 and 6 months, for whom there is no documentation on the vaccinations undertaken, a full vaccination cycle is carried out (Italian MoH, 2017). The decisions regarding the continuation and supplementation of vaccinations are taken by the health workers at the vaccination centre, with reference to the country of origin and the age of the child. A vaccination can be repeated without any problems, if it cannot be proven to have been carried out. The assessment of antibody titres can only be requested for diseases that give permanent immunity and only when there is reasonable certainty that vaccination was carried out or that the disease occurred naturally. If the healthcare provider considers the risk of the child's not coming back to the hospital to be high, vaccinations are carried out without testing, adopting the newborn calendar and using the vaccines available for the age. a) the child has never been vaccinated: he/she shall be vaccinated according to our current national calendar, depending on his/her age; b) the child has been regularly vaccinated in the country of origin and the vaccination status is sufficiently documented: our current national calendar shall be followed, for the possible completion of the primary vaccination cycle and/or booster shots; c) the documentation is insufficient and the vaccination status is doubtful: the vaccines envisaged in our current national calendar must be administered (for vaccines containing the tetanus component, it is advisable not to exceed the number of administrations, due to the greater risk of adverse reactions) (Regione Toscana, 2019). For subjects who declare that they have never been vaccinated: carrying out polio vaccination (complete cycle); for subjects without adequate documentation and with dubious vaccination status: administration of at least 1 dose of polio (Regione Toscana, 2019).

Solution to the mobility of migrants

The **reception centres are an ideal setting** to offer full or catch-up vaccination. This approach is recommended by most international and national agencies (Declich, 2021).

The operative mechanism for vaccinations will depend, fundamentally, on the **type of refugee accommodation during the period during which vaccinations are carried out**. When designing the vaccination program, the time needed to complete the basic vaccination series (which may require a minimum of 6-7 months), as well as the need for a series of booster doses for some vaccines in children, over time, to complete the vaccination guidelines provided in the Child Vaccination Schedule need to be considered (Gonzáles, 2016). For refugees and migrants who may move across borders in their migration, **high-quality data need to be collected and shared between countries** to facilitate completion of vaccination doses. (WHO Europe, 2019a).

Flexible solutions

Vaccination campaigns were designed in a way to be flexible. Therefore, campaigns had been prolonged in order to cover newly arrived migrants. After the 2016 Balkan route border closure, vaccination of refugee children in Greece was mainly performed by **non-governmental organisations**. Activities varied between camps, resulting in heterogeneity of vaccination coverage. In April 2017, the European programme 'PHILOS - Emergency health response to refugee crises took over vaccination coordination (Mellou, 2019).

Solutions to the lack of recording of vaccination doses and certificate of vaccination

Starting to realise vaccination registries for NAMs (Mipatrini, 2017), also when migrants and refugees are moving between countries (Pavli, 2017). In particular:

- Providing documentation of each administered vaccination to the migrant or child's caregiver could help avoid unnecessary re-vaccinations. Data should be entered in electronic or paper immunisation registries (Giambi, 2017)
- Procedures to keep track of migrants' immunisation data across countries should be improved to avoid lack or duplication of vaccination (Giambi, 2017). Robust surveillance data on incidence of VPDs and vaccine coverage in migrant populations by age group, migration status, country of origin, and time since migration are required to inform policy and planning, with greater coordination required across EU/EEA countries (Noori, 2021)
- When refugees change their place of accommodation, by transfer to another reception centre or to a new home address, they need to be provided with the appropriate documentation on the vaccinations received, the results of the serologies that had been carried out, and, if the planned vaccinations have not yet completed, the vaccination plan established to be completed (Huerta González, 2016).

Solution to the lack of collaboration between countries

A solution should be the promotion of collaboration among public health authorities of European Countries to share vaccination policies, information on vaccination campaigns performed and, whether possible, vaccine supplies (Mipatrini, 2017). Moreover, since immunisation is a health intervention requiring a continuum of follow-

up until the full schedule is completed, strengthening partnerships and implementing initiatives across countries of arrival, transit and destination to develop and share better documentation could ensure immunisation and avoid revaccination (WHO-UNHCR-UNICEF 2015; Prymula 2018; Giambi, 2019).
Immunisation books (yellow book from the WHO) provided by authorities of the hosting country to NAMs is an example of good coordination and communication (Karnaki, 2018b).

Solution for the completion of vaccine cycle

A follow-up system would be essential to ensure follow up of vaccinations and booster shots (e.g. tetanus and diphtheria toxoid boosters) (ECDC – Scientific advice, 2015).
The important thing is that each person gets the number of doses according to their age. Reconsider the strategy of vaccinating only at scheduled visits and using combined vaccines (Garcia Galan, 2007).

Solution with strengthen health system

In 2017, Turkey conducted a **mass countrywide vaccination campaign** to provide missing doses of MMR and oral polio vaccine to more than 400 000 refugee and migrant children under 5 years of age. Through a major coordinated effort with a team of more than 5000 people, including trained Syrian refugee doctors and nurses who helped to bridge the Turkish–Arabic language gap, vaccines were provided to children in their homes and communities, as well as in health centres. Outreach teams with vaccine cold-boxes went door to door in neighbourhoods where many Syrian families lived, offering vaccination on the spot. Vaccines were provided free of charge by the Government of Turkey. Information was disseminated from the Ministry and provincial directorates to mosques and local health centres, as well as through live radio broadcasts. Campaign officials also maintained a register of vaccinations administered to each child to ensure appropriate follow-up in the face of the high mobility of this population. All new vaccination records were transferred into the national online immunisation database (WHO Europe, 2019a).
Develop realistic implementation plans together with a robust monitoring and evaluation framework to review existing policies periodically in light of population movement and VPD epidemiology in the host countries (De Vito, 2017).

Innovative Solutions and tailored approaches

Registry-generated **reminders** have been found to be effective in promoting increased coverage. The utilisation of **mobile and e-health technologies** can also further enhance these functions through tailored text messaging. Research has shown that refugees and migrants are interested in using mobile technologies and smartphone tools such as health applications when these are available in their native languages. Such tools could potentially be successfully leveraged to manage vaccination records and information to increase uptake and reduce gaps in coverage (WHO Europe, 2019a).
There is also potential for leveraging new technologies to facilitate such knowledge sharing in accessible ways, such as through mobile vaccine tracking applications, which can provide electronic vaccination reminders and information offered in a variety of languages (Wilson, 2018)

Build upon proven-effective approaches in reaching underserved groups, such as the "Reaching Every District" strategy. Track each individual's immunisation status, preferably through introduction of **electronic immunisation registries** that are well integrated within health information systems and leverage other relevant civil registries (WHO Europe, 2014).

During the medical examination, the medical history and vaccination information stage should be collected followed by a physical screening and the administration of any missing vaccinations. Once the medical examination has been completed, the patient receives his/her full examination documentation (including a **vaccination certificate**) for their personal use, together with confirmation of the compulsory tests that enable them to proceed with the registration process (WHO Europe, 2019b,Noori 2021).

There is a **Tailoring Immunisation Programmes (TIP) approach** developed by the WHO Regional Office for Europe to support countries (WHO Europe, 2019c).

Consider the **unique needs of NAMs when offering vaccination**, in terms of delays to presentation, follow-up appointments, and uptake and completion of treatment (ECDC Scientific advice, 2018)

Public health programmes have to adapt their communication and approaches. Better understanding of migrant perceptions about infectious diseases and vaccination, and the acceptability and accessibility of healthcare services is critical. **Tailored approaches and migrant-friendly services** are needed. In particular, community engagement, through culturally sensitive outreach programmes as well as community-based care, is critical to improving awareness and uptake of services, as also culturally competent health promotion and care and use of interpreters, training of community-based primary care professionals, and collaboration with public health and migrant community coalitions. More research is needed, including community based participatory action research, on the migrant community perspectives (ECDC Scientific advice, 2018).

Single point-of-referral to a migrant-friendly clinical service with culturally competent staff alongside interpreters and other support services can help (ECDC Scientific advice, 2018).

Integrating catch-up vaccination into routine primary care services for migrants may reduce barriers to vaccination. Community-based and primary care approaches may be the best approach to ensure high uptake to vaccination and screening. Multiple opportunities for vaccinations occur at different points in the migration trajectory and should be better considered and coordinated (Noori, 2021).

Some solutions have been proposed to reduce barriers in the COVID-19 vaccinations: **local health departments should work closely** with healthcare systems, **community based organisations and faith based organisations**; an administrative solution could be reducing paperwork (Thomas, 2021a) and building **flexibility into vaccine scheduling and dosing** (Zard, 2021). In addition, integrating vaccination activities with essential humanitarian activities, including food and medicine distribution and nutritional assessments (Zard, 2021).

Solutions related to humanitarian crises

The importance of a coordinated response to ensure vaccination provision is prioritised in situations of sudden large influxes of refugees and migrants. Intersectoral stakeholders should be engaged in the development of action plans to improve country preparedness, and public–private partnerships might be used to address issues

of vaccine supply to cater for sudden influxes of refugees and migrants. Additional financial and human resources should be available for appropriate service delivery strategies (WHO Europe, 2019a).

In **Turkey**, all childhood vaccinations are provided to the beneficiaries within camps, outside camps and at borders (MMR and oral polio vaccine), since 2011. As part of the national and subnational vaccination campaigns conducted by the Ministry of Health, migrant populations are also vaccinated in streets, schools and workplaces. The Ministry of Health in 2017 conducted a two-round door-to-door mass campaign with a countrywide team of 5,000 health care workers during which more than 358,000 children under 5 years of age and under temporary protection were reached and vaccinated (De Vito, 2017).

Supplementary vaccination campaigns (known as Mop-up), targeting Syrians living under temporary protection in Turkey, have been organised to support and complement the main vaccination services in order to overcome any issues of access. This includes provision of all childhood vaccines for those under temporary protection living in temporary refugee centres, for all refugees and migrants residing in the country and all foreigners arriving at the borders. Vaccines are applied in line with the NIP in Turkey (WHO Europe, 2019b).

In **Germany**, during the refugee and migrant influx in 2015 and 2016, the inability of existing public health structures to cope with such an unprecedented situation was overcome by using volunteers – who were initially unorganised – and through existing health-care organisations. Charité – Universitätsmedizin Berlin, a public hospital belonging to the state of Berlin and Europe's largest university clinic, became involved because it was felt that the size of the organisation, the motivation of its employees and its ability to put the required structures in place would enable it to serve refugee and migrant patients outside the hospital buildings. Charité was asked by the public authorities to extend its support and for its staff to help at other sites. Once the initial crisis had passed and the authorities were better able to respond, new solutions were found to improve the vaccination coverage and mental health care coverage for refugees and migrants. Vaccinations for all asylum seekers became an integrated step in the initial medical screening process, and, shortly afterwards, this was complemented by a mobile vaccination programme (WHO Europe 2019b).

Ensure national policies are in place for provision of equitable and high-quality immunisation services tailored to migrant and refugee populations: a) national immunisation programmes should ensure that migrants and refugees benefit from **easy access** to the vaccines offered free of charge under the national vaccination schedule; and b) appropriate strategies, such as outreach activities, and existing initiatives, such as tailored immunisation programmes, should be considered to improve the delivery and uptake of vaccines (De Vito, 2017). Vaccination service delivery can occur through (WHO Europe, 2017):

- Fixed sites and/or outreach (i.e. permanent and temporary fixed sites);
- Mobile teams from fixed facilities;
- Mass campaigns, including "multiple vaccines" campaigns.

Storage and delivery of vaccines

A single-dose vaccine option may be preferable for farm workers who move between locations/states. If two vaccine doses are needed (such as with current mRNA vaccines), ensure the second dose is provided (Thomas 2021)

Flexibility clinical hours

Intervention including offering **extended and more flexible clinical hours**, providing bilingual clinical support and patient navigation where required (Ortiz, 2020). **Out-of–hours clinics, drop-in centres and pharmacy-based delivery** of vaccination can provide opportunities for administering vaccination and reduce socioeconomic barriers to accessing care (within immunisation service delivery regulations and laws in the country) (WHO Europe, 2019a).

Multiple appointments for achieving immunisation

Health services in migrant **centres and camps and those in communities** have been identified as the main delivery model in most EU countries as well as among the non-EU countries of the Mediterranean region and the Black Sea basin although there is a large heterogeneity in national policies and practices in Europe (Declich, 2021).

Two types of vaccination strategy tested in an Italian reception centre: in the first three years of observation, the vaccination service staff of the local national health institute came monthly to asylum seekers, while in the last year, vaccinations were offered directly upon the arrival of migrants by the **internal healthcare facility** of the asylum seekers (Vita, 2019).

The European Observatory on Health Systems and Policies gives some solutions (European Observatory on Health Systems and Policies, 2018):

- Clinics for the school immunisation programme are held **over the summer** for those children who may have missed vaccination day
- The Health Service Executive's **active recall system** for the primary immunisation programme.

Linguistic/cultural barriers

Informed consent

Language barriers and lack of interpreters for informed consent (Krishnaswamy, 2018)

Health Professional Training

Insufficient training among HCPs on issues related to migrant health (Mahimbo, 2017; Socha, 2020). These issues can lead to provision of care of poorer quality, missed opportunities for providers on the entitlement of refugees and migrants to vaccination services, their specific health needs and the diversity and sociocultural contexts that influence their understanding of vaccination and the possibility of not offering vaccines at all. Lack of understanding or awareness of cultural nuances can lead providers either to fail to communicate effectively with their patients or to assume stereotypical attitudes and behaviours; both can be barriers to the utilisation of services. The provision of training and comprehensive information in these areas for health-care professionals at all levels is still inadequate (WHO Europe, 2019a).

Because of the lack of clarity in existing national policies and inconsistent guidelines on COVID-19 vaccines

between countries, **healthcare professionals might misunderstand vaccination recommendations** for refugees and migrants, particularly when vaccination documentation is not available. Migrants might not receive the care they are entitled to, also resulting in missed opportunities for vaccination (Bartovic, 2021).

Cultural mediation

Staff shortages, including for cultural mediators and interpreters, who are critical for establishing effective and inclusive services, act as barriers to implementation of national immunisation policies and limit systematic collection and evaluation of data for corrective actions; they are further challenges to ensuring delivery of immunisation services, increasing demand and ensuring public trust in vaccinations" (WHO Europe, 2018a; WHO Europe, 2019a; Mellou, 2019).

Also, an adequate COVID-19 vaccination of refugees and migrants is influenced by availability of staff, particularly of cultural mediators and interpreters, who are essential in ensuring an effective and inclusive health-care service delivery (Bartovic, 2021).

Linguistic/cultural solution

Solution for Health Professional training

It is necessary to provide training opportunities for HPs to improve their awareness of the catch-up needs of refugees across all age groups. Resources such as **online immunisation calculators, refugee specific guidelines and elearning** could potentially equip HPs with the relevant skills and knowledge and ultimately make implementation of catch-up vaccines for this group easier (Mahimbo, 2017). The ECDC suggests that health professionals should be trained to have sufficient knowledge of migrant health needs and skills in culturally sensitive health education, as well as access to culturally and linguistically appropriate information materials and interpretation support services (ECDC Scientific advice, 2018).

The WHO developed "The Migrant Health Guide", a ree online tool to support health-care professionals in providing care for refugees and migrants. The tool provides a "one stop shop" for information regarding access and entitlements for primary and secondary care for refugees and migrants, including routine vaccines, and outlines which services are free of charge for all and which groups are exempt from charges. It also has a checklist for assessing the health of new refugees and migrants, including their immunisation status and whether it is in line with the United Kingdom's national immunisation schedule. The checklist encourages practitioners to emphasise to their patients that health services are not linked to immigration procedures. There has been lack of clarity around this point, and fear of consequences has been cited as one of the reasons why some refugees and migrants do not keep documentation of vaccination history. Additionally, the Migrant Health Guide includes country-specific advice and guidance on the health needs and specific vaccination requirements depending on the country of origin or transit, or plans for travel (migrants visiting friends and relatives). The tool also provides relevant resources such as algorithms for the vaccination of individuals with uncertain or incomplete immunisation status. The Migrant Health Guide is an example of an intervention designed to

strengthen the capacity of primary care providers offering routine services in order to reduce missed opportunities for vaccination among refugees and migrants (WHO Europe, 2019a).

Train immunisation managers and service providers to implement new strategies and tailored approaches to underserved and marginalised populations (training on planning and implementing tailored approaches, communication skills, engaging existing community structures and civil society organisations in planning and implementing tailored approaches, monitoring and evaluation) (WHO Europe, 2014).

Solution for cultural mediation

Communication services (i.e. cultural mediators, interpreters) for health care providers should be available, or improved, for the promotion of an inclusive and culturally sensitive health system (Pavli, 2017). Given that interpreters are already engaged for the antenatal appointment, they could then also be utilised in the discussion and to consent women for vaccination by their antenatal care provider" (Krishnaswamy 2018). Mellou reported the solution "Any human resource available has been utilised for cultural mediation. Vaccination were postponed in order to assure the presence of cultural mediator during vaccinations" (Mellou, 2019)

"Joint assessments conducted by the WHO Regional Office for Europe with Member States identified that Member States need to strengthen their human and fiscal resources, provision of interpreters and cultural mediators, communications strategy, and immunisation guidelines" (WHO Europe, 2018c).

COVID solutions "Mobile vans, mass vaccination centres, pop-ups, and non-clinical venues" (ECDC, 2021a).

EVALUATION

After implementing an intervention, a necessary step is **to evaluate its effectiveness**. Regarding vaccination, evidence on the effectiveness of different strategies to improve vaccine uptake is required in adult, adolescents, and key populations such as migrants to inform prioritisation and novel approaches (Noori, 2021; De Vito, 2017). The fragmentation of strategies and the limited availability of information collected during the implementation of the intervention, often make it problematic to evaluate its effectiveness. Data on the vaccine coverage of migrants are also needed to know whether there are gaps in vaccine coverage among migrants (Socha, 2020). Also, the European Vaccine Action Plan 2015-2020 (WHO Europe, 2014) recommends to supervise implementation and monitor performance of tailored approaches in reaching underserved groups and reducing inequities.

Immunisation information systems, population-based immunisation registries, record administered vaccinations are needed to support immunisation decision-making at the local level and to guide policies and programmes for public health operations. Availability of data through IIS can serve to identify undervaccinated refugees and migrants, enumerate differentials in risk, reduce missed opportunities, reduce vaccine wastage and ultimately reduce the incidence of VPDs (WHO Europe, 2019a).

Organisational barriers

There is limited robust data on the yield and impact of infectious disease programmes for migrant populations in order to better target key risk groups and develop more cost-effective approaches. Information on the effectiveness and cost-effectiveness of vaccination programmes targeting migrants, and the practical implementation challenges facing these interventions, is therefore limited (Noori, 2021).

The existence of such barriers to the evaluation of vaccination strategies dedicated to migrant populations concerns, at various levels, all European countries.

In Norway, in fact, currently the Norwegian Immunisation Registry does not stratify by migrant status (Socha, 2020).

Another example is in Italy, fragmentation in data collection and recording has been documented at all levels. This gap should be bridged as these problems need to be addressed when considering national policies and resource allocations (Dalla Zuanna, 2018).

The lack of routine data collection for services provided to refugees and migrants and evaluation of interventions are at least partially a reflection of the decentralised systems often involved, and national coverage levels may mask disparities within different areas of a country, resulting in lower vaccination rates among marginalised groups being unnoticed (WHO Europe, 2019a).

These barriers are also reported for COVID-19 vaccination, in fact, ascertaining whether these groups have completed their vaccinations is impossible without consistent, comprehensive and standardised disaggregated

data, shared across borders and along migratory routes for effective health needs and burden-of-disease monitoring (Bartovic, 2021).

Organisational solutions

The European Vaccine Action Plan 2015-2020 (WHO Europe, 2014) recommends to track each individual's immunisation status, preferably through introduction of **electronic immunisation registries** that are well integrated within health information systems and **leverage other relevant civil registries**.

It is therefore mandatory to **incentivise better recording of data or integrating core variables** around ethnicity and migration for vaccine uptake into Health Information Systems, and strengthen the evidence-base to support innovative interventions and engagement around other vaccine-preventable diseases (Crawshaw, 2021; Socha, 2020).

Electronic medical records, interlinking national immunisation registers and data sharing along migratory routes can contribute to monitoring and planning of vaccination of refugees and migrants. **Setting up or expanding immunisation information systems to monitor vaccination coverage** (Bartovic, 2021)

In Italy, a national immunisation electronic registry should be encouraged to record each vaccination administered, share data on vaccination coverage and monitor the immunisation state (Dalla Zuanna, 2018).

In Turkey, during vaccination campaigns in refugee camps, vaccinations were recorded into the national online immunisation database and the children are followed for routine immunisation by family physicians (De Vito., 2017).

Promoting a strong epidemiologic surveillance for new cases of VPDs, developing a set of indicators harmonised at European level in order to monitor the prevalence and the **immunity coverage** of native and migrants' populations (Mipatrini, 2017).

Further community-based research and intervention research would be valuable in order to better understand the unique determinants of health among migrant populations and the perspectives of migrant communities toward specific infectious diseases and interventions, for example research **evaluating acceptability and accessibility** (Noori, 2021).

In 2020, a WHO Europe technical guidance suggested that **integration of migration health data directly into national health information systems** should be a more comprehensive approach that makes implementation of policies far easier and more sustainable in the long term. It also should increase the availability of migration health data and support data comparisons with the host population. There are risks associated with the creation of a separate system specifically for refugees and migrants: comparability heavily decreases and such a system is often technically complex, resource intensive and, overall, unsustainable for many countries to maintain (WHO Europe, 2020).

REFERENCES

Abdi I, Menzies R, Seale H. (2019). Barriers and facilitators of immunisation in refugees and migrants in Australia: an east-African case study. Volume 37, Issue 44, 16 October 2019, Pages 6724-6729 https://www.sciencedirect.com/science/article/pii/S0264410X19312253?via%3Dihub

ALISA – Azienda Ligure Sanitaria. Vaccinazione anti COVID-19 soggetti non registrati nel sistema sanitario regionale della Liguria. Circolare ALISA n. 15226 del 21.4.21. https://www.regione.liguria.it/homepage/salute-e-sociale/info-vaccini/vaccinazione-per-soggetti-non-registrati-sistema-sanitario-regionale.html

Allen EM, Lee HY, Pratt R, Vang H, Desai JR, Dube A & Lightfoot E. (2019). Facilitators and Barriers of Cervical Cancer Screening and Human Papilloma Virus Vaccination Among Somali Refugee Women in the United States: A Qualitative Analysis. Journal of transcultural nursing: official journal of the Transcultural Nursing Society, 30(1), 55–63. https://doi.org/10.1177/1043659618796909

Armocida B, Formenti B, Missoni E, D'Apice C, Marchese V, Calvi M, Castelli F, Ussai S.Challenges in the equitable access to COVID-19 vaccines for migrant populations in Europe. The Lancet Regional Health - Europe 2021; 6:100147. DOI: https://doi.org/10.1016/j.lanepe.2021.100147

Bandini L, Caraglia A, Caredda E, D'ancona F, Declich S, Dente MG, Filia A, Fulceri F, Geraci S, Libianchi S, Mancinelli R, Manto A, Marceca M, Mazzilli S, Minutillo A, Onder G, Pacifici R, Pantosti A, Scattoni ML, Siddu A, Tavoschi L, Tosti ME, Vanacore N. Vaccinazione contro COVID-19 nelle comunità residenziali in Italia: priorità e modalità di implementazione ad interim. Rapporto ISS COVID-19 n. 16/2021

Bartovic J, Datta SS, Severoni S, D'Anna V. Ensuring equitable access to vaccines for refugees and migrants during the COVID-19 pandemic. Bull World Health Organ. 2021 Jan 1;99(1):3-3A. doi: 10.2471/BLT.20.267690. https://www.who.int/bulletin/volumes/99/1/20-267690.pdf

Bradby H, Humphris R, Newall D, Phillimore J. Public health aspects of migrant health: a review of the evidence on health status for refugees and asylum seekers in the European Region. Copenhagen: WHO Regional Office for Europe; 2015 (Health Evidence Network synthesis report 44). https://apps.who.int/iris/bitstream/handle/10665/326348/9789289051101-eng.pdf?sequence=1&isAllowed=y

Crawshaw AF, Deal A, Rustage K, Forster AS, Campos-Matos I, Vandrevala T, Würz A, Pharris A, Suk JE, Kinsman J, Deogan C, Anna Miller A, Declich S, Greenaway C, Noori T, Hargreaves S. What must be done to tackle vaccine hesitancy and barriers to COVID-19 vaccination in migrants? Journal of Travel Medicine 2021:28(4):taab048. https://doi.org/10.1093/jtm/taab048

Dalla Zuanna T, Del Manso M, Giambi C, Riccardo F, Bella A, Caporali MG, Dente MG, Declich S; Italian Survey CARE Working Group. Immunization Offer Targeting Migrants: Policies and Practices in Italy. Int J Environ Res Public Health 2018;15(5):968. doi: 10.3390/ijerph15050968 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5982007/pdf/ijerph-15-00968.pdf

De Vito E, Parente P, de Waure C, Poscia A, Ricciardi W. A review of evidence on equitable delivery, access and utilization of immunization services for migrants and refugees in the WHO European Region. Copenhagen: WHO Regional Office for Europe; 2017 (Health Evidence Network (HEN) synthesis report 53). https://apps.who.int/iris/bitstream/handle/10665/326288/9789289052740-eng.pdf?sequence=1&isAllowed=y

Deal A, Hayward SE, Huda M, Knights F, Crawshaw AF, Carter J, Hassan OB, Farah Y, Ciftci Y, Rowland-Pomp M, Rustage K, Goldsmith L, Hartmann M, Mounier-Jack S, Burns R, Miller A, Wurie F, Campos-Matos I, Majeed A, Hargreaves S; ESCMID Study Group for Infections in Travellers and Migrants (ESGITM). Strategies and action points to ensure equitable uptake of COVID-19 vaccinations: A national qualitative interview study to explore the views of undocumented migrants, asylum seekers, and refugees. J Migr Health. 2021;4:100050. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8154190/

Declich S, Dente M, Greenaway, C & Castelli F. (2021). Infectious Diseases Among Migrant Populations. Oxford Research Encyclopedia of Global Public Health. Retrieved 10 Feb. 2022, from

https://oxfordre.com/publichealth/view/10.1093/acrefore/9780190632366.001.0001/acrefore-9780190632366-e-67

Del Manso M, Giambi C, Dalla Zuanna T, Riccardo F, Bella A, Caporali MG, Dente MG and Declich S. Report on the survey on immunization offer targeting newly arrived migrants. CARE project 2017 http://careformigrants.eu/wp-content/uploads/2017/09/D5.2-Comparative-vaccination-report.pdf

Driedger M, Mayhew A, Welch V, Agbata E, Gruner D, Greenaway C., Noori T, Sandu M, Sangou T, Mathew C, Kaur H, Pareek M & Pottie K. (2018). Accessibility and Acceptability of Infectious Disease Interventions Among Migrants in the EU/EEA: A CERQual Systematic Review. International journal of environmental research and public health, 15(11), 2329. https://doi.org/10.3390/ijerph15112329

Epicentro (2021a). G-START: poster di comunicazione multilingua ai tempi del COVID-19 https://www.epicentro.iss.it/migranti/g-start-materiali-comunicazione-COVID-19

Epicentro (2021b) G-START: materiali di comunicazione multilingua adattati per il contesto regionale https://www.epicentro.iss.it/migranti/g-start-materiali-comunicazione

European Centre for Disease Prevention and Control (ECDC). (2015). (ECDC – Scientific advice, 2015). Expert Opinion on the public health needs of irregular migrants, refugees or asylum seekers across the EU's southern and south-eastern borders. Stockholm: ECDC; 2015. https://www.ecdc.europa.eu/sites/default/files/media/en/publications/Publications/Expert-opinion-irregular-migrants-public-health-needs-Sept-2015.pdf

European Centre for Disease Prevention and Control (ECDC). (2018). (ECDC Scientific advice, 2018), Public health guidance on screening and vaccination for infectious diseases in newly arrived migrants within the EU/EEA. Stockholm: ECDC; 2018. https://www.ecdc.europa.eu/en/publications-data/public-health-guidance-screening-and-vaccination-infectious-diseases-newly

European Centre for Disease Prevention and Control (ECDC). (2021a). Reducing COVID-19 transmission and strengthening vaccine uptake among migrant populations in the EU/EEA – 3 June 2021. ECDC: Stockholm; 2021. https://www.ecdc.europa.eu/sites/default/files/documents/COVID-19-reducing-transmission-and-strengthening-vaccine-uptake-in-migrants.pdf

European Centre for Disease Prevention and Control (ECDC). (2021b). Overview of the implementation of COVID-19 vaccination strategies and deployment plans in the EU/EEA. technical report https://www.google.com/url?q=https://www.ecdc.europa.eu/sites/default/files/documents/Overview-of-the-implementation-of-COVID-19-vaccination-strategies-and-deployment-plans-14-June-2021.pdf&sa=D&source=docs&ust=1646306021521401&usg=AOvVaw0D1NpNo77PxPKLRlOVcGDF

European Observatory on Health Systems and Policies. (2018). The organization and delivery of vaccination services in the European Union. https://eurohealthobservatory.who.int/publications/i/the-organization-and-delivery-of-vaccination-services-in-the-european-union-study

Fabiani, M, Di Napoli A, Riccardo F, Gargiulo L, Declich S, Petrelli A. (2017). Differenze nella copertura vaccinale antinfluenzale tra sottogruppi di immigrati adulti residenti in Italia a rischio di complicanze (2012-2013). Epidemiologia&Prevenzione, https://epiprev.it/3801

García Galán Rafael (coordinador). Manual de atención sanitaria a inmigrantes: guía para profesionales de la salud. - Sevilla: Consejería de Salud, 2007. https://www.repositoriosalud.es/handle/10668/1457

Geraci S, Verona A. Gli Invisibili e il Diritto al vaccino. SaluteInternazionale.info 2021. https://www.saluteinternazionale.info/2021/03/gli-invisibili-e-il-diritto-al-vaccino/

Ghebrendrias S, Pfeil S, Crouthamel B, Chalmiers M, Kully G & Mody S. (2021). An Examination of Misconceptions and Their Impact on Cervical Cancer Prevention Practices among Sub-Saharan African and Middle Eastern Refugees. Health equity, 5(1), 382–389. https://doi.org/10.1089/heq.2020.0125

Giambi C, Del Manso M, Dalla Zuanna T, Riccardo F, Bella A, Caporali MG, et al. National immunization strategies targeting migrants in six European countries. Vaccine. 2019;37(32), 4610-4617. https://pubmed.ncbi.nlm.nih.gov/29426661/

Giambi C, Del Manso M, Dente MG, Napoli C, Montaño-Remacha C, Riccardo F, Declich S, Network For The Control Of Cross-Border Health Threats In The Mediterranean Basin And Black Sea For The

ProVacMed Project. Immunization Strategies Targeting Newly Arrived Migrants in Non-EU Countries of the Mediterranean Basin and Black Sea. Int J Environ Res Public Health. 2017;14(5):459. https://www.mdpi.com/1660-4601/14/5/459/htm

Godoy-Ramirez K, Byström E, Lindstrand A, Butler R, Ascher H, Kulane A. Exploring childhood immunization among undocumented migrants in Sweden - following qualitative study and the World Health Organizations Guide to Tailoring Immunization Programmes (TIP). Public Health. 2019;171:97-105. doi: 10.1016/j.puhe.2019.04.008. https://pubmed.ncbi.nlm.nih.gov/31121558/

Guidance (Spain) 2016. Vacunation protocol for refugees. https://www.astursalud.es/documents/31867/430382/6_Vacunacion+refugiados+Asturias_2016.pdf/bb4f45f0-135a-30b6-015a-def789cb11f2

Hargreaves S, Nellums LB, Ravensbergen SJ, Friedland JS, Stienstra Y, On Behalf Of The Esgitm Working Group On Vaccination In Migrants (2018). Divergent approaches in the vaccination of recently arrived migrants to Europe: a survey of national experts from 32 countries, 2017. Euro surveillance : bulletin Europeen sur les maladies transmissibles = European communicable disease bulletin, 23(41), 1700772. https://doi.org/10.2807/1560-7917.ES.2018.23.41.1700772

Huerta González Ismael, Protocolo de vacunación de personas refugiadas. Dirección General de Salud Pública, Consejería de Sanidad Asturias, 2016. https://www.astursalud.es/documents/35439/37968/6_Vacunacion%20refugiados%20Asturias_2016.pdf/bb4f45f0-135a-30b6-015a-def789cb11f2

Hui C, Dunn J, Morton R, Staub LP, Tran A, Hargreaves S, Greenaway C, Biggs BA, Christensen R, Pottie K. Interventions to Improve Vaccination Uptake and Cost Effectiveness of Vaccination Strategies in Newly Arrived Migrants in the EU/EEA: A Systematic Review. Int J Environ Res Public Health. 2018 Sep 20;15(10):2065. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6210200/

International Organization for Migration - IOM, UN Migration. (2021). Migrant inclusion in COVID-19 vaccination campaigns. IOM Country Office Review. 2021. https://www.iom.int/sites/default/files/our_work/DMM/Migration-Health/iom-vaccine-inclusion-mapping-17-may-2021-global.pdf

Karnaki P & Katsas K. Pilot reports and final recommendations. Mig-healthCare 2018a. https://www.mighealthcare.eu/e-library

Karnaki P, Nikolakopoulos S, Bradby H et al. Survey and interview findings. Physical and mental health profile of vulnerable migrants/refugees in the EU including needs, expectations and capacities of service providers. Mig-healthCare 2018b. https://www.mighealthcare.eu/e-library

Knights F, Carter J, Deal A, Crawshaw AF, Hayward SE, Jones L, Hargreaves S. Impact of COVID-19 on migrants' access to primary care and implications for vaccine roll-out: a national qualitative study. Br J Gen Pract. 2021;71(709):e583-e595. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8216266/

Krishnaswamy S, Cheng AC, Wallace EM, Buttery J, Giles ML. Understanding the barriers to uptake of antenatal vaccination by women from culturally and linguistically diverse backgrounds: A cross-sectional study. Hum Vaccin Immunother. 2018 Jul 3;14(7):1591-1598. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6067853/

Mahimbo A, Seale H, Smith M, Heywood A. Challenges in immunisation service delivery for refugees in Australia: A health system perspective. Vaccine. 2017;35(38):5148-5155. https://www.sciencedirect.com/science/article/pii/S0264410X17310678

McComb E, Ramsden V, Olatunbosun O & Williams-Roberts H. (2018). Knowledge, Attitudes and Barriers to Human Papillomavirus (HPV) Vaccine Uptake Among an Immigrant and Refugee Catch-Up Group in a Western Canadian Province. Journal of immigrant and minority health, 20(6), 1424–1428. https://doi.org/10.1007/s10903-018-0709-6

Mellou K, Silvestros C, Saranti-Papasaranti E, et al. Increasing childhood vaccination coverage of the refugee and migrant population in Greece through the European programme PHILOS, April 2017 to April 2018. Euro Surveill. 2019;24(27):1800326. doi:10.2807/1560-7917.ES.2019.24.27.1800326. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6628755/

Ministry of Health (Italy). Piano Nazionale Prevenzione Vaccinale PNPV 2017-2019. 2017. https://www.salute.gov.it/imgs/C_17_pubblicazioni_2571_allegato.pdf

Mipatrini D, Stefanelli P, Severoni S, Rezza G. Vaccinations in migrants and refugees: a challenge for European health systems. A systematic review of current scientific evidence. Pathog Glob Health 2017;111(2):59-68. doi: 10.1080/20477724.2017.1281374. https://pubmed.ncbi.nlm.nih.gov/28165878/

Noori T, Hargreaves S, Greenaway C, van der Werf M, Driedger M, Morton RL, Hui C, Requena-Mendez A, Agbata E, Myran DT, Pareek M, Campos-Matos I, Nielsen RT, Semenza J, Nellums LB, Pottie K; ECDC ad hoc scientific panel. Strengthening screening for infectious diseases and vaccination among migrants in Europe: What is needed to close the implementation gaps? Travel Med Infect Dis. 2021;39:101715. doi: https://doi.org/10.1016/j.tmaid.2020.101715

Ortiz E, Scanlon B, Mullens A, & Durham J. (2020). Effectiveness of Interventions for Hepatitis B and C: A Systematic Review of Vaccination, Screening, Health Promotion and Linkage to Care Within Higher Income Countries. Journal of community health, 45(1), 201–218. https://doi.org/10.1007/s10900-019-00699-6

Pavli A, Maltezou E. Health problems of newly arrived migrants and refugees in Europe. J Travel Med 2017;24(4). doi: 10.1093/jtm/tax016. https://pubmed.ncbi.nlm.nih.gov/28426115/

Perry M, Townson M, Cottrell S, Fagan L, Edwards J, Saunders J, O'Hare R & Richardson G. (2020). Inequalities in vaccination coverage and differences in follow-up procedures for asylum-seeking children arriving in Wales, UK. European journal of pediatrics, 179(1), 171–175. https://doi.org/10.1007/s00431-019-03485-7

PICUM (Platform for International Cooperation on Undocumented Migrants). The COVID-19 vaccines & undocumented migrants in Greece. https://picum.org/COVID-19-vaccines-undocumented-migrants-greece/

Prymula R, Shaw J, Chlibek R, Urbancikova I, Prymulova K. Vaccination in newly arrived immigrants to the European Union. Vaccine. 2018;36(36):5385-5390. doi: 10.1016/j.vaccine.2017.05.079. Epub 2017 Jun 8. https://www.sciencedirect.com/science/article/pii/S0264410X17307478?via%3Dihub

Razum O, Brzoska P (2020) Einwanderung. In: Böhm K, Bräunling S, Geene R, Köckler H (eds) Gesundheit als gesamtgesellschaftliche Aufgabe. Springer VS, Wiesbaden. https://doi.org/10.1007/978-3-658-30504-8_8

Rechel B, Priaulx J, Richardson E, McKee M. (2019). The organization and delivery of vaccination services in the European Union, European Journal of Public Health, 29, Issue Supplement_4, ckz185.375, https://eurohealthobservatory.who.int/publications/i/the-organization-and-delivery-of-vaccination-services-in-the-european-union-study

Regione Toscana. La vaccinazione dei minori e adulti immigrati. Website page updated 04.12.2019. https://www.regione.toscana.it/-/la-vaccinazione-dei-minori-e-adulti-immigrati

Riza E and Kalkman S.. Report on models of community health and social care and best practices. Mighealthcare 2018. https://www.mighealthcare.eu/e-library

Robert Koch-Institut. Epidemiologisches Bulletin. (Recommendations of the Permanent Vaccination Commission at the Robert Koch Institute 2020/2021). 2020; n.34. https://www.rki.de/DE/Content/Infekt/EpidBull/Archiv/2020/Ausgaben/34_20.pdf?__blob=publicationFile&fbclid=IwAR2966t_WaZCpMQj39yHNbfiH3XdmY7bJlTjJZ1JhTY0JImeZo5UBQFlVg0

Rubens-Augustson T, Wilson LA, Murphy MS, Jardine C, Pottie K, Hui C, Stafström M & Wilson K. (2019). Healthcare provider perspectives on the uptake of the human papillomavirus vaccine among newcomers to Canada: a qualitative study. Human vaccines & immunotherapeutics, 15(7-8), 1697–1707. https://doi.org/10.1080/21645515.2018.1539604

Shetty AK. Infectious Diseases among Refugee Children. Children (Basel). 2019 Nov 27;6(12):129. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6955676/pdf/children-06-00129.pdf

Socha A, Klein J. What are the challenges in the vaccination of migrants in Norway from healthcare provider perspectives? A qualitative, phenomenological study. BMJ Open. 2020;10(11):e040974. doi: 10.1136/bmjopen-2020-040974. https://bmjopen.bmj.com/content/bmjopen/10/11/e040974.full.pdf

Spallek J, Schumann M, Reeske-Behrens A. (2019) Migration und Gesundheit – Gestaltungsmöglichkeiten von Gesundheitsversorgung und Public Health in diversen Gesellschaften. In: Haring R. (eds) Gesundheitswissenschaften. Springer Reference Pflege – Therapie – Gesundheit. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-662-58314-2_49

Sypsa V. Hprolispsis: HBV & HCV Infections among Roma & migrants in Greece. VHPV – Slovenia (March 2016). https://www.vhpb.org/files/html/Meetings_and_publications/Presentations/LJUBL38.pdf

Tavolo Immigrazione e Salute (TIS) e Tavolo Asilo e Immigrati (TAI). Letter (Italy), 2021. Oggetto: Richiesta urgente di Indicazioni nazionali per porre fine alle disparità di accesso alla campagna vaccinale anti-SARS-CoV-2/COVID-19. https://www.asgi.it/wp-content/uploads/2021/06/2021531_TIS_lettera_accesso_vaccini.pdf

Tavolo Asilo e Immigrazione, Tavolo Immigrazione e Salute. (2021). Indagine sulla disponibilità a vaccinarsi contro il COVID-19 da parte delle persone ospitate nei centri/strutture di accoglienza in Italia. Dossier COVID-19. n3 https://www.epicentro.iss.it/migranti/pdf/Terzo%20Monitoraggio%20Covid%20-%20TIS-TAI%20rev.pdf

Teerawattananon Y, Teo YY, Lim J, Hsu LY & Dabak S. (2021). Vaccinating undocumented migrants against COVID-19. BMJ (Clinical research ed.), 373, n1608. https://doi.org/10.1136/bmj.n1608

Theodorou M, Charalambous C, Petrou C, Cylus J. Cyprus: Health system review. Health Systems in Transition 2012;14(6):1–128. https://eurohealthobservatory.who.int/publications/i/cyprus-health-system-review-2012

Thomas CM, Liebman AK, Galván A, Kirsch JD & Stauffer WM. (2021). Ensuring COVID-19 Vaccines for Migrant and Immigrant Farmworkers. The American journal of tropical medicine and hygiene, 104(6), 1963–1965. https://doi.org/10.4269/ajtmh.21-0199

Thomas CM, Osterholm MT, Stauffer WM. Critical Considerations for COVID-19 Vaccination of Refugees, Immigrants, and Migrants. Am J Trop Med Hyg. 2021;104(2):433-435. Published 2021 Jan 13. doi:10.4269/ajtmh.20-1614 https://www.ajtmh.org/view/journals/tpmd/104/2/article-p433.xml

Tosti ME, Marceca M, Eugeni E, D'Angelo F, Geraci S, Declich S, Della Seta M, Ferrigno L, Marrone R, Pajno C, Pizzarelli S, Rosso A, De Ponte G, Mirisola C, Baglio G. Health assessment for migrants and asylum seekers upon arrival and while hosted in reception centres: Italian guidelines. Health Policy 2021;125(3):393-405. doi: 10.1016/j.healthpol.2020.12.010. https://www.sciencedirect.com/science/article/pii/S0168851020303213

Vita S, Sinopoli MT, Fontanelli Sulekova L, Morucci L, Lopalco M, Spaziante M, Pacifici LE, Bazzardi R, Angeletti S, Ciccozzi M, & Ceccarelli G. (2019). Vaccination campaign strategies in recently arrived migrants: experience of an Italian reception centre. The Journal of Infection in Developing Countries, 13(12), 1159-1164. https://jidc.org/index.php/journal/article/view/32088704

WHO UNICEF. Guidance on developing a national deployment and vaccination plan for COVID-19 vaccines: interim guidance, 1 June 2021. Geneva: World Health Organization; 2021 https://www.who.int/publications/i/item/WHO-2019-nCoV-Vaccine-deployment-2021.1-eng

WHO-UNHCR-UNICEF. (2015). Joint Statement on general principles on vaccination of refugees, asylum-seekers and migrants in the WHO European Region. November 2015. https://data2.unhcr.org/en/documents/details/46488

Williams GA, Bacci S, Shadwick R, Tillmann T, Rechel B, Noori T, Suk JE, Odone A, Ingleby JD, Mladovsky P, & Mckee M. (2016). Measles among migrants in the European Union and the European Economic Area. Scandinavian journal of public health, 44(1), 6–13. https://doi.org/10.1177/1403494815610182

Wilson L, Rubens-Augustson T, Murphy M, Jardine C, Crowcroft N, Hui C, Wilson K. Barriers to immunization among newcomers: A systematic review. Vaccine 2018;36(8):1055-1062. https://doi.org/10.1016/j.vaccine.2018.01.025

World Health Organization. (2017). Vaccination in humanitarian emergencies: Implementation guide. Geneva: World Health Organization; 2017. https://reliefweb.int/sites/reliefweb.int/files/resources/WHO-IVB-17.13-eng.pdf

World Health Organization. Regional Office for Europe (WHO Europe, 2014). European Vaccine Action Plan 2015-2020. https://www.euro.who.int/__data/assets/pdf_file/0007/255679/WHO_EVAP_UK_v30_WEBx.pdf

World Health Organization. Regional Office for Europe. (WHO Europe, 2018a). 18th meeting of the European technical advisory group of experts on immunization (ETAGE). 12–13 November 2018 Copenhagen, Denmark. World Health Organization. Regional Office for Europe. https://www.euro.who.int/__data/assets/pdf_file/0004/392665/18th-ETAGE-report-final.pdf

World Health Organization. Regional Office for Europe. (WHO Europe, 2018b). Health of refugee and migrant children. Technical Guidance. https://reliefweb.int/sites/reliefweb.int/files/resources/tc-health-children-eng.pdf

World Health Organization. Regional Office for Europe. (WHO Europe, 2018c). Report on the health of refugees and migrants in the WHO European Region: no public health without refugee and migrant health – Summary. https://www.euro.who.int/en/publications/abstracts/report-on-the-health-of-refugees-and-migrants-in-the-who-european-region-no-public-health-without-refugee-and-migrant-health-2018

World Health Organization. Regional Office for Europe. (WHO Europe, 2019a). Delivery of immunization services for refugees and migrants: technical guidance. World Health Organization. Regional Office for Europe. https://apps.who.int/iris/handle/10665/326924.

World Health Organization. Regional Office for Europe. (WHO Europe, 2019b). Health diplomacy: spotlight on refugees and migrants. World Health Organization. Regional Office for Europe. https://apps.who.int/iris/bitstream/handle/10665/326918/9789289054331-eng.pdf?sequence=1&isAllowed=y

World Health Organization. Regional Office for Europe. (WHO Europe, 2019c). Tailoring Immunization Programmes (TIP). Copenhagen: WHO Regional Office for Europe; https://www.euro.who.int/en/health-topics/disease-prevention/vaccines-and-immunization/publications/2019/tip-tailoring-immunization-programmes-2019

World Health Organization. Regional Office for Europe. (WHO Europe, 2020). Collection and integration of data on refugee and migrant health in the WHO European Region. Copenhagen: WHO Regional Office for Europe; 2020. https://apps.who.int/iris/bitstream/handle/10665/337694/9789289055369-eng.pdf

Zard M, Lau LS, Bowser DM, Fouad FM, Lucumí DI, Samari G, Harker A, Shepard DS, Zeng W, Moresky RT, Audi MN, Greene CM, Kachur SP. Leave no one behind: ensuring access to COVID-19 vaccines for refugee and displaced populations. Nat Med. 2021;27(5):747-749. https://www.nature.com/articles/s41591-021-01328-3

APPENDIX 4 - Barriers and solutions from the qualitative research by hub

AcToVax4NAM qualitative study

1. Introduction

This qualitative study is a key part of the "AcToVax4NAM" Project, which intends to improve vaccination access for Newly Arrived Migrants (NAMs) by making access conditions more equitable and guaranteed. The general objective of the AcToVax4NAM project is the improvement of the health system's Vaccination Literacy (VL) and access, by making access conditions more equitable and guaranteed, thereby leading to increased vaccination uptake by Newly Arrived Migrants (NAMs). The project will target Vaccine Preventable Diseases (VPDs) that are part of National Immunization Plans and will adopt a life course approach. Through the project, country-specific action-oriented plans will be developed to overcome system barriers, test solutions and different tools. The project will reinforce networking capacity and build healthcare system capacity for a more health literate and culturally competent system that promotes the active immunization for ss. AcToVax4NAM adopts a participatory and co-creation approach by actively involving the target groups in all phases of the project to forward a widespread acceptance of the proposed solutions.

Qualitative research was implemented in order to understand in-depth the actual experiences of the professionals FOR health involved in NAMs' immunization in seven EU member states: Poland, Germany, Italy, Spain, Malta, Greece, and Cyprus.

According to the AcToVax4NAM project operational definition, "NAMs" include individuals with **different citizenship** from the hosting country either from EU/EFTA Member States or Third countries that entered the EU consortium countries in the **last 12 months** (excluding tourists and short visa and permit of **< 3 months**), **plus 12 months** in case of **relocation** or **transfer** from EU countries (documented migrants, asylum seekers, refugees, and others forced to flee conflict, natural disasters or economic peril, as well as undocumented migrants)

2. Methods

Participants

Eligible participants included: (i) **health and social care professionals who work in the field of delivery of immunizations** with special attention to migrants if possible including physicians, nurses, social workers, psychologists, cultural mediators etc., (ii) **professionals, who work in managing/organizing immunization services** with special attention to migrants such as managers, administrative staff, physicians, nurses, social workers working in managing/organizing immunization services, and (iii) **experts related to immunization planning** with special attention to migrants if possible including policy makers, public health experts, actors involved in the development of the National Immunization Plan, migrant community leaders, etc.

All participants were recruited through the "AcToVax4NAM" partners' regional network. A clear explanation of the program, the study aim, objectives, and procedures were provided to all the participants. One FGD (with approximately 4-8 participants each) was conducted with each of the first two target-groups mentioned above (health and social care professionals who work in the field of delivery of immunizations and professionals, who work in managing/organizing immunization services), in the seven participating countries, while 3 PIs were conducted with the third target group (experts related to immunization planning), in the seven participating countries.

Focus group methodology

Focus Group Discussions (FGDs) and personal interviews (PIs) were conducted in order to gain insight into the experiences of the participants:

a) Identify and understand system barriers towards NAMs' immunization (legal, linguistic, cultural and logistic), as well as

b) Explore possible and sustainable solutions at country level.

c) Emphasis was also placed on the consequences of COVID-19 for the vaccination of NAMs and also on the opportunity COVID-19 has provided in the field of NAMs' immunization, if any.

FGDs and PIs were conducted in seven of the EU member states comprising the "AcToVax4NAM" consortium: Poland, Germany, Italy, Spain, Malta, Greece, and Cyprus.

Participants gave a written informed consent prior to the discussions. FGDs duration was 60-90´each; PIs duration was 44-60' each. Data were collected and analyzed between 10/2021 and 4/2022. Due to the coronavirus pandemic and in accordance to each partner country safety guidelines, focus groups and personal interviews changed into online focus groups and personal interviews. This modification did not alter the "classic" focus group and personal interviews methodology. Guidelines for performing online FGDs and PIs were provided to all partners by Prolepsis Institute –leading organization.

Focus group and personal interviews questions

The topics of the discussions **focused on 5 specific concepts/hubs** related to NAMs' vaccination that comprise the "General Conceptual Framework on how to improve the vaccination coverage of NAMs" (WP2, Task 4.5, milestone 4.2):

1. ENTITLEMENT to vaccination
2. REACHABILITY of people to be vaccinated
3. ADHERENCE (vs. Hesitancy) to vaccination
4. ACHIEVEMENT of vaccination (execution and completion)
5. EVALUATION of vaccination intervention

A common discussion guide was developed providing the frame of the discussions as well as indicative open questions. The discussion considered the ActoVax4NAM operational definition -differences in age and legal status of NAMs. Moreover, emphasis was given on the consequences of COVID-19 for the vaccination of NAMs and on the opportunity, COVID-19 has provided in the field of NAMs' immunization, if any.

Data analysis

Data were analyzed between 3/2022 and 4/2022. FGDs and PIs were transcribed verbatim in local languages and identifiers were removed to maintain anonymity. Transcripts were analyzed using thematic analysis (Hsieh and Shannon 2005). The organization responsible for the analysis (Prolepsis Institute) continued with the clustering of codes into emergent categories, which were then structured and grouped to overarching themes. Final validation of codes against data extracts was undertaken between each participating organization and the lead organization, to ensure the consistent representation of themes and categories to the entire data set.

3. Results

3.1. Descriptive characteristics of participants

In total, **117 people** participated in **13 FGDs and 53 PIs** in Germany, Poland, Spain, Italy, Greece, Malta, and Cyprus.

Focus Group 1: Health and social care professionals working in the implementation of vaccinations of minors and/or adult migrants.

Demographic characteristics for health and social care professionals who work in the field of delivery of immunizations are presented in **Table 1**. **Total number n=30**; 5 from Malta, 6 from Italy, 1 from Cyprus, 7 from Spain, 4 from Greece, 4 from Poland and 3 from Germany. Participants had a total mean age of 45.6±12.7 years and 22 out of 30 (73.3%) were females. Participants from Poland were the youngest of all with a mean of 34.3±8.7 years of age and participants in Italy, the eldest with a mean of 53.7±15 years of age. 43.5% had completed tertiary education and 43.5% had a master's degree (all participants from Spain did not answer the certain question). Most of them were physicians (43.3%) and nurses (33.3%). Most of them were employed in a health center (30%), an NGO (16.7%) or a municipality (13.3%). Participants were working in the area of immunization for 10.9±10.1 years on average and mainly with adults (76.7%) and adolescents (63.3%). Concerning newly arrived migrants (NAMs), 87.5% were working with documented NAMs, 75% with undocumented NAMs and 50% with resident migrants (all participants from Italy, Cyprus and Spain did not answer the certain question).

Table 1. Demographic characteristics of healthcare professionals work in the field of delivery of immunizations

	Total (N=30)	**Malta (N=5)**	**Italy (N=6)**	**Cyprus (N=1)**	**Spain (N=7)**	**Greece (N=4)**	**Poland (N=4)**	**Germany (N=3)**
Age (years)	45.6±12.7	52.4±14.9	53.7±15	40	39.9±9.8	45.3±10.6	34.3±8.7	48.7±7.6
Sex (females)	22 (73.3%)	4 (80%)	3 (20%)	0 (0%)	5 (71.4%)	3 (75%)	4 (100%)	3 (100%)
Education (N=23)								
Upper secondary education	1 (4.4%)	0 (0%)	0 (0%)	0 (0%)	-	0 (0%)	0 (0%)	1 (33.3%)
Post-secondary non-tertiary	2 (8.7%)	2 (40%)	0 (0%)	0 (0%)	-	0 (0%)	0 (0%)	0 (0%)
Tertiary	10 (43.5%)	3 (60%)	6 (100%)	0 (0%)	-	1 (25%)	0 (0%)	0 (0%)
Master	10 (43.5%)	0 (0%)	0 (0%)	1 (100%)	-	3 (75%)	4 (100%)	2 (66.6%)
Occupation								
Physician	13 (43.3%)	0 (0%)	6 (100%)	1 (100%)	4 (57.1%)	2 (50%)	0 (0%)	0 (0%)
Nurse	10 (33.3%)	5 (100%)	0 (0%)	0 (0%)	3 (42.9%)	2 (50%)	0 (0%)	0 (0%)
Administrative staff	2 (6.7%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (50%)	0 (0%)
Social worker	2 (6.7%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (25%)	1 (33.3%)
Cultural mediator	2 (6.7%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (25%)	1 (33.3%)
Expert	1 (3.3%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (33.3%)
Institution/organization (Yes/No)								
Health centre	9 (30%)	2 (40%)	1 (16.7%)	0 (0%)	5 (71.4%)	0 (0%)	0 (0%)	1 (33.3%)
Vaccination local/ national units	3 (10%)	2 (40%)	0 (0%)	0 (0%)	0 (0%)	1 (25%)	0 (0%)	0 (0%)
NGOs	5 (16.7%)	0 (0%)	1 (16.7%)	0 (0%)	2 (28.6%)	0 (0%)	1 (25%)	1 (33.3%)

Detention	1 (3.3%)	1 (20%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
State level organization	2 (6.7%)	1 (20%)	0 (0%)	1 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Municipality	4 (13.3%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	4 (100%)	0 (0%)
University	1 (3.3%)	0 (0%)	0 (0%)	1 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Regional health service	1 (3.3%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (25%)	0 (0%)
Refugee camp	1 (3.3%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (25%)	0 (0%)	0 (0%)
Other*	9 (30%)	0 (0%)	5 (83.3%)	0 (0%)	0 (0%)	3 (75%)	0 (0%)	1 (33.3%)
Concerning immunization do you work mainly with (Yes/No)								
Children	13 (43.3%)	4 (80%)	2 (33.3%)	0 (0%)	0 (0%)	3 (75%)	4 (100%)	0 (0%)
Adolescents	19 (63.3%)	4 (80%)	3 (50%)	0 (0%)	5 (71.4%)	4 (100%)	3 (75%)	0 (0%)
Adults	23 (76.7%)	5 (100%)	5 (83.3%)	1 (100%)	4 (57.1%)	3 (75%)	2 (50%)	3 (100%)
Elders	8 (26.7%)	2 (40%)	1 (16.7%)	0 (0%)	1 (14.3%)	3 (75%)	0 (0%)	1 (33.3%)
Concerning newly arrived migrants (NAMs), do you work mainly with (N=16)								
I don't work with NAMs	3 (18.8%)	0 (0%)	-	-	-	2 (50%)	0 (0%)	1 (33.3%)
Documented NAMs	14 (87.5%)	4 (80%)	-	-	-	4 (100%)	4 (100%)	2 (66.6%)
Undocumented NAMs	12 (75%)	5 (100%)	-	-	-	4 (100%)	2 (50%)	1 (33.3%)
Resident migrants	8 (50%)	3 (60%)	-	-	-	4 (100%)	0 (0%)	1 (33.3%)
Refugees	1 (6.3%)	0 (0%)	-	-	-	0 (0%)	0 (0%)	1 (33.3%)
Years working in the area of immunization	10.9±10.1	18.3±10.1	16.8±14.5	5	5.7±6.8	9.5±9.1	8.4±5.1	6.7±5.7
**including local health unit, scientist, researcher, Hellenic Red Cross, AWO SH*								

<u>Focus Group 2: Health and social care professionals working in the management/organization of immunization services for minors and/or adult migrants.</u>

Demographic characteristics for professionals, who work in managing/organizing immunization services, are presented **in Table 2. Total number n=35;** 7 from Italy, 3 from Cyprus, 5 from Spain, 9 from Greece, 4 from Poland and 7 from Germany. Participants had a total mean age of 42.4±9.1 years and 22 out of 35 (62.9%) were females. All participants had completed tertiary education, 63.3% had a master's degree and 10% a doctoral degree (all participants from Spain did not answer the certain question). Most of them were physicians (22.9%), social workers (11.4%), policy makers (8.6%) and administrative staff (8.6%). Most of them were employed in an NGO (34.3%) or a health center (20%). Participants were working in the area of

immunization for 7.1±7.3 years on average. 76.5% were working mainly with adults, 70.6% with adolescents, 50% with children and 35.3% with elders. Concerning newly arrived migrants (NAMs), 68% were working mainly with documented NAMs, 68% with undocumented NAMs and 60% with resident migrants NAMs (all participants from Spain did not answer the certain question).

Table 2. Demographic characteristics of healthcare professionals managing/organizing immunization services

	Total (N=35)	**Italy (N=7)**	**Cyprus (N=3)**	**Spain (N=5)**	**Greece (N=9)**	**Poland (N=4)**	**Germany (N=7)**
Age (years)	42.4±9.1	44.1±10	43±2.7	45.6±9.9	43.7±7.8	36±7.1	40±12.1
Sex (females)	22 (62.9%)	4 (57.1%)	3 (100%)	2 (40%)	6 (66.7%)	3 (75%)	4 (57.1%)
Education (N=23)							
Tertiary	8 (26.7%)	2 (28.6%)	0 (0%)	-	1 (11.1%)	0 (0%)	5 (71.4%)
Master	19 (63.3%)	4 (57.1%)	3 (100%)	-	6 (66.7%)	4 (100%)	2 (28.6%)
Doctoral	3 (10%)	1 (14.3%)	0 (0%)	-	2 (22.2%)	0 (0%)	0 (0%)
Occupation							
Physician	8 (22.9%)	2 (28.6%)	0 (0%)	2 (40%)	4 (44.4%)	0 (0%)	0 (0%)
Manager	2 (5.7%)	0 (0%)	0 (0%)	0 (0%)	2 (22.2%)	0 (0%)	0 (0%)
Nurse	2 (5.7%)	0 (0%)	0 (0%)	1 (20%)	1 (11.1%)	0 (0%)	0 (0%)
Policy maker	3 (8.6%)	0 (0%)	1 (33.3%)	0 (0%)	2 (22.2%)	0 (0%)	0 (0%)
Social worker	4 (11.4%)	1 (14.3%)	0 (0%)	1 (20%)	0 (0%)	1 (25%)	1 (14.3%)
Psychologist	2 (5.7%)	0 (0%)	1 (33.3%)	0 (0%)	0 (0%)	1 (25%)	0 (0%)
Cultural mediator	1 (2.9%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (25%)	0 (0%)
Administrative staff	3 (8.6%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (25%)	2 (28.6%)
Other[+]	10 (28.6%)	4 (57.1%)	1 (33.3%)	1 (20%)	0 (0%)	0 (0%)	4 (57.1%)
Institution/organization (Yes/No)							
Health centre	7 (20%)	2 (28.6%)	0 (0%)	4 (80%)	1 (11.1%)	0 (0%)	0 (0%)
Vaccination local/ national units	2 (5.7%)	0 (0%)	0 (0%)	0 (0%)	2 (22.2%)	0 (0%)	0 (0%)
NGOs	12 (34.3%)	3 (42.9%)	1 (33.3%)	1 (20%)	5 (55.6%)	0 (0%)	2 (28.6%)
Entry camps	2 (5.7%)	0 (0%)	0 (0%)	0 (0%)	1 (11.1%)	0 (0%)	1 (14.3%)

First reception	1 (2.9%)	0 (0%)	0 (0%)	0 (0%)	1 (11.1%)	0 (0%)	0 (0%)
State level organization	6 (17.1%)	0 (0%)	1 (33.3%)	0 (0%)	2 (22.2%)	0 (0%)	3 (42.9%)
Municipality	4 (11.4%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	4 (100%)	0 (0%)
Hospital	1 (2.9%)	0 (0%)	0 (0%)	0 (0%)	1 (11.1%)	0 (0%)	0 (0%)
University	3 (8.6%)	0 (0%)	0 (0%)	0 (0%)	3 (33.3%)	0 (0%)	0 (0%)
Refugee camp	4 (11.4%)	0 (0%)	0 (0%)	0 (0%)	4 (44.4%)	0 (0%)	0 (0%)
Other*	6 (17.1%)	2 (28.6%)	1 (33.3%)	0 (0%)	2 (22.2%)	0 (0%)	1 (14.3%)
Concerning immunization do you work mainly with (Yes/No)							
Children	17 (50%)	1 (14.3%)	1 (50%)	1 (20%)	8 (88.9%)	4 (100%)	2 (28.6%)
Adolescents	24 (70.6%)	5 (71.4%)	1 (50%)	2 (40%)	8 (88.9%)	4 (100%)	4 (57.1%)
Adults	26 (76.5%)	5 (71.4%)	1 (50%)	4 (80%)	5 (55.6%)	4 (100%)	7 (100%)
Elders	12 (35.3%)	2 (28.6%)	1 (50%)	3 (60%)	4 (44.4%)	0 (0%)	2 (28.6%)
Concerning newly arrived migrants (NAMs), do you work mainly with (N=25)							
I don't work with NAMs	5 (20%)	0 (0%)	1 (50%)	-	4 (44.4%)	0 (0%)	0 (0%)
Documented NAMs	17 (68%)	0 (0%)	2 (100%)	-	7 (77.8%)	4 (100%)	4 (57.1%)
Undocumented NAMs	17 (68%)	1 (33.3%)	1 (50%)	-	8 (88.9%)	4 (100%)	3 (42.9%)
Resident migrants	15 (60%)	0 (0%)	2 (100%)	-	9 (100%)	0 (0%)	4 (57.1%)
Refugees	2 (8%)	2 (66.6%)	0 (0%)	-	0 (0%)	0 (0%)	0 (0%)
Years working in the area of immunization (N=33)	7.1±7.3	8.6±6.6	1	13.6±10.7	7.9±7.1	5.9±4.7	1.3±0.6

[+]including volunteer, legal advisor, project assistant, coordinator, migrant community leader, researcher and public health professional

**including United Nations High Commissioner for Refugees (UNHCR) and Hellenic Red Cross, MiMi Hamburg*

Personal Interviews

Demographic characteristics for experts related to immunization planning are presented **in Table 3. Total number n=52;** 3 from Malta, 4 from Italy, 3 from Cyprus, 4 from Spain, 3 from Greece, 32 from Poland and 3 from Germany. Participants had a total mean age of 37.2±13.1 years and 33 out of 52 (63.5%) were females. 52.1% had completed post-secondary non-tertiary education, 8.3% tertiary education, 31.3% had a master's

degree and 8.3% a doctoral degree (all participants from Spain did not answer the certain question). Most of them were working as administrative stuff (48.1%), nurses (15.4%) or physicians (11.5%). Most of them were employed in a hospital (30.8%), a university (25%) or a health centre (17.3%). Participants were working in the area of immunization for 6.3±7.5 years on average. 86.5% were working mainly with adults, 57.7% with children, 55.8% with adolescents and 57.7% with elders. Concerning newly arrived migrants (NAMs), 93.5% were working mainly with documented NAMs, 39.1% with undocumented NAMs and 34.8% with resident migrants (all participants from Spain did not answer the certain question).

Table 3. Demographic characteristics of experts related to immunization planning

	Total (N=52)	**Malta (N=3)**	**Italy (N=4)**	**Cyprus (N=3)**	**Spain (N=4)**	**Greece (N=3)**	**Poland (N=32)**	**Germany (N=3)**
Age (years)	37.2±13.1	52±14.2	51.8±7.2	46.7±6.1	51.3±7.9	49.3±5.5	28.7±7.3	54±2.7
Sex (females)	33 (63.5%)	2 (66.7%)	2 (50%)	1 (33.3%)	3 (75%)	3 (100%)	21 (65.6%)	1 (33.3%)
Education (N=48)								
Post-secondary non-tertiary	25 (52.1%)	0 (0%)	1 (25%)	0 (0%)	-	0 (0%)	24 (75%)	0 (0%)
Tertiary	4 (8.3%)	0 (0%)	2 (50%)	0 (0%)	-	0 (0%)	0 (0%)	2 (66.6%)
Master	15 (31.3%)	1 (33.3%)	1 (25%)	3 (100%)	-	1 (33.3%)	8 (25%)	1 (33.3%)
Doctoral	4 (8.3%)	2 (66.6%)	0 (0%)	0 (0%)	-	2 (66.7%)	0 (0%)	0 (0%)
Occupation								
Physician	6 (11.5%)	2 (66.7%)	2 (50%)	0 (0%)	2 (50%)	0 (0%)	0 (0%)	0 (0%)
Nurse	8 (15.4%)	1 (33.3%)	0 (0%)	1 (33.3%)	1 (25%)	0 (0%)	5 (15.6%)	0 (0%)
Manager	1 (1.9%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (33.3%)	0 (0%)	0 (0%)
Expert	4 (7.7%)	0 (0%)	1 (25%)	0 (0%)	0 (0%)	2 (66.7%)	0 (0%)	1 (33.3%)
Administrative stuff	25 (48.1%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	25 (78.1%)	0 (0%)
Psychologist	2 (3.8%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (6.3%)	0 (0%)
Social worker	1 (1.9%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (33.3%)
Other[+]	5 (9.6%)	0 (0%)	1 (25%)	2 (66.7%)	1 (25%)	0 (0%)	0 (0%)	1 (33.3%)
Institution/organization (Yes/No)								
Health centre	9 (17.3%)	0 (0%)	1 (25%)	0 (0%)	2 (50%)	0 (0%)	6 (18.8%)	0 (0%)
Vaccination local/ national units	3 (5.8%)	2 (66.7%)	1 (25%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

NGOs	7 (13.5%)	0 (0%)	1 (25%)	0 (0%)	0 (0%)	1 (33.3%)	4 (12.5%)	1 (33.3%)
State level organization	7 (13.5%)	0 (0%)	1 (25%)	2 (66.7%)	2 (50%)	1 (33.3%)	0 (0%)	1 (33.3%)
Hospital	16 (30.8%)	1 (33.3%)	1 (25%)	1 (33.3%)	0 (0%)	1 (33.3%)	12 (37.5%)	0 (0%)
University	13 (25%)	1 (33.3%)	0 (0%)	0 (0%)	0 (0%)	2 (66.7%)	10 (31.3%)	0 (0%)
Regional health service	2 (3.8%)	0 (0%)	2 (50%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Refugee camp	2 (3.8%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (66.7%)	0 (0%)	0 (0%)
Other*	4 (7.7%)	1 (33.3%)	1 (25%)	1 (33.3%)	0 (0%)	0 (0%)	0 (0%)	1 (33.3%)
Concerning immunization do you work mainly with (Yes/No)								
Children	30 (57.7%)	3 (100%)	4 (100%)	2 (66.7%)	4 (100%)	2 (66.7%)	14 (43.8%)	1 (33.3%)
Adolescents	29 (55.8%)	3 (100%)	4 (100%)	1 (33.3%)	4 (100%)	2 (66.7%)	14 (43.8%)	1 (33.3%)
Adults	45 (86.5%)	3 (100%)	4 (100%)	2 (66.7%)	4 (100%)	3 (100%)	26 (81.3%)	3 (100%)
Elders	30 (57.7%)	2 (66.7%)	4 (100%)	1 (33.3%)	4 (100%)	2 (66.7%)	16 (50%)	1 (33.3%)
Concerning newly arrived migrants (NAMs), do you work mainly with (N=46)								
I don't work with NAMs	2 (4.3%)	1 (33.3%)	0 (0%)	0 (0%)	-	1 (33.3%)	0 (0%)	0 (0%)
Documented NAMs	43 (93.5%)	2 (66.7%)	4 (100%)	1 (100%)	-	3 (100%)	32 (100%)	1 (33.3%)
Undocumented NAMs	18 (39.1%)	2 (66.7%)	4 (100%)	0 (0%)	-	2 (66.7%)	9 (28.1%)	1 (33.3%)
Resident migrants	16 (34.8%)	2 (66.7%)	4 (100%)	1 (100%)	-	2 (66.7%)	4 (12.5%)	3 (100%)
Years working in the area of immunization	6.3±7.5	12±9.9	15.5±12.7	2±1	12±7.3	13.5±14.3	3.8±4.2	2±0

[+]including IT officer, ex minister of health, health professional working at United Nations High Commissioner for Refugees (UNHCR), community health agent, CEO, Specialist institution for legal care work

**including Public Health National Unit - Infectious Disease Prevention and Control Unit, Regional Level Orgnization - Department of Prevention and UN High Commissioner for refugees*

3.2. Entitlement to vaccination

3.2.1. Barriers and solutions per country

Barriers – Germany:

There are no legal or financial barriers towards NAMs immunization. **Everyone in Germany is entitled to receive vaccinations, free of charge. However, refugees have not been highly prioritized due to the lack of availability of vaccines.**

Moreover, **while policies providing vaccination access to all have been in place, public policy institutions have failed to deliver necessary information about the execution of vaccinations across the involved organizations (in the medical sector).** For example, widespread uncertainty was expressed among physicians concerning their ability to legally administer vaccines for people without legal papers, making professionals face a dilemma of either performing the vaccine free while possibly breaking a law, or rejecting to vaccinate.

Solutions – Germany:

Participants mention an increase in the availability of vaccines for NAMs, since May 2020 (beginning of the pandemic period).

Barriers – Greece:

When arriving to the country, migrants from Third countries remain in first reception camps and settlements mainly close to the country's land boarders and boarder islands. Vaccination is firstly addressed in these settings by first reception health services. The vaccination of newly arrived migrants is the responsibility of the Ministry of Health (responsible state body EODY/ National Public Health Organization). There are also civil society organizations (NGOs within the camps approved by relevant Ministries) involved with the vaccination of migrants.

The health professionals who participated in the study report that there are **no Standard Operational Procedures (SOPs) regarding the vaccination of newly arrived migrants to be followed by relevant authorities. A typical example is that there is no fixed vaccination schedule for this population and planning vaccination actions depends on the vaccines' availability at each time / period per area or specific outbreaks within the camps.** These vaccines are available either from EODY or from NGOs active in the camps, or from cooperating Hospitals.

State recommended vaccinations of newly arrived migrants from Third countries are free of charge for everyone without any exception. During their first stay in camps and until the legal procedures are completed (asylum application) and they move inland, migrants from Third countries obtain a temporary social number that provides them with free access to the health system. Once granted asylum, they obtain a social security number similar to that of the country's residents. Thus, they have the right to free of charge vaccinations.

Due to the unstable vaccine flow / supply of vaccines, vaccination starts with, (a) the vaccines available at any given time, and (b) children are prioritized in terms of vaccination.

The most commonly available vaccine for migrants from Third countries is MMR. Health professionals argue that the cost of the vaccine is low (15 euros) compared to other vaccines such as HPV for example, which is rather expensive (65 euros). Moreover, the MMR vaccine is about preventing diseases that potentially can develop into an epidemic, especially when living conditions are congested (camps). **Therefore, there is a prioritization for vaccinating against diseases that can cause outbreaks/epidemics.**

Solutions – Greece:

Health professionals argue that the **vaccination of migrants would be greatly facilitated if specific SOPs were put in effect and followed by all relevant health services. SOPs can cover all phases of vaccination, e.g. vaccine delivery, vaccine registration records, regular information campaigns for migrants, consistent training of mediators (issues to be discussed in more detail in the following sections). However, there seems to be no political will for developing and implementing SOPs.**

Health professionals also discuss the need for synergies between the State and civil society actors in order to strengthen vaccination uptake among NAMs. An example of such an activity takes place occasionally by the Municipality of Athens and the Ministry of Health, facilitating the organization of meetings between state and civil society organizations. During these meetings, efforts take place to understand what

organizations offer, what the needs and gaps are so as to encourage referrals and collaborations (e.g. during such a meeting for example an organization may announce that they will conduct MMR vaccinations so that other organizations know about it and can refer their beneficiaries). However, health professionals point out that *"these efforts should be done more systematically".*

Barriers – Italy:

The FG and interview participants report that there are **no national documents or policies that refer specifically to NAMs. However, there are relevant documents related to refugees and asylum seekers.** Although different types of migrants are included in the Italian National Immunization Plan, they are not highlighted as immunization beneficiaries in policies or regional/ national documents. **This can lead in some cases professionals to exclude them from vaccinations due to misunderstanding the immunization plan. Moreover, there is lack of awareness among newly arrived migrants concerning their right to access vaccinations.**

Solutions – Italy:

In Italy participants stress that **immunization services for migrants should be emphasized in regional/ national documents.**

Barriers – Malta:

Participants pointed out that vaccines are not free-of-charge for Third country nationals who are applying for work permits. When applying for a work permit, routine vaccinations are checked therefore, migrants may need to have certain vaccinations performed depending on the job they are applying for. These vaccinations need to be paid by the individual himself/herself. On some occasions the company employing the individual may pay for the vaccines. **Therefore, there is a financial barrier concerning the immunization of Third country nationals especially those who are applying for a work permit.**

Solutions – Malta:

A solution proposed by the FG/interview participants is to **ask Third country nationals applying or planning to apply for a work visa/ permit to have concluded specific vaccinations before they arrive to the country. This policy ensures that all routine vaccinations would have been performed and completed before arrival, and therefore reduces the burden on the national healthcare system.**

Barriers – Cyprus:

NAMs who arrive in Cyprus by sea, register at nearby police stations and then move to reception centers where they apply for asylum. At this stage, medical screening starts that includes testing for TB (using the Mantoux test that is widely used for latent TB diagnosis), HIV and hepatitis. **During their first medical screening, certain mandatory immunizations are performed which are compulsory for all adult migrants: polio, tetanus and diphtheria. Unaccompanied minors are given the following mandatory immunizations: polio, tetanus, diphtheria and Pertussis. It is mandatory for all asylum seekers to go through reception centers and conduct and complete healthcare tests. Only then they can move to the mainland.**

A logistical barrier mentioned concerns the provision of a medical/ health card to NAMs from Third countries. Obtaining a medical/ health card in a reception center is quite fast. **However, there is only one reception center for asylum seekers in Cyprus.** Getting a medical/ health card through the Ministry of Health is a time consuming process. **Since October 2021, NAMs admission waiting lists are increasing causing delays in terms of medical screening (and therefore vaccinations). There are also significant waiting lists outside the camp.** Questions were posed about why people outside the camp could not be screened faster. An answer to this question is that priority is being given to NAMs with vulnerabilities.

Another difficulty mentioned by healthcare professionals is that they don't know whom to contact in case of special medical issues as there is no contingency plan highlighting what should be done when faced with different circumstances.

Solutions – Cyprus:

It is important to ensure that all important information concerning the immunization of NAMs from Third countries is communicated in a standardized way to all healthcare professionals involved in this process. Solutions mentioned included an instruction document or a tick-off list for healthcare professionals working with migrants.

Barriers – Spain:

In the absence of national/regional protocols specific to the immunization of NAMs, immunization coverage varies and is mainly based on the level of personal interest and professional experience of care providers. Moreover, professionals working in various health centers highlighted barriers related to **limited resources, i.e. limited availability of vaccines as well as limited human resources for outreach activities.**

As far as administration-related barriers are concerns, participants commented about the difficulties in issuing health cards for NAMs, problems with vaccine registers and contact tracing, bureaucratic delays with official documentation, exclusion of NAMs from public health programs as well as difficulties in healthcare access.

Barriers – Poland:

Participants in Poland report there is a lack of national immunization plan for migrants.

Solutions – Poland:

- **NAMs acquire the right to free vaccinations, just like regular Polish citizens (after 90 days of obtaining the legal right to stay in Poland)**
- **The immunization of NAMs is covered financially by the state**

3.2.2. Key findings concerning entitlement to vaccination

- Participants in Spain emphasised the importance of universal healthcare for all.
- **Focus Groups and Interviews showed that in all countries, there is an absence of protocols specific to the immunization of NAMs. Procedures seem to be much more explicit concerning asylum seekers, however, public policy institutions have not considered rights to vaccination specifically for NAMs.**
- **Even though Germany and Greece offer free access to vaccinations, NAMs from Third countries (not including the EU) are not prioritized mainly due to a lack of availability of vaccines/ vaccine flow. In Greece, a prioritization is provided for vaccines against diseases that can cause outbreaks/epidemics, i.e. MMR.**
- **The situation seems to be not the same in Cyprus were NAMs from Third countries receive standard vaccinations in reception camps (Mantoux test, polio, tetanus and diphtheria), but this process is characterized by long delays.**
- **Malta stresses a financial barrier concerning the immunization of Third country nationals who apply for work permits, since vaccinations are needed when applying for a job. Work permit seekers are urged to pay for vaccinations themselves.**

3.3. Reachability of people to be vaccinated

3.3.1. Barriers and solutions per country

Barriers and solutions – Germany:

There is a need for close collaboration among public policy officials and NGOs: How the different Federal States coordinate vaccination efforts was unclear to institutions and NGOs according to participants. Recently

legislation links NGOs and institutions to specific contact persons at the state level, and vaccination efforts for migrants are running more smoothly.

Barriers – Greece:

When arriving in the country migrants from Third countries stay in first reception camps or settlements. Therefore, in terms of location it is practically easy (a) to reach populations in need of vaccinations (b) to inform them, and (c) and proceed with vaccinations.

The following services/organizations are involved in organizing the delivery of vaccinations:

- EODY/ National Public Health Organization or NGOs that provide vaccines or perform vaccinations.
- Public hospitals to which migrants from Third countries are referred for vaccination.
- Camp or settlement social services that undertake the organization of vaccinations and mediating between beneficiaries and vaccination services.
- Procedures need to be approved by the relevant administration authorities of the camp or settlements

Vaccination in camps can be carried out (a) inside the camps through mobile units of EODY or NGOs, (b) by medical services within camps with vaccines provided by EODY or other NGOs, (c) by appointments in public Hospitals (with social services booking appointment).

During migrants' stay in camps, the monitoring of vaccination (e.g. booster doses) is controlled and planned by responsible bodies within the camp (state bodies or civil society bodies) in cooperation with social services. Communication between responsible bodies and beneficiaries is direct and is done through cultural mediators. In addition, there are initiatives for the promotion of vaccination implemented in camps which aim at sensitizing and informing migrants. However, it is worth noting that each camp and, respectively, each service that performs vaccinations follow their own method of approaching and communicating with migrants. In many cases these efforts do not include activities to inform people about the benefits of vaccination.

As health professional argue *"the period of migrants' stay in the camps seems to give a very good opportunity for the cultivation of a "culture of vaccination", so that they seek vaccination for themselves and for their children when moving to the mainland. But this can only happen when there are initiatives for the promotion of vaccination."*

Migrants who have moved to the mainland and either reside in apartments or stay in shelters for unaccompanied minors navigate the health system through civil society organizations that provide services to the specific population or the shelters' social services for those staying in shelters, respectively. They provide information, mediation in making appointments, and cultural mediators, if required (i.e. to services that may not have interpreters). Moreover, they accompany migrants to healthcare services.

Regarding vaccination records, from the moment migrants enter the country, an attempt is made to record their vaccination status at entry points / check-points (camps). However, most do not have vaccination certificates from their countries of origin or other places they have lived in during the migrant journey. Vaccination services keep relevant records EODY or other NGOs or camp based medical services however, this file/ record/ data base is not shared or part of a unified vaccination system and remains internal to the service providing the vaccinations.

Each migrant is provided with the WHO yellow immunization record book where vaccinations made in Greece as well as any other older vaccinations are recorded. **A challenge reported by health professionals is that many times migrants loose these yellow books when they move to the mainland. At the same time and as mentioned above, there is no common database for recording migrant vaccinations. Therefore, there may not be a continuation of the vaccination circle (for vaccines that also need booster doses). Migrants may be asked to get the same vaccine for a second or third time, while their vaccination may not be completed due to their relocation (they leave the country suddenly and continue their journey).**

Solutions – Greece:

Health professionals discuss the importance of developing a common database for recording migrant vaccinations to which all involved organizations would have access. In this way, it would be possible to systematically monitor vaccination coverage overall as well as for each migrant individually. However, this may raise issues of confidentiality and data protection.

Moreover, health professionals focus on the need for raising migrants' awareness about vaccination. Information and sensitization of the particular population is an important milestone towards their compliance, and the continuation of vaccination on their own free will. Professionals mention the need to develop and implement sustainable public health activities focused on vaccinations, and present relevant good practices (detailed presentation in chapter 3.4.1).

Barriers – Italy:

The vaccine offer is designed for the resident population. In particular, the active call for vaccines is based on the regional health registry, which is aligned with the regional registry that records residency. These two registries must also be periodically aligned based on the mobility of people between regions and this sometimes leads to criticalities, particularly for migrants who move between regions and for those who do not have residency. In addition to the health register, opportunities for active vaccination offerings are based on age. If a new entrant (e.g. a NAM) is not in the age group where a specific offer is made, he or she is not reached by the vaccination offer.

There are differences in the way different types of migrants in terms of age and gender are reached by the National Health System in order to get vaccinated. In fact, for children, relevant services are supported by a regulation stating that vaccinations are required for school enrollment. Moreover, migrant women come into contact with health services through reproductive health pathways. Therefore, "the health system has a chance" to offer vaccination and to evaluate the vaccination status of pregnant migrant women.

Another difference regarding the reachability of migrants in order to get vaccinated is their status. Those who enter Italy through legal channels are less aware of vaccination obligations than those applying for asylum and residing in reception centers. However, in reception centers, relevant activities are not homogeneous.

Moreover, NAMs seem to have other priorities apart from vaccinations, i.e. finding work, housing, reaching their final destinations etc.

Solutions – Italy:

All sectors of the health system (even administration and registration) coming into contact with NAMs, need to promote immunization. In addition the need to extend vaccination mandates beyond the usual settings such as school is necessary. For example, other bodies (such as the police, labor offices etc.) could also require vaccination upon request of services. The proposal is that all the usual points NAM contact should be in a position of promoting, suggesting or requesting vaccinations.

Regarding proximity strategies, it is important to focus on the construction of "vaccination pathways" and not only on the provision of single services. In particular, proximity strategies such as mobile clinics have been ineffective. On the other hand, doing the opposite and 'bringing migrants into the health services' resulted to positive outcomes. In order to strengthen proximity strategies, it is important to train staff.

Barriers – Malta:

One issue highlighted by participants is the **difficulty to trace newly arrived undocumented migrants in the community particularly once they move from reception centers, into open centers and, then into the community. The majority faces language barriers, which hinder them from integrating into the healthcare system, while some do not want to be identified.**

When undocumented migrants arrive to Malta by sea, they are given a police number as a form of identification. When migrants need to access the healthcare system, they are given a temporary "F" number, and if they visit health services multiple times, they are given a new "F" number each time (the healthcare system does not recognize their police number). Therefore, it is not possible to keep all their records in one place as the information related to each visit is linked to a separate identification number (F numbers).

Undocumented migrants who arrive by sea come in collectively, and those who apply for asylum are also referred to the Public Health Services (from the Commissioner for Refugees) and there is a whole process of

health screening and vaccination done by Public Health Services. Moreover, adults from Third countries or non-EU countries are identified when applying for a work permit, while children who are not fully vaccinated with the necessary vaccines are identified by the school. **However, identifying EU nationals is rather difficult unless they appear on their own will or are identified as having missing vaccinations when utilizing health care services.**

Persons who miss their appointments are sent a notification letter to their permanent address. Additionally, children who do not follow the full vaccination course are identified in the beginning of their school enrolment. **However, migrant families often change address and they do not inform the relevant vaccination services. Moreover, there is need to provide detailed information to children's parents in order to understand the procedure and the need for immunization.**

Solutions – Malta:

One solution to the issue of identification which has been proposed by participants is inputting/ inserting/matching the police number ID provided to migrants with the official hospital patient administration system (CPAS). However, this requires collaboration with hospital staff, immunization centers, IT staff and other relevant stakeholders.

Barriers – Cyprus:

The majority of migrants from Third countries came from African, therefore French is their first language. Other migrants speak Arabic and English. There is a much smaller proportion of migrants from Bangladesh, India, Pakistan and Turkey.

Participants mention that 80% of NAMs from Third Countries has a smartphone (with a touchscreen) so they have access to online information. When moving into the mainland (after leaving the reception center) there is on-line and/ or face-to-face communication and support on how to receive their vaccination certificates as well as visiting vaccination centers. **However, not everyone has a cell phone or their number might change when leaving the reception center. Therefore, follow-ups are difficult.**

Migrants can easily access Migrant Information Centers that exist in all cities with the objective of supporting migrants. Information about vaccines is available from the centers' webpages. The Refugee Council of Cyprus also has instructions and documents translated in various languages concerning migrant immunization. **However, communication campaigns are rare and are not used as a frequent tool for the promotion of immunization among migrants.**

Health visitors with a nursing background play an important role in educating young migrant mothers (by visiting them at home and the hospital) on reproductive health, maternal and child health including issues such as personal hygiene, breastfeeding, vaccination etc. However, translated into migrant languages educational materials are rare. In addition, language barriers are mentioned as a problem especially in terms of not being able to communicate the side effects of immunization. In the past nurses did receive intercultural training on how to handle sensitive issues when communicating with migrants. A good example of intercultural communication when delivering care to migrant women was the fact that migrant women did not want to be examined by a male gynecologist.

Solutions – Cyprus:

Participants mention that vaccination instructions are translated into various migrant languages in the various vaccination centers and this is indeed helpful. In addition participants mention the crucial role of health visitors when it comes to the vaccination of migrants from Third countries: The Ministry of Health is directly involved in the immunization of migrants in reception centers with the involvement of health visitors. Health visitors in Cyprus work either autonomously or in co-operation with other professionals (in the health and/or social services) for planning, implementing and evaluating all primary health care services (including immunizations).

Participants agree on the need for continuous education of nursing personnel in terms of improving cultural competencies.

Moreover, FG & interview participants mention that media communication campaigns (TV and radio) specifically for migrants would not be the most preferred way for NAMs. Finally, the importance of

ensuring cultural sensitivity of the communication campaigns concerning migrant immunization was stressed, e.g. sexually transmitted diseases.

Barriers – Poland:

Participants in Poland report barriers as follows:

- **No assessment of the vaccination status of migrants after arrival**
- **No data available on the immunization of NAMs -no national databases, regional and local**
- **No effective channels for locating and contacting NAMs in order to get vaccinated**
- **No adequate, culturally competent and easily accessible information provided to NAMs about vaccinations i.e. translated leaflets, materials, presentations, etc.**

Solutions – Poland:

- **Provision of information to NAMs that vaccination is a voluntary, confidential, non-stigmatizing process.**
- **More cultural mediators provided by the state and NGOs.**
- **Cooperation among stakeholders involved in the immunization services.**

3.3.2. Key findings concerning the reachability of people to be vaccinated

- Locating NAMs to organize immunizations seems to be a challenging procedure for all countries, since there is lack of well-organized immunization records/ data bases for the specific population.
- NAMs for immunizations depends on:
  - Migrant status: asylum seekers can be easily reached in reception centers, when first entering the country.
  - Age of NAMs: children can be reached through schools, as certain vaccinations are mandatory/encouraged when enrolling in schools.
  - Gender: female NAMs can be reached and informed about vaccinations (infant, child and adult vaccination) through gynecological/maternity visits and reproductive clinics/ programs.
- The main challenges concerning vaccination are when NAMs start to live in the wider community:
  - They often move to another country (this is especially true for first entry countries)
  - They often change address or move to another region without informing about their new address hence invitation letters for booster shots (where available) cannot be delivered.
  - Thy often change contact mobile numbers hence messages concerning up-coming immunizations, immunization certificates cannot be sent to them)
  - Undocumented NAMs avoid visiting vaccination centers, due to fear of deportation
  - Lack of culturally sensitive and language specific campaigns for NAMs about immunizations
- There is need for development of proximity strategies based on best practices in each country:
  - Germany: need to develop closer collaboration among public policy officials and NGOs
  - Greece: information and sensitization of the particular population about vaccinations is an important millstone towards their compliance, and the continuation of vaccination on their own free will.
  - Italy: regarding proximity strategies, it is important to focus on the construction of “vaccination pathways” and not only on the provision of single services. Moreover, all sectors of the health system (even administration and registration) that come into contact with NAMs, should be able to promote and encourage immunization. Vaccination mandates could also be extended beyond schools, to other organisations such as the police, labor offices etc. that could require evidence of vaccinations.
  - Cyprus: the involvement of health visitors and nursing personnel in informing NAMs about immunization after receiving training on cultural competence.
  - Poland: adequate, culturally competent and easily accessible information provided to NAMs about vaccinations i.e. translated leaflets, materials, and information sessions.

3.4. Adherence (vs. hesitancy) to vaccination

3.4.1. Barriers and solutions per country

Barriers – Germany:

Legal barriers: people without legal documentation are entitled in Germany to receive free vaccination. Therefore, there are no legal barriers towards the vaccination of migrants. However, participants expressed "uncertainties", concerning the vaccination process, discussing prior experiences with the German health system that caused problems with the immunization of people without legal documentation. In particular, a fear of deportation is reported among undocumented migrants as well as a distrust of refugees in terms of whether medical confidentiality is maintained.

Economic barriers: As mentioned above vaccinations are free for everyone. No costs associated to receiving vaccinations were mentioned by participants. As the vaccination process mainly happens online a lack of access to the internet was indicated as an indirect economic barrier by participants. Especially people in socially difficult situations (e.g. persons with disabilities) may not have the financial ability to have a Wi-Fi connection that would enable them to access the online vaccination registration systems.

Logistic or digital barriers: getting vaccinated was perceived as highly inconvenient by refugees and migrants, many of which did not attend their second vaccination date. Particularly migrants and refugees, as well as elderly members of these communities had difficulties navigating the online registration for the vaccination.

Cultural-linguistic barriers: refugees and those without papers were unable to understand the vaccination documents and also had difficulties communicating with physicians. Social workers stressed the importance of having more cultural mediators in the vaccination centers. Participants also stressed the lack of cultural competence of translators and healthcare workers. Locating under-vaccinated communities of migrants and refugees for state level institutions could only be possible if collaboration with NGOs was to be achieved.

Solutions – Germany:

Solutions to legal barriers: providing refugees with certificates that enable them to receive anonymous health services has proven to be a feasible solution in the past. However, this opportunity is no longer possible. Mobile vaccination sites are a solution to overcoming the barriers caused by the complex registration system -providing vaccinations without the necessity for those to be vaccinated to register or plan ahead.

Solutions to logistic or digital barriers: participants highlighted the effectiveness of Mobile Vaccination Buses. Mobile vaccination teams (in busses) were located in public spaces and city centers providing access to immediate on the spot vaccinations. The presence of doctors in the team increased the trust of migrants as did translators.

Solutions to cultural-linguistic barriers*:* the presence of cultural and language mediators increased the uptake and actual immunization of NAMs. Training of cultural mediators with the use of reliable educational material about vaccinations is also important. Moreover, availability of information concerning vaccinations in migrant languages has a direct positive impact on vaccination success.

Solutions to psychological barriers: collaborating with migrant community leaders increase migrant immunization. Multilingual information events in advance to vaccination programs were perceived as a key to improving the vaccination readiness of migrants and refugees.

Barriers – Greece:

According to health professionals, adherence or hesitancy to vaccination depends, to a large extent, on migrants' information and sensitization about vaccinations. As mentioned in the previous chapter, there are no consistent health promotion actions that focus on vaccinations. These vary by organization and camp or do not exist at all. The existence of such actions seems to enhance adherence, while reduce hesitancy.

During discussions with health professionals, a case study was presented. Participants described a situation in which unaccompanied minors living in a shelter were regularly vaccinated, however, no informative actions took place concerning vaccinations. The role of this service was to (a) organize appointments (e.g. in municipal clinics), (b) inform about the day and time of the scheduled vaccination, (c) provide cultural mediators, if required. According to participants, this course of action does not cultivate a "vaccination culture" but rather one in which vaccinations are "mandatory".

Adherence (vs. hesitancy) to vaccination also depends on: (a) appointment booking, (b) proximity of vaccination centers, (c) language barriers (availability of mediators and ability to translate adequately what is told by doctors).

Health professionals, talked about cases where interpreters had not previously received relevant training on the importance of accurately translating medical terms and advice. A typical case discussed was that of a translator who, after the vaccination took place, translated what the doctor said in a completely different way. While the doctor said "your hand may swell and you may have fever in the next 24 hours", the translator based on his own culture and “feelings” translated "go home, rest and you will not suffer anything". According to health professionals, this can lead to "lack of confidence" and "doubts" about the vaccine, as the vaccinated person may have side effects that could frighten them and which previously was not informed about.

Regarding the proximity of vaccination centers, it seems that most vaccinations take place inside the camps where migrants live or in nearby hospitals. Regarding migrants who live on the mainland, apartments or shelters are located in the city center, very close to organizations (public and NGOs) that provide health services including vaccinations. These organizations mediate to organize vaccination appointments but also provide vaccinations in their medical centers as well as interpreters, if required.

Vaccination adherence (vs. hesitancy) also depends on culture and many health professionals report that adherence is also related to the educational level of migrants. However, health professional argue that providing detailed information regarding vaccination in general and for each vaccine is important to promote and influence vaccination uptake among this group.

Solutions – Greece:

Best practices for sensitizing and informing migrants about vaccination reported by health professionals are the following:

Providing information prior to the actual vaccination – sensitizing the population

- Developing and implementing information sessions with each migrant community (based on the country of origin) about (a) vaccinations in general and their importance, and (b) the importance of specific vaccines available each time.
  Information sessions are usually organized by NGOs active in the field, with the assistance and cooperation of camp or NGO social services who are more familiar with beneficiaries and can inform them accordingly. During these information sessions (a) physicians or/and public health experts should be the presenters, (b) properly trained translators/ cultural mediators undertake the interpretations, (c) possibility of dialogue and open questions from beneficiaries, and (d) printed informative material provided in the language of each community –in a simple text and form. Material could also be available electronically.
- Developing and implementing information sessions with community leaders about the importance of specific vaccines available each time. It seems that community leaders have an important impact on beneficiaries and affect adherence (vs hesitancy) to vaccination.
- Informing new mothers during pregnancy about ways of caring and protecting their infants, including vaccinations. According to camp officials, mothers who became pregnant and gave birth inside the camps were aware of their children's vaccination needs because of regular and immediate information from physicians and midwives about infant care and vaccination.
- Attending school seems to be an important trigger for vaccination. Although the vaccination of children is not mandatory for attending schools a vaccination record in required when enrolling students, with an emphasis on the MMR vaccine.
- Another trigger for vaccination, for migrants who want to continue their journey to other European countries, is the knowledge that if they have completed specific vaccination cycles their transfer to another country could move faster (the application for transfer to another country is accompanied by many official documents including a vaccination certificate).

Providing assistance / support during the actual vaccination

- In case of planned vaccinations in camps (e.g. mobile units or vaccines that are performed by medical services inside the camps), health professionals suggest the following best practices in combination or individually: (a) door-to-door visits in order to inform beneficiaries about the upcoming vaccination, (b) a note on their door about the day and time of the event, (c) sending mobile messages (sms) to all

beneficiaries who have a mobile phone, (d) posting on social media (camp page, community leaders). All this information needs to be translated into migrant language.
- Based on the vaccination records that each organization seems to keep (camps, NGOs, EODY) (a) informing beneficiaries about the next vaccinations, (b) making appointments, if needed, (c) escorting and interpreting, if required.

Barriers – Italy:

Language barriers: Letters of invitation or vaccination reminders are sent in Italian.

Cultural barriers: Lack of cultural mediators in the vaccination services for migrants.

Solutions – Italy:

The most important issue that needs to be addressed is the ability of services to build relationships of trust, through proximity approaches. Therefore, the presence of mediators and mediation, in addition to a space that would allow room for dialogue and openness, are of fundamental importance. More specifically:

- Across all healthcare services for migrants, vaccinations need to be promoted, i.e. “When someone registers for the National Health Service together with the print-out of the health card I can give them a brochure about vaccination.”
- Training, including training of cultural mediators, on how (a) to communicate the need for the vaccination to migrants as well as (b) to discuss with migrants their fears, misunderstandings or misinformation.
- Progressively involve all members of a household, i.e. “the child, or the adult, or the sick woman comes to you to ask for help, you start from that person to do part of the work, to build a relationship of trust, transferring knowledge and sensitization. Little by little, the whole family is influenced.”
- Linking vaccination to the possibility of work, as shown by the COVID experience with the “green pass”.

Barriers – Malta:

In Malta vaccination hesitancy is focused mainly on migrants from certain European countries (anti-vaccination movement) and not Third countries. Linguistic and cultural barriers are mentioned concerning migrants from Third countries: lack of information about immunization in their languages and lack of cultural mediators and interpreters. “We don’t always have materials in all the different languages’. Moreover, immunization might be a stigmatizing process for migrants.

Solutions – Malta:

Cultural and linguistic barriers could be overcome by increasing the number of cultural mediators, who, in turn will help (a) in translating essential information, (b) healthcare professionals to understand cultural beliefs hindering migrants from vaccination.

The fact that specific immunizations are mandatory in case of work permit and school enrolment increase adherence to vaccination.

Barriers – Cyprus:

Linguistic and cultural barriers are mentioned concerning migrants from Third countries: lack of information about immunization in their languages and lack of cultural mediators and interpreters. **Moreover, migrants do not have the support they need from health and/ or social services in order to book appointments in the healthcare system for vaccinations. For undocumented migrants there is fear of visiting vaccination services, as there is a fear they may be linked with the authorities and the police.**

Solutions – Cyprus:

Providing information as well as leaflets about vaccination in migrant languages can increase vaccination. Moreover, organizing information sessions about vaccinations with each migrant community, where there is space for open-questions and dialogue decreases misunderstandings and misconceptions. In addition, provision of relevant information and collaboration with community leaders can lead to better results in terms of migrant adherence to immunization.

Barriers – Spain:

In terms of communication, various participants commented about **the insufficiency of some vaccine campaigns, the lack of update of contact information for tracing, as well as not using migrant channels of communication in the host country. Participants also mentioned that health care programs specific to the needs of NAMs** do not exist for example health centers are isolated with no outreach activities in most cases, as well as a lack of training for professionals who either are unaware of how the public system can respond to NAMs´ needs or they are not aware about migration issues.

In terms of poor health & vaccination literacy among NAMs, a lack of sensitization initiatives about the importance of immunization and the concept of health and disease prevention was mentioned. Furthermore, the lack of knowledge about vaccinations was related to related taboos concerning vaccines and the lack of trust towards the public health system. **Cultural barriers related to NAMs vaccination included fear about their legal status, inability or shame to ask for a day-off-work in order to make health visits as well as limited healthcare access for some Asian women because of their cultural isolation and their limited empowerment.** Participants also commented about linguistic barriers and the inability of some NAMs to read posters and flyers on vaccination.

Solutions – Spain:

Participants highly valued the cultural adaptation of the system to the NAMs´ needs, the linguistic adjustment of vaccination campaigns, and the involvement of intercultural mediators in vaccination-related education programs. Issues of accessibility, such as the establishment of vaccination protocols for NAMs, pediatric healthcare vaccination plan, healthcare follow-ups, ability to place healthcare teams at NAM arrival points, and mobile vaccination points were among the most important issues discussed by the participants. The right to universal free of cost access to healthcare was also extensively discussed. Finally, the need to establish collaborations between primary health care, the social care sector and NGOs was positively commented especially in terms of coordinating vaccine referrals and follow-up of NAMs.

An additional strong enabler was mentioned by healthcare professionals, involved in the delivery of vaccines, which was educating migrant mothers on vaccination and issues of early childhood.

Solutions at the public healthcare system level included the following:

- **Development of human resources:** importance of training initiatives focusing on the development of cultural competency skills for health professionals, raising awareness on migration issues in the country, systematic inclusion of community level cultural agents. The training of healthcare professionals was considered necessary for the establishment of trustful doctor-patient relationships and the promotion of patient respect in healthcare in terms of migrants´ autonomy and time.
- **Development of mobile health units:** it was considered important to develop certain proximity with this population group and establish immunization units at strategic points such as NAM arrival centers.
- **Coordination and networking:** participants commented on the importance of continuity of care, vaccine registers for all, as well as coordination actions between social and health institutions.
- **Work with intercultural health agents:** they can offer peer support and education on the importance of immunization while using the usual communication channels in the respective migrant communities.
- **Needs assessment leading to cultural competent health promotion campaigns.** Needs assessment may also reveal other vulnerabilities, health inequalities and specific limitations in immunization coverage.

3.4.2. Key findings concerning adherence (vs. hesitancy) to vaccination

- It is important to mention that NAMs from Third countries are more willing to get vaccinated compared to NAMs from other European or EU countries, who often have strong “anti-vaccination” beliefs (stressed by participants in Malta).

- Adherence (vs. hesitancy) to vaccination depends on: (a) providing information prior to the actual vaccination aiming at sensitizing and informing the population, (b) appointment booking, (c) proximity of vaccination centers, (d) language barriers (availability of mediators, cultural competence of mediators and ability to translate adequately what is told by doctors).
- In order to overcome these barriers participants emphasize the need for building relationships of trust through the presence of mediators who can promote vaccinations through dialogue and openness. More specifically:
  - Training on how (a) to communicate the need for vaccinations to migrants as well as (b) how to discuss fears, misunderstandings or misinformation.
  - Progressively involve all members of a household in vaccinations. Starting usually from the child reach out to other members so progressively involving all the family members in vaccinations.
  - Developing synergies between NGOs active in the field and public organizations responsible for NAMs' vaccination, i.e. in Greece information sessions are usually organized by NGOs active in the field, with the assistance and cooperation of the social services of camps/ reception centers that are more familiar with beneficiaries and can inform them accordingly, in Germany NGOs are linked to a specific contact person at state level, and therefore vaccination efforts of migrants run smoothly.
  - Organizing and implementing information sessions with community leaders about the importance of specific vaccines. It seems that community leaders have an important impact on beneficiaries and affect adherence (vs hesitancy) to vaccination.
  - Use of mobile units or "mobile vaccination busses"
- Providing assistance / support during actual vaccination
  - For vaccinations taking place in camps (e.g. mobile units or vaccines performed by medical services inside camps), health professionals suggest the following best practices in combination or individually: (a) door-to-door visits in order to inform beneficiaries about the upcoming vaccination, (b) a note on their door about the day and time of the event, (c) sending mobile messages (sms) to all beneficiaries who have a mobile phone, (d) posting on social media (camp page, community leaders). All this information needs to be translated into migrant languages.
  - Based on existing vaccination records that often organizations seem to keep (camps, NGOs, national public services): (a) informing beneficiaries about vaccinations and booster vaccinations – letters need to be translated in the NAMs languages, (b) making appointments, if needed, (c) escorting and interpreting, if required.
- Moreover:
  - Vaccinations need to be promoted by all services caring for migrants. When patients visit a facility for an issue irrelevant to vaccination an information leaflet or brochure can be provided regardless of the fact that vaccination was not the reason for visiting.
  - Linking vaccinations to employment, as reflected with in the COVID experience and the "green pass".
  - Another trigger for vaccination, for those migrants who aim at continuing their journey to other European countries, is making vaccination compulsory in order to be able to continue their journey.

3.5. Achievement of vaccination (execution and completion)

3.5.1. Barriers and solutions per country

Barriers – Italy:

The vaccination status of the majority of adult migrants entering the country is not checked. Also the collection of vaccination history for each migrant is overlooked. NAMs often do not know their vaccination history and rarely have any vaccination certificates. In case they do have evidence of their vaccinations, it is not easy for someone to understand it due to language barriers. Sometimes, the vaccines reported are not valid for the country of entry.

Even though migrants are registered with the National Health System, they do not have easy access to general practitioners and pediatricians. Therefore, they are not regularly informed about vaccinations.

Solutions – Italy:

The State needs to ensure the NHS's ability to offer vaccinations to NAMs. Moreover, it is important that **the NHS and the vaccination services collaborate with NGOs and migrant communities**, in order to plan and organize a vaccination path and to offer vaccines.

- **It is necessary not only to organize vaccination services, but also generate and develop an environment of trust within all the healthcare services that are used by migrants.**
- **The complexity of specific needs of different migrant communities concerning immunization have to be addressed.**

Barriers – Malta:

The current situation in Malta is as follows: Irregular migrants generally arrive without any documents or vaccination records, unlike regular migrants who come to Malta to reside or work who would generally have the necessary documents. Irregular migrants are given 1 dose of Diphtheria, Tetanus, Polio and 1 dose of Measles, Mumps, Rubella on arrival. Regular migrants applying for a work permit usually have vaccination records available. The National Immunization Service in Floriana usually organizes follow-up immunizations for young children presenting with an incomplete vaccination schedule.

3.5.2. Key findings concerning achievement of vaccination (execution and completion)

Key findings for execution and completion do not differ to those presented for adherence and hesitancy.

3.6. Evaluation of interventions

3.6.1. Barriers and solutions per country

Barriers – Germany:

There is no available data concerning the vaccination of undocumented migrants. Moreover, data about vaccinations among migrants and refugees is officially not collected by any institution, and not requested by any organizational entity. Therefore, the information is not requested and tracked systematically.

Solutions – Germany:

Some institutions, such as refugee shelters and NGOs, collect data about their migrants' vaccination individually. **Moreover, the German Ministry of Interior does not request but encourages refugee home administrators to collect data about migrant/refugee vaccination rates, taking into consideration privacy protection laws. Administrators of refugee homes also exchange best practices related to migrant vaccination, by discussing these with public health administrations. There are some efforts made by public health administrations to assess best practices, advocate these to public policy institutions and disseminate them to migrant/refugee shelters region-wide.**

Barriers – Greece:

Health professionals mention three types of evaluations which need to be performed for any vaccination program:

1. An evaluation to inform donors
2. An evaluation to improve an initiative
3. An evaluation for the State

The first two types of evaluation seem to be consistently conducted by NGOs, using mainly quantitative research methods (questionnaires of beneficiaries' satisfaction, statistical analysis). Based on these results, evaluation reports are written and sent to donors, while corrective actions are put into place by NGOs to improve implementation.

Nevertheless, State services do not seem to receive such evaluation results from NGOs that implement relevant activities as they usually do not require such information. Health professionals characterize the evaluation of vaccination initiatives implemented by the State, as g "quite simplistic", "*they say 'we had x number of this vaccine, i.e. MMR and we made MMR vaccinations to x migrants'*".

Some health professionals report that there is a tendency to apply more quantitative than qualitative research methods to evaluate vaccination initiatives (both NGOs and the State). However, qualitative methods allow a deeper understanding of the experience and perceptions of migrants themselves concerning respective actions.

Solutions – Greece:

Health professionals emphasize the following:

- **There is a need for the state to evaluate vaccination strategies and activities.**
- **Development of a common registry for migrant vaccinations to be used as a common record by both government and civil society organizations which will help in the evaluation of migrant vaccinations.**
- **Use of both quantitative and qualitative methods in the evaluation of relevant initiatives.**
- **Dissemination of best practices and further adaptation by stakeholders**
- **Establishing regular meetings between the State and civil society actors involved in vaccinations in order to exchange knowledge, experience, disseminate and adapt best practice.**

Barriers – Italy:

A national vaccine registry was established in 2018, where all the information relevant to vaccinations from each region is collected. Three types of data are collected: (a) patient personal data, (b) completed vaccinations, and (c) missing vaccinations. The tax number of each person is used for data collection. **However, evaluating the vaccination coverage of NAMs is a problem, since new arrivals or recent arrivals do not have a tax number. Moreover, NAMs usually change regions of residency.**

Solutions – Italy:

Immunization data registration needs to be improved in order to collect proper immunization data and guarantee completion of vaccination series and avoidance of unnecessary re-vaccinations for migrants.

Barriers – Malta:

Both Public Health (Chest Unit) and Primary Care (the National Immunization Service in Floriana) have separate databases on migrants' immunization. However, information about child vaccination is sent from Public Health (Chest Unit) to the Immunization Service in Floriana, in order for the vaccination to be continued according to the Maltese National Immunization Schedule.

Solutions – Malta:

There should be more communication/ collaboration between the two systems (Public Health and Primary Health) concerning migrants' immunization. Moreover, participants involved in the delivery of migrant health care stress the need for developing one single database for migrant vaccination.

Barriers – Cyprus:

At a national level there are is data collection aiming at evaluating healthcare interventions. In reception centers of NAMs from Third countries data on immunization may be collected, but these are kept for internal use only. The same applies for any initiatives taking place in reception centers.

Solutions – Cyprus:

- **Need for the development of a national immunization database for NAMs.**
- **Needs´ assessment for NAMs in terms of vaccination so that cultural competent immunization initiatives be implemented in the field.**

Solutions – Spain:

Participants stressed the need for setting solutions to specific issues of NAMs' immunization after taking into consideration the testimonies of first line professionals. Monitoring of immunization activities and registers need to be in place.

3.6.2.Key findings concerning the evaluation of interventions

- Across all countries, there is lack of national, regional or local data bases to record vaccinations as a way of monitoring vaccination schedules and avoiding unnecessary vaccinations or missing booster vaccinations (for Greece, Malta and Poland the specific barrier was also mentioned in the section about reachability of MANs).
- The need for improving immunization data registration is emphasized by all participants.
- Moreover, there is a need for data collection, in order to evaluate relevant initiatives and promote best practices –advocate them to policy makers, and disseminate them to different actors.
- In all countries apart from Germany, different actors involved in the immunization of NAMs seem to keep their own records and data, however they use them internally. In Germany a collaboration seems to be in effect among different bodies in terms of monitoring vaccination status of NAMs, schedules as well as advocate and disseminate best practices.

3.7. COVID-19 pandemic and its consequences towards NAMs' immunization

COVID-19 vaccination was present in discussions with healthcare professionals in all countries. The reason is that during the fieldwork period, this particular vaccine was a "burning issue", with different opinions -in favor or against it- being discussed based on different kind of information. The COVID -19 vaccine, due to the pandemic and in contrast to other vaccines was part of the political agenda (a political priority), and indirectly "imposed" on the population (i.e. restrictions for unvaccinated people for example entering stores or restaurants).

Vaccinating migrants with the COVID-19 vaccine has been and remains a major issue in all consortium countries. Concerning NAMs from Third countries seeking asylum, vaccinations are usually organized inside the camps/ reception centers. However, there was a high degree of hesitancy as migrants mainly believed that "they would be guinea pigs". In other words, this particular vaccine has failed to gain their trust. At the same time, anti-vaccination arguments increased across the media, and also in social media which is a widely used source of information for NAMs (e.g. web-pages in their native language), influencing hesitancy to vaccination.

To manage the situation, there were State initiatives in collaboration with NGOs and relevant stakeholders aiming to gain a deeper understanding of barriers towards NMAs' immunization against COVID-19. For example, in Greece group discussions with community leaders were organized in order to find effective ways of NAMs from Third countries adherence to the specific vaccine. They concluded that for the specific population it is important: (a) to actually witness camp staff being vaccinated, as these people are a point of reference and trust for migrants, (b) to be informed about the "myths" around the vaccine, through info sessions and printed and / or electronic information material in their own languages.

Due to coordinated activities to promote the Covid-19 vaccine and also due to restriction measures imposed across the participating countries' populations (i.e. restrictions in entering shops etc.) the vaccination of migrants for COVID-19 has progressed more compared to other vaccinations. The provision of information concerning the "myths" that surround this vaccine, through information sessions, printed and/or electronic informative material in migrant languages (pamphlets or video) proved successful and was implemented by NGOs active in the field. NGO representatives, also stress the importance of raising the awareness of community leaders, who are a point of reference for the community members when it comes to promoting vaccinations. Moreover, initiatives, such as mobile vaccination units, and "vaccination busses" travelling along the cities, and stopping in areas where NAMs stay, work, socialize, were implemented successfully.

Technical difficulties for online vaccination booking were addressed, as well as difficulties concerning monitoring and certification of vaccinations. Regarding undocumented migrants, some States have introduced measures according to which these people can obtain (in a very simple way) a special insurance number exclusively for the specific vaccine. At the same time, these people are assured that this number is confidential and cannot be used by the State authorities, i.e. police. It is clear that this population "avoided navigating the health system" as it feared possible reporting to the authorities and deportation from the country. It seems that this measure has alleviated this fear among undocumented migrants. Also, NGOs who work with beneficiaries from this particular population, take an effort to inform people about this specific measure/ right by discussing and proving printed informative material in their native language that includes instructions on how to obtain this temporary insurance number.

Overall, COVID-19 vaccination highlighted the importance of placing vaccination at the heart of public health strategies, while offering some opportunities to improve the vaccination system, with particular attention to those most difficult to reach -NAMs.

4.Conclusions

A wealth of information was revealed through the qualitative analysis taking part in the consortium countries. Overall conclusions can be seen below:

1. Although the concepts of the ActoVAX4NAM conceptual framework were explored in depth during the Focus Groups and Interviews it was evident that often concepts overlap and clear boundaries concerning where one starts and ends are unclear. Often arguments, examples, barriers and enablers seemed to be the same for the different concepts.
2. Results showed very clearly that the vaccination of NAMs should not be an issue to be addressed by specific migrant services (for example health care). The vaccination of NAMs should be a priority across different sectors and services. Repeatedly respondents mentioned how schools and social services can contribute to promoting and encouraging vaccinations. Others emphasized the opportunity of promoting vaccinations in the workplace or even in nontraditional settings such as the police. Every service and setting having access to NAMs should utilize the opportunity of contact to promote and encourage vaccination uptake. Certainly attention should be given to not promote vaccinations as a compulsory, activity as this would create suspicion. Rather attempts should be made to increase vaccination awareness building a culture of vaccination acceptance.
3. Across the countries it has become very evident that NAM's vaccination can only benefit by establishing concrete collaborations and synergies between state level organizations and civil society/NGOs. The successful increase of vaccination uptake is a priority for both state and civil society organizations that can complement each other's work by facilitating exchange of best practice, knowhow and expertise. Limitations on both sides can be overcome through constructive collaboration and prioritization.
4. There is an urgent need to fill the gap that is found between what is happening on the ground with what is happening at policy level. There is a lack of appropriate policy that could support day to day operations on the field.
5. Throughout this qualitative research and through the voices of the participants it has become evident that there is an urgent need to create and adopt at country (and also EU level) Standard Operational Procedures (SOPs) for the vaccination of NAMs. This will allow all stakeholders involved to know what to do, how to do it and with whom it is important to collaborate. SOPs would outline which vaccines are important and ensure follow up and continuity.
6. Although repeatedly outlined by all those involved with providing health care to migrants/refugees during the last years the need for training on cultural sensitive and appropriate communication is as urgent as always. All those involved in health care including vaccinations need to be adequately trained on issues concerning cultural appropriateness and sensitivity.
7. Informing NAM's about vaccination, side effects, myths and facts is an obvious strong enabler that can influence vaccination uptake. Culturally adapting and translating information into migrant languages is a must.
8. The use of new technology is an important means of communication but it can also become a barrier. Alternatives need to be explored.
9. Community leaders can boost vaccination uptake. These strong social figures can support.

10. A common registry for recording vaccination is essential to limit unnecessary or repeated vaccinations and ensure that booster doses are performed. Covid – 19 lessons are important and effective practices implemented during the pandemic could be replicated.
11. The Covid – 19 pandemic is monopolizing the vaccination narrative and this is dangerous as it may create delays for the vaccination of other Vaccine Preventable Diseases.
12. Asylum seekers/recognized refugees seem to be more easily approached and located for the purposes of vaccination. This is not true for undocumented migrants but also other types of NAMs that the project is concerned with. For example, economic migrants, seasonal workers, people entering the EU from other parts of Europe seem to be more difficult to locate and assess in terms of vaccination. Measures for all types of NAMs need to be included in SOPs. Throughout the discussions participants mainly focused on recent (since 2015) migrant flows leaving other categories of NAMs out of the discussion. This seems to be the fact also at policy and EU level. This narrative possibly needs to be changed. Other types of NAMs need to be considered as well.
13. Addressing the vaccination of NAMs is a coordinated effort that needs the participation of different types of professionals. Participants for example in Cyprus emphasized the importance of health visitors and nurses and their contribution to vaccination efforts and campaigns. There is thus a need to upgrade the role of certain professionals and assess how they can contribute to the vaccination of NAMs.
14. Public health and health promotion professionals as well as health communication experts need to be involved in planning and implementing targeted and culturally appropriate vaccination campaigns for NAMs. Traditional stakeholders (health care, state level services and NGOs) should be open to collaborate with these professionals who can only improve vaccination efforts making them more evidence based.
15. It is essential to evaluate programs and share evaluation results across stakeholders at state level and at the level of civil society. This requires the training of program implementers (state and NGOs) on research methodology including qualitative research. It also means that new possibly nontraditional synergies need to be built with academia, research institutions, public health and health promotion.
16. Finally, dedicated funding is necessary to address the vaccination of NAMs