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Challenges in the Vaccination of Migrants in Norway: Healthcare Provider Perspectives

Anna Socha[1] and Jörn Klein[2§]

[1] McMaster University, Health Sciences Centre, Hamilton, Canada

[2] Department of Nursing and Health Sciences, University of South-Eastern Norway (USN)

Post office box 235, 3603 Kongsberg, Norway.

§ Corresponding author (email: jorn.klein@usn.no)

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Abstract

Objective: The aim of this qualitative research study was to explore the challenges faced by healthcare providers in delivering vaccinations to migrants and migrants in accessing vaccinations in Norway.

Methods: In June 2019, the authors interviewed 7 healthcare providers in South-Eastern and Western Norway who work in infectious diseases or migrant health, using a semi-structured interview guide.

Results: An inductive, exploratory analysis identified key themes that were reviewed and analyzed in light of existing literature. According to the informants, the Childhood Immunization Programme is effective in including migrant children within the national vaccination schedule. However, gaps in vaccination appear to exist with regards to adult migrants as well as working migrants. There is currently no structured approach to vaccinating adult migrants in Norway, including no guidelines from governing bodies on how to organize vaccination to adult migrants in municipalities. Further, there are many reasons why adult vaccination is not prioritized, such as tuberculosis screening and treatment taking precedence and the common assumption among healthcare providers that vaccinations are an issue of childhood.

Conclusion: The development of equitable immunization programs requires an understanding of the multifactorial barriers to immunization, such as those posed by policies, structures, and governance bodies. This qualitative research study demonstrated that challenges exist in the vaccination of migrants in Norway and that they are coherent with those experienced throughout the EU, namely gaps in vaccinating adult migrants, working migrants, and internal EU migrants. This research provides direction for future investigations and highlights the need for the inclusion of migrant status in the Norwegian Immunization Registry.

Strengths and limitations of this study

- *What is already known on this subject?*
  Cultural factors, knowledge barriers, insufficient access to healthcare, and vaccine hesitancy have been identified as common barriers to immunization faced by migrants.
- *What this study adds?*
  This study illuminates some of the challenges with delivering vaccinations to migrant populations in Norway from a healthcare provider perspective.
- *Limitations*
  Insufficient sample size for statistical measurement
- *Policy implications*
  Close gaps in policies and care for working migrants, especially for those from within the EU and short-stay migrants.

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Introduction

Migrant populations in the European Union (EU) suffer a disproportionate burden of infectious diseases.[1] Some subgroups of migrants may be particularly vulnerable to infectious diseases because of poor conditions in countries of origin where civil unrest or war have caused vaccination programs to be interrupted, or in transit to the host country where access to healthcare is limited and migrants may be exposed to malnutrition, overcrowding, and unsanitary conditions.[2,3] Additionally, migrants within the EU may be under-immunized for vaccine-preventable diseases (VPDs).[4] The European Centre for Disease Prevention and Control (ECDC) released targeted guidance for effective screening and vaccination of newly arrived migrants, which states that there is a clear benefit to enrolling migrants in vaccination programmes and ensuring catch-up vaccination.[2] Further, as part of the European Vaccine Action Plan 2015-2020, all EU countries committed to meeting regional vaccination coverage targets, eliminating endemic measles and rubella, controlling hepatitis B infection, and sustaining polio-free status in an effort towards creating a Region free of VPDs.[5] However, progress towards equitably extending the benefits of vaccination to all and meeting regional vaccination coverage targets has been slow, and there still exists significant gaps in understanding how to deliver effective vaccination services to diverse and mobile migrant populations in the EU.[3,6,7,8]

In recent years, immigration to Norway has greatly increased.[9.10] At the end of 2019, there were approximately 765 000 first generation migrants in Norway, which amounts to about 14.4 percent of the total population in Norway.[11,12] According to the Norwegian Institute of Public Health (NIPH), most new cases of tuberculosis and hepatitis B and half of new HIV cases occur among migrants in Norway.[13] Although research studies on migrant health and migrant experiences with health services in Norway has grown in recent years, the NIPH claims that research on migrant health is still lacking.[13] To date and to the best of the authors' knowledge, there has been no targeted research on the vaccination of migrant populations in Norway.

Cultural factors, knowledge barriers, insufficient access to healthcare, and vaccine hesitancy have been identified as common barriers to immunization faced by migrants.[14] In the Norwegian context, obstacles for migrant populations in accessing and navigating the primary healthcare system have been studied and are in parallel with challenges documented in the literature, such as conflicting ideas about the role of the doctor, language barriers, and cultural differences.[15] However, systems-, provider-, and patient-related challenges with delivering vaccination programs to migrants in Norway have not been studied. The development of equitable immunization programs requires an understanding of the multifactorial barriers to immunization, such as those posed by policies, structures, and governance bodies and faced by both healthcare providers (HCPs) and migrants.[7] As such, this qualitative research study aims to elucidate the challenges faced by HCPs in delivering vaccinations to migrants and migrants in accessing vaccinations in Norway.

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Methods

Throughout June 2019, interviews with seven HCPs with a specialization in infectious diseases or migrant health were conducted in predominantly South-Eastern Norway, with one interview taking place in Western Norway. Purposive sampling was used to select interview participants. Specifically, HCPs working in the field of infectious diseases or migrant health were contacted via email and asked about their willingness to be interviewed for the study. The interviews were approximately one hour in length and conducted in a semi-structured format using an interview guide. The interviews included discussions on the process of how migrants obtained vaccinations in their respective municipalities and challenges faced by migrants and HCPs in this process. Interviews were audio-taped and transcribed verbatim, which was followed by an inductive, exploratory analysis that identified key themes that emerged from the perspectives of the HCPs.

At the beginning of interviews, key terms were defined and clarified for interview participants. The following definitions were applied:

- Immigrant: a person who makes a conscious choice to leave their country to seek a better life elsewhere.
- Refugee: a person who has been forced to leave their country in order to escape war, persecution, or natural disaster, and is seeking protection in another country.
- Asylum seeker: A person who awaits a decision on the application for refugee status.
- Working migrant: A type of legal immigrant that is entering Norway to pursue work.

In this research study, the term “migrant” refers to anyone who has moved from their home country to another, which encapsulates all the aforementioned subtypes.

The definition for VPDs was also clarified at the beginning of interviews; specifically, the ECDC definition was used.[2]

Identifiable or personal data were not audio-recorded nor transcribed to ensure anonymity of participants and therefore ethics approval was not required. All participants were fully informed about the study and verbal consent was obtained.

Patient and Public Involvement
No patient involved

Results

Childhood Immunization Programme

All HCPs agreed that the Childhood Immunization Programme (CIP) in Norway functions well and captures all children, including migrant children, within the national vaccination schedule. Participants described how the CIP in Norway is well established and enforced by NIPH and the Norwegian law. The NIPH provides national recommendations for which vaccines to include in

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the program, where to deliver vaccinations, and who is responsible for providing the vaccinations.

Vaccine Coverage & Uptake Among Migrants

All participants acknowledged that Norway has been fortunate to have high vaccine coverage to date. All HCPs were in agreeance that non-Western migrants, especially refugees, are very accepting of vaccination and should not be considered a public health concern. Although it was stated to be very rare, a few HCPs mentioned that those that refuse vaccines are more likely to be Norwegians or migrants from Europe. The responses of the participants demonstrated that vaccine hesitancy does not appear to be a large problem at present.

Lack of Data on Migrant Vaccination Coverage

Most HCPs expressed that data on the vaccine coverage of migrants is needed to know whether there are gaps in vaccine coverage among migrants. Currently, the Norwegian Immunization Registry, SYSVAK, does not stratify by migrant status. As such, HCPs were hesitant when discussing challenges faced by migrants in accessing vaccinations.

Organization and Coordination of Vaccination for Adult Migrants

The Norwegian Directorate of Health provides national guidelines on vaccination for migrants, which includes what vaccines should be provided and to whom. However, municipalities are responsible for organizing *how* to deliver vaccination to adult migrant populations, including where and by whom. Many HCPs felt that the guidelines for vaccinating adult migrants were sufficient and that they experienced no major challenges; however, a few respondents experienced a number of challenges in their work. A few interviewees felt that the system for vaccinating adult migrants within municipalities was “ad hoc”, involved “detective work”, and not prioritized. Without clear protocol or guidelines on how to deliver vaccines to adult migrants within municipalities and with no clear division of responsibilities among HCPs, a few respondents suggested that vaccination may not always be offered to adult migrants nor a thorough vaccine history completed. However, some HCPs did have organized systems for ensuring adult migrants were vaccinated in their municipalities. Regardless of their different experiences, many respondents stated that migrants who are lacking vaccinations are likely to be identified at some point when accessing healthcare services, but that it may be delayed and not done in the most efficient and effective manner. These responses suggested that although municipalities are responsible for organizing a system for vaccinating adult migrants, the roles and responsibilities of HCPs may not be clearly outlined nor vaccination of adults prioritized within their municipalities.

Priorities in Infectious Disease Control

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All participants described that HCPs balance numerous tasks of which the vaccination of adults within municipalities is not a large priority. A few respondents explained that it is likely that Norwegian HCPs often assume that adults are vaccinated since most vaccinations are scheduled for childhood. Participants mentioned that HCPs that do not work directly in migrant health may not remember to offer vaccinations to adult migrants attending their clinics.

Further, a few respondents highlighted that screening, vaccination, and treatment for tuberculosis (TB) is prioritized over adult vaccination. TB screening and follow-up is mandated by law wherein HCPs in refugee reception centres and in municipalities must follow specific protocol for documenting, screening, and treating TB. On the contrary, clear and enforced protocol for documenting and providing adult vaccinations does not exist; respondents described how this can lead vaccinations to not be offered to some adult migrants nor rigorously documented in refugee reception centres and municipalities.

Working Migrants Vaccination Challenges

There are no requirements to obtain vaccinations for working migrants; however, if they come from a country with a high prevalence of TB and intend on staying more than 3 months, then they must undergo screening for TB. Some participants described how this may be a potential gap in the system wherein many working migrants are not offered vaccination. It was noted by many HCPs interviewed that there are some working migrants that are permitted to continuously re-apply for short work permits and can therefore live in Norway for long periods of time without having to complete a health examination, including an assessment of vaccine history.
Many HCPs described that working migrants are being identified when contacting healthcare services and then being referred to full health screening. In other cases, some employers may require working migrants to complete a health examination. However, even if offered vaccinations, participants claimed that it is likely that working migrants would refuse since vaccinations are not free of charge for working immigrants and can be quite costly.

Financial Challenges for Migrants

All vaccines are free for infants, children, and adolescents; however, there may be fees for adult vaccinations. Top priority vaccinations, such as MMR and the polio vaccine, are free for refugees and asylum seekers and are provided upon arrival. Hepatitis B and the BCG vaccine are also free for some migrants, depending on which country they come from. However, aside from these vaccinations, vaccines are not free of charge. It was mentioned by a HCP that additional vaccinations may not be accepted by refugees since they only receive some financial support from the state and vaccines are expensive. As mentioned above, working migrants need to pay for vaccines and that would likely be a burden given the high price for vaccines.

Education for Healthcare Providers on Migrant Health

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It was stressed by some of the HCPs that there should be more education for HCPs on issues related to migrant health, such as how to use a translator effectively, cultural humility, and how to discuss challenging topics, such as psychological trauma. Currently, there are no mandatory courses on migrant health within HCP education for both nurses and doctors.

Translators & Navigating Language Barriers

Participant responses were divided on the use of translators in their clinical services. Some respondents described no challenges with obtaining and using a translator, stating that they always use one when needed and believe that their colleagues did the same. Alternatively, some HCPs had the impression that a number of HCPs do not use translators as frequently as they should. One participant believed that this was largely due to the lack of HCP knowledge around how to arrange a translator as well as how to navigate using a translator. A few participants also expressed that arranging a translator can be a "complicated" process - it takes more time and would be easier to just not offer the service or even not see migrant patients to avoid this additional task. One participant stated many HCPs see using a translator as a burden, as opposed to a necessity. On the migrant end, a few HCPs felt that patients are not aware of their right to having a translator and that they are not charged for this service. One HCP felt that HCPs are not educating their patients on their right to having a translator.

Discussion

This study illuminates some of the challenges with delivering vaccinations to migrant populations in Norway from a healthcare provider perspective.

The inclusion of migrant children and adolescents in national vaccination schedules is a key feature of the ECDC guidelines (Hargreaves, 2018).[2,16,17] Children are considered to be at greatest risk of contracting VPDs and represent approximately 25% of the total migrant population in the EU Region.[18] This research study has demonstrated that Norway's national immunization program for children is comprehensive and inclusive of migrant infants, children, and adolescents in Norway.

HCPs overwhelmingly agreed that it was difficult to identify inequities in immunization given the lack of data on immunization coverage in migrants. In fact, there is a lack of systematic data collection throughout European countries on immunization coverage and determinants of non-immunization among migrants.[1,19] To increase equity in immunization provision, Boyce et al. (2019) suggest that countries should disaggregate immunization uptake data by key determinants of inequalities including ethnicity and migration status.[7] Connecting data on the social determinants of health with vaccination coverage has immense potential for improving services and increasing vaccination coverage as has been demonstrated within a number of countries in the EU.[7,20] Our research highlights the limitation of the current national

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3 immunization registry in Norway and the value of integrating migrant status in immunization
4 uptake data to direct future research and initiatives on migrant health.
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7 Furthermore, it is evident that gaps exist in the vaccination for adult migrants. As described in
8 the results, some municipalities have not designed a clear and coordinated system for ensuring
9 that adult migrants are vaccinated. This can lead to a lack of clarity around the division of
10 responsibilities among HCPs and vaccinations not being offered to adult migrants. This is
11 coherent with findings from the ECDC that found a lack of clarity among HCPs regarding
12 approaches to catch-up vaccinations in adult migrants.[17] A quote by an Estionian HCP captures
13 the issue perfectly: “The completeness of adult migrant vaccination depends on the health care
14 provider - if they consider vaccination as a priority”.[17] This sentiment was echoed among
15 Norwegian HCPs as many HCPs felt that vaccination was not always prioritized and offered to
16 adult migrants. It is our suggestion to conduct further research on how to ensure that adult
17 migrants are provided vaccinations. Further, developing guidelines on where and by whom
18 should vaccinations be delivered for adult migrants may be worth consideration.
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22 Our research highlights the gap in providing vaccinations to working migrants in Norway.
23 Europe-wide research completed by the ECDC has highlighted important yet frequently
24 neglected dimensions of migration in the EU such as labour migration and internal EU
25 migration, which have been linked to measles outbreaks.[17] In the ECDC dataset, internal EU
26 migrants contributed relatively high numbers of hepatitis B and hepatitis C, demonstrating the
27 importance of including internal and labour migrants within vaccination.[21] In this research,
28 numerous HCPs expressed that there were gaps in policies and care for working migrants,
29 especially for those from within the EU and short-stay migrants. Further investigations and
30 initiatives for screening and vaccinating working migrants should be considered by Norwegian
31 decision makers.
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36 Our research demonstrates that vaccine hesitancy is likely uncommon among non-Western
37 migrants in Norway, namely refugees and asylum seekers, but it may be a larger concern
38 among migrants from within the EU. Many refugees and migrants arriving in Europe come from
39 Middle Eastern countries where vaccines are widely accepted and coverage has traditionally
40 been high.[22] This finding is important considering previous cases where infectious disease
41 outbreaks were blamed on refugees and asylum seekers, such as during the rise of measles
42 throughout the EU in 2018.[23] There is no evidence that justifies viewing refugees or asylum
43 seekers as a public health threat and this fear is irrational and harmful.[24]
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47 Challenges appear to exist with some HCPs’ motivation to use translators and their knowledge
48 of how to arrange and effectively use translators in their clinical services. Given that translators
49 are important for effective implementation of national vaccine policies[18], potential barriers to
50 using translators described should be further explored to ensure providing appropriate and
51 accessible healthcare.
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55 ***Limitations***
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Due to time constraints, this study did not interview migrants and therefore, the study focuses on the challenges faced by HCPs as opposed to challenges faced by migrants. However, the voices of migrants are key in understanding their challenges and should be prioritized in future studies. There were a limited number of interviewees given that data collection was conducted during the Norwegian summer months where many are on holidays. This limits the ability to make generalizations. Nevertheless, the authors believe the research is representative, but not entirely comprehensive, of the challenges in vaccinating migrants in Norway as consistent themes emerged across the interviews. Moreover, the interviews were in depth providing quality content, and interviewees were from all different municipalities and working in different types of clinics throughout Norway, providing a wide range of perspectives. Future research should extend deeper into the topics described and gather information from a larger sample. Interviews were conducted in English, but all participants spoke English well and no major language barriers were experienced during the interviews. The interview transcripts were coded by one researcher increasing the potential for bias into the research study; however, interviews were audio recorded, transcribed verbatim, and systematically coded to main integrity and quality of the data. Lastly, there are types of migrants that were not discussed in this research study, such as family reunification immigrants, asylum seekers, and undocumented or "paperless" migrants, whose experiences with vaccination require further research.

Conclusion

This research provides new information on both the strengths and weaknesses of the practice of vaccinating migrants in Norway. The results are similar to challenges experienced throughout the EU, such as gaps in vaccinating adult migrants, working migrants, and internal EU migrants. Given the rising level of migration into Europe, the vaccination of migrant populations has become a key priority in Europe.[2] Findings from this study can be used to direct further research throughout Norway and countries with similar contexts. During this time of growing anti-immigrant sentiments and political agendas, there is an urgent need for the public health community to ensure that the needs of migrants are met and that HCPs are providing equitable, accessible, and effective services.

Statements

Contributorship statement

Anna Socha collected and analyzed the data and drafted the manuscript. Jörn Klein developed the idea, contributed in the questionnaire and helped drafting the manuscriot.

Competing interests

none

Funding

none

Data sharing statement

Anonymized data are available upon reasonable request

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Challenges in the Vaccination of Migrants in Norway: Healthcare Provider Perspectives

Anna Socha[1] and Joern Klein[2§]

[1] McMaster University, Global Health, 1280 Main St. West MDCL 3500, Hamilton L8S 4K1, Canada

[2] Department of Nursing and Health Sciences, University of South-Eastern Norway (USN) Post office box 235, 3603 Kongsberg, Norway.

§ Corresponding author (email: jorn.klein@usn.no, phone: +47-31008899)

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Abstract

Background: Migrant populations in the European Union suffer a disproportionate burden of infectious diseases and may be particularly vulnerable due to poor conditions in countries of origin or throughout transit to the host country. Given the rising level of migration into Europe, the vaccination of migrant populations has become a key priority, with European countries committing to equitably extending the benefits of vaccination to all. However, in Norway, little is known about the vaccination of migrant populations.

Objective: The aim of this qualitative research study was to explore the process of vaccinating migrant populations in Norway and elucidate any challenges as perceived by healthcare providers. This involved exploring the challenges faced by healthcare providers in delivering vaccinations to migrants as well as potential barriers faced by migrants in accessing vaccinations in Norway, from the perspectives of healthcare providers.

Methods: In June 2019, the authors conducted semi-structured interviews with 7 healthcare providers who are involved in vaccinating migrants in South-Eastern and Western Norway. This included health care providers working in general practice, public health and infectious disease clinics, migrant health clinics, and public health institutes.

Results: An inductive, exploratory analysis identified key themes that were reviewed and analyzed in light of existing literature. According to the informants, the Childhood Immunization Programme is effective in including migrant children within the national vaccination schedule. However, gaps in vaccination appear to exist with regards to adult migrants as well as working migrants. There is currently no consistent or structured approach to vaccinating adult migrants in Norway, including no guidelines from governing bodies on how to organize vaccination to adult migrants in municipalities. Further, reasons why adult vaccination is not prioritized were provided, such as tuberculosis screening and treatment taking precedence and the common assumption among healthcare providers that vaccinations are dealt with in childhood.

Conclusion: The development of equitable immunization programs requires an understanding of the multifactorial barriers to immunization, such as those posed by policies, structures, and governance bodies, or lack thereof. It also entails understanding the administration of such policies and the perspectives of those who are responsible for the delivery of vaccination, namely

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healthcare providers. This qualitative research study demonstrated that challenges exist in the vaccination of migrants in Norway and that they are coherent with those experienced throughout the EU, principally the presence of gaps in vaccinating adult migrants, working migrants, and internal EU migrants. This research provides direction for future investigations and highlights the need for the inclusion of migrant status in the Norwegian Immunization Registry.

Strengths and limitations of this study

- This study illuminates some of the challenges with delivering vaccinations to migrant populations in Norway from a healthcare provider perspective.
- Challenges exist in the vaccination of migrants in Norway.
- There is currently no consistent or structured approach to vaccinating adult migrants in Norway.
- The voices of migrants are key in understanding their challenges and should be prioritized in future studies.

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Introduction

Migrant populations in the European Union (EU) suffer a disproportionate burden of infectious diseases.[1] Some subgroups of migrants may be particularly vulnerable to infectious diseases because of poor conditions in countries of origin where civil unrest or war have caused vaccination programs to be interrupted, or in transit to the host country where access to healthcare is limited and migrants may be exposed to malnutrition, overcrowding, and unsanitary conditions.[2,3] Additionally, migrants within the EU may be under-immunized for vaccine-preventable diseases (VPDs).[4] The European Centre for Disease Prevention and Control (ECDC) released targeted guidance for effective screening and vaccination of newly arrived migrants, which states that there is a clear benefit to enrolling migrants in vaccination programmes and ensuring catch-up vaccination.[2] Further, as part of the European Vaccine Action Plan 2015-2020, all EU countries committed to meeting regional vaccination coverage targets, eliminating endemic measles and rubella, controlling hepatitis B infection, and sustaining polio-free status in an effort towards creating a Region free of VPDs.[5] However, progress towards equitably extending the benefits of vaccination to all and meeting regional vaccination coverage targets has been slow, and there still exists significant gaps in understanding how to deliver effective vaccination services to diverse and mobile migrant populations in the EU.[3,6,7,8]

In recent years, immigration to Norway has greatly increased.[9.10] At the end of 2019, there were approximately 765 000 first generation migrants in Norway, which amounts to about 14.4 percent of the total population in Norway.[11,12] According to the Norwegian Institute of Public Health (NIPH), most new cases of tuberculosis and hepatitis B and half of new HIV cases occur among migrants in Norway.[13] Although research studies on migrant health and migrant experiences with health services in Norway has grown in recent years, the NIPH claims that research on migrant health is still lacking.[13] To date and to the best of the authors' knowledge, there has been no targeted research on the vaccination of migrant populations in Norway. In general, vaccination rates among the Norwegian population are high[14], but not all migrants are included in such figures, which may have led to the negligence of migrant-specific challenges.

Cultural factors, knowledge barriers, insufficient access to healthcare, and vaccine hesitancy have been identified as common barriers to immunization faced by migrants.[15] In the Norwegian context, obstacles for migrant populations in accessing and navigating the primary healthcare

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system have been studied and are in parallel with challenges documented in the literature, such as conflicting ideas about the role of the doctor, language barriers, and cultural differences.[16] However, systems-, provider-, and patient-related challenges with delivering vaccination programs to migrants in Norway have not been studied. The development of equitable immunization programs requires an understanding of the multifactorial barriers to immunization, such as those posed by policies, structures, and governance bodies and faced by both healthcare providers (HCPs) and migrants.[7] As such, this qualitative research study aims to elucidate the challenges faced by HCPs in delivering vaccinations to migrants and migrants in accessing vaccinations in Norway.

Methods

This qualitative, phenomenological study was conducted to explore the experiences of 7 healthcare providers involved in the vaccination of migrants in Norway. The objective was to develop an understanding of the participants' perceptions of vaccination of migrants in Norway, including challenges faced by HCPs in delivering vaccinations and potentials barriers faced by migrants in accessing vaccinations.

Purposive sampling was used to select interview participants. Throughout June 2019, the researchers invited 23 HCPs working at different health stations ("helsestasjon" in Norwegian) or clinics, to be interviewed. In Norway, vaccination is primarily provided in these so called "health stations". Health stations are under municipal jurisdiction and are responsible for preventative health services, including national vaccination programs. However, the organization of the municipal health system varies based on community needs wherein some municipalities have health stations specialized for certain populations or issues, such migrants and Norwegians who return to the country from travel. Therefore, the researchers reached out to clinics and a policy and research institute in the region that were involved in vaccination work, which included general practitioner clinics, public health/infectious disease/travel clinics, a public health institute, and migrant health stations. HCPs were contacted via email and asked about their willingness to be interviewed for the study. All HCPs who agreed to participate were interviewed. As such, seven HCPs working at different health stations were interviewed; this included nurses and physicians from public health/infectious diseases/travel clinics, a public health and infectious disease institute, a migrant health clinic, and a general practitioner clinic.

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All interviews were conducted in South-Eastern Norway, except with one interview taking place in Western Norway. Interviews took place within the health station clinics. The interviews were approximately one hour in length and conducted in a semi-structured format using an interview guide (supplementary file). The interviews included discussions on the process of how migrants obtained vaccinations in their respective municipalities and challenges faced by migrants and HCPs in this process. Interviews were audio-taped and transcribed verbatim, which was followed by an inductive, exploratory analysis that identified key themes from the perspectives of the HCPs. Data was transcribed and coded by hand. Themes were compared against the existing literature of vaccination in Norway and of vaccination challenges in Europe to ensure reliability and trustworthiness of the data.

At the beginning of interviews, key terms were defined and clarified for interview participants. The following definitions were applied:

- Immigrant: a person who makes a conscious choice to leave their country to seek a better life elsewhere.
- Refugee: a person who has been forced to leave their country in order to escape war, persecution, or natural disaster, and is seeking protection in another country.
- Asylum seeker: A person who awaits a decision on the application for refugee status.
- Working migrant: A type of legal immigrant that is entering Norway to pursue work.

In this research study, the term "migrant" refers to anyone who has moved from their home country to another, which encapsulates all the aforementioned subtypes.

The definition for VPDs was also clarified at the beginning of interviews; specifically, the ECDC definition was used.[2]

Identifiable or personal data were not audio-recorded nor transcribed to ensure anonymity of participants and therefore ethics approval was not required. All participants were fully informed about the study and verbal consent was obtained.

Author Reflexivity Statement:

The lead author of this work is a White, middle-class, native English-speaking female of European Canadian ancestry. Her limitations in this work is that she is not a migrant or Norwegian. She is aware that she views the challenges of migrants and those of Norwegian healthcare providers

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from an inherently outsider's perspective and that by not being Norwegian, she does not have an in-depth, first-hand knowledge of the Norwegian healthcare system. However, she has worked with migrant populations and has dedicated her studies and work to causes of social justice and health equity. She views health as a human right and migration in a positive light, owing to her personal experiences as a daughter of immigrant parents and as a global health researcher undertaking critical discussions in the area of migration and health. Furthermore, throughout this research project, she had the support of a Norwegian and immigrant supervisor to support her in understanding the local Norwegian context and healthcare system.

Patient and public involvement:

No patient involved.

Results

Childhood Immunization Programme

All HCPs agreed that the Childhood Immunization Programme (CIP) in Norway functions well and captures all children, including migrant children, within the national vaccination schedule. Participants described how the CIP in Norway is well established and enforced by NIPH and the Norwegian law. The NIPH provides national recommendations for which vaccines to include in the program, where to deliver vaccinations, and who is responsible for providing the vaccinations.

Vaccine Coverage & Uptake Among Migrants

All participants acknowledged that Norway has been fortunate to have high vaccine coverage to date. All HCPs were in agreeance that non-Western migrants, especially refugees, are very accepting of vaccination and should not be considered a public health concern. Although it was stated to be very rare, a few HCPs mentioned that those that refuse vaccines are more likely to be Norwegians or migrants from Europe. The responses of the participants demonstrated that vaccine hesitancy does not appear to be a large problem at present.

Lack of Data on Migrant Vaccination Coverage

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Most HCPs expressed that data on the vaccine coverage of migrants is needed to know whether there are gaps in vaccine coverage among migrants. Currently, the Norwegian Immunization Registry, SYSVAK, does not stratify by migrant status. As such, HCPs were hesitant when discussing challenges faced by migrants in accessing vaccinations as perceived by health workers.

Organization and Coordination of Vaccination for Adult Migrants

The Norwegian Directorate of Health provides national guidelines on vaccination for migrants, which includes what vaccines should be provided and to whom. However, municipalities are responsible for organizing *how* to deliver vaccination to adult migrant populations, including where and by whom. Many HCPs felt that the guidelines for vaccinating adult migrants were sufficient and that they experienced no major challenges; however, a couple respondents experienced a number of challenges in their work. A couple interviewees felt that the system for vaccinating adult migrants within municipalities was “ad hoc”, involved “detective work”, and was not prioritized. Without clear a protocol or guidelines on how to deliver vaccines to adult migrants within municipalities and with no clear division of responsibilities among HCPs, a few respondents suggested that vaccination may not always be offered to adult migrants nor a thorough vaccine history completed. However, some HCPs did have organized systems for ensuring adult migrants were vaccinated in their municipalities. Regardless of their different experiences, many respondents stated that migrants who are lacking vaccinations are likely to be identified at some point when accessing healthcare services, but that it may be delayed and not done in the most efficient and effective manner. These responses suggested that although municipalities are responsible for organizing a system for vaccinating adult migrants, the roles and responsibilities of HCPs may not be clearly outlined nor vaccination of adults prioritized within their municipalities.

Priorities in Infectious Disease Control

All participants described that HCPs balance numerous tasks of which the vaccination of adults within municipalities is not a large priority. A few respondents explained that it is likely that Norwegian HCPs often assume that adults are vaccinated since most vaccinations are scheduled for childhood. Participants mentioned that HCPs that do not work directly in migrant health, such as general practitioners, may not remember to offer vaccinations to adult migrants attending their clinics.

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Further, a few respondents highlighted that screening, vaccination, and treatment for tuberculosis (TB) is prioritized over adult vaccination. TB screening and follow-up is mandated by law wherein HCPs in refugee reception centres and in municipalities must follow specific protocol for documenting, screening, and treating TB. On the contrary, clear and enforced protocol for documenting and providing adult vaccinations does not exist; respondents described how this can lead vaccinations to not be offered to some adult migrants nor rigorously documented in refugee reception centres and municipalities.

A gap in hepatitis screening of pregnant women was not mentioned by informants.

Working Migrants Vaccination Challenges

There are no requirements to obtain vaccinations for working migrants; however, if they come from a country with a high prevalence of TB and intend on staying more than 3 months, then they must undergo screening for TB. Some participants described how this may be a potential gap in the system wherein many working migrants are not offered vaccination. It was noted by many HCPs interviewed that there are some working migrants that are permitted to continuously re-apply for short work permits and can therefore live in Norway for long periods of time without having to complete a health examination, including an assessment of vaccine history.
Many HCPs described that working migrants are being identified when contacting healthcare services and then being referred to full health screening. In other cases, some employers may require working migrants to complete a health examination. However, even if offered vaccinations, participants claimed that it is likely that working migrants would refuse since vaccinations are not free of charge for working immigrants and can be quite costly.

Financial Challenges for Migrants

All vaccines are free for infants, children, and adolescents; however, there may be fees for adult vaccinations. Top priority vaccinations, such as MMR and the polio vaccine, are free for refugees and asylum seekers and are provided upon arrival. Hepatitis B and the BCG vaccine are also free for some migrants, depending on which country they come from. However, aside from these vaccinations, vaccines are not free of charge. It was mentioned by a HCP that additional vaccinations may not be accepted by refugees since they only receive some financial support

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from the state and vaccines are expensive. As mentioned above, working migrants need to pay for vaccines and that would likely be a burden given the high price for vaccines.

Education for Healthcare Providers on Migrant Health

It was stressed by some of the HCPs that there should be more education for HCPs on issues related to migrant health, such as how to use a translator effectively, cultural humility, and how to discuss challenging topics, such as psychological trauma. Currently, there are no mandatory courses on migrant health within HCP education for both nurses and doctors.

Translators & Navigating Language Barriers

Participant responses were divided on the use of translators in their clinical services. Some respondents described no challenges with obtaining and using a translator, stating that they always use one when needed and believe that their colleagues did the same. Alternatively, some HCPs had the impression that a number of HCPs do not use translators as frequently as they should. One participant believed that this was largely due to the lack of HCP knowledge around how to arrange a translator as well as how to navigate using a translator. A few participants also expressed that arranging a translator can be a "complicated" process - it takes more time and would be easier to just not offer the service or even not see migrant patients to avoid this additional task. One participant stated many HCPs see using a translator as a burden, as opposed to a necessity. A few HCPs felt that patients are not aware of their right to having a translator and that they are not charged for this service. One HCP felt that HCPs are not educating their patients on their right to having a translator.

Discussion

This study illuminates some of the challenges with delivering vaccinations to migrant populations in Norway from a healthcare provider perspective.

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3 300 The inclusion of migrant children and adolescents in national vaccination schedules is a key
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5 301 feature of the ECDC guidelines (Hargreaves, 2018).[2,17,18] Children are considered to be at
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7 302 greatest risk of contracting VPDs and represent approximately 25% of the total migrant population
8 303 in the EU Region.[19] This research study has demonstrated that Norway's national immunization
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10 304 program for children is comprehensive and inclusive of migrant infants, children, and adolescents
11 305 in Norway.
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14 307 HCPs overwhelmingly agreed that it was difficult to identify inequities in immunization given the
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16 308 lack of data on immunization coverage in migrants. In fact, there is a lack of systematic data
17 309 collection throughout European countries on immunization coverage and determinants of non-
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19 310 immunization among migrants.[1,20] To increase equity in immunization provision, Boyce et al.
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21 311 (2019) suggest that countries should disaggregate immunization uptake data by key determinants
22 312 of inequalities including ethnicity and migration status.[7] Connecting data on the social
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24 313 determinants of health with vaccination coverage has immense potential for improving services
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26 314 and increasing vaccination coverage as has been demonstrated within a number of countries in
27 315 the EU.[7,21] Our research highlights the limitation of the current national immunization registry in
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29 316 Norway and the value of integrating migrant status in immunization uptake data to direct future
30 317 research and initiatives on migrant health.
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33 319 Furthermore, it is evident that gaps exist in the vaccination for adult migrants. As described in the
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35 320 results, some municipalities have not designed a clear and coordinated system for ensuring that
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37 321 adult migrants are vaccinated. This can lead to a lack of clarity around the division of
38 322 responsibilities among HCPs and vaccinations not being offered to adult migrants. This is
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40 323 coherent with findings from the ECDC that found a lack of clarity among HCPs regarding
41 324 approaches to catch-up vaccinations in adult migrants.[17] A quote by an Estionian HCP captures
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43 325 the issue perfectly: "The completeness of adult migrant vaccination depends on the health care
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45 326 provider - if they consider vaccination as a priority".[17] This sentiment was echoed among
46 327 Norwegian HCPs as many HCPs felt that vaccination was not always prioritized and offered to
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48 328 adult migrants. It is our suggestion to conduct further research on how to ensure that adult
49 329 migrants are provided vaccinations. Further, developing guidelines on where and by whom should
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51 330 vaccinations be delivered for adult migrants may be worth consideration.
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54 332 Our research highlights the gap in providing vaccinations to working migrants in Norway. Europe-
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56 333 wide research completed by the ECDC has highlighted important yet frequently neglected
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dimensions of migration in the EU such as labour migration and internal EU migration, which have been linked to measles outbreaks.[18] In the ECDC dataset, internal EU migrants contributed relatively high numbers of hepatitis B and hepatitis C, demonstrating the importance of including internal and labour migrants within vaccination.[22] In this research, numerous HCPs expressed that there were gaps in policies and care for working migrants, especially for those from within the EU and short-stay migrants. Further investigations and initiatives for screening and vaccinating working migrants should be considered by Norwegian decision makers.

Our research demonstrates that vaccine hesitancy is likely uncommon among non-Western migrants in Norway, namely refugees and asylum seekers, but it may be a larger concern among migrants from within the EU. Many refugees and migrants arriving in Europe come from Middle Eastern countries where vaccines are widely accepted and coverage has traditionally been high.[23] This finding is important considering previous cases where infectious disease outbreaks were blamed on refugees and asylum seekers, such as during the rise of measles throughout the EU in 2018.[24] There is no evidence that justifies viewing refugees or asylum seekers as a public health threat and this fear is irrational and harmful.[25]

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. Given that translators are important for effective implementation of national vaccine policies[19], potential barriers to using translators described should be further explored to ensure providing appropriate and accessible healthcare.

None of the informants mentioned gaps in hepatitis screening of pregnant women, despite it being a well-known migrant health issue. We believe that this may be due to a lack of awareness of the issue by HCPs. Until 2018, Norway was among the few countries in Europe that did not test all pregnant women for chronic hepatitis B infection.

Limitations

Due to time constraints, this study did not interview migrants and therefore, the study focuses on the challenges faced by HCPs as opposed to challenges faced by migrants. However, the voices of migrants are key in understanding their challenges and should be prioritized in future studies. There were a limited number of interviewees given that data collection was conducted during the

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Norwegian summer months where many are on holiday. This limits the ability to make generalizations. Nevertheless, the authors believe the research is representative, but not entirely comprehensive, of the challenges in vaccinating migrants in Norway as consistent themes emerged across the interviews. Moreover, the interviews were in depth providing quality content, and interviewees were from all different municipalities and working in different types of clinics throughout Norway, providing a wide range of perspectives. Future research should extend deeper into the topics described and gather information from a larger sample.

Interviews were conducted in English, but all participants spoke English well and no major language barriers were experienced during the interviews. The interview transcripts were coded by one researcher increasing the potential for bias into the research study; however, interviews were audio recorded, transcribed verbatim, and systematically coded to maintain integrity and quality of the data. Lastly, there are types of migrants that were not discussed in this research study, such as family reunification immigrants, asylum seekers, and undocumented or “paperless” migrants, whose experiences with vaccination require further research.

Conclusion

This research provides new information on both the strengths and weaknesses of the practice of vaccinating migrants in Norway. The results are similar to challenges experienced throughout the EU, such as gaps in vaccinating adult migrants, working migrants, and internal EU migrants.

Given the rising level of migration into Europe, the vaccination of migrant populations has become a key priority in Europe.[2] Findings from this study can be used to direct further research throughout Norway and countries with similar contexts. During this time of growing anti-immigrant sentiments and political agendas, there is an urgent need for the public health community to ensure that the needs of migrants are met and that HCPs are providing equitable, accessible, and effective services.

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What is already known on this subject?

Migrant populations in the European Union (EU) suffer a disproportionate burden of infectious diseases. Cultural factors, knowledge barriers, insufficient access to healthcare, and vaccine hesitancy have been identified as common barriers to immunization faced by migrants.

What this study adds?

This study illuminates some of the challenges with delivering vaccinations to migrant populations in Norway from a healthcare provider perspective.

Policy implications

Developing guidelines on where and by whom vaccinations should be delivered for adult migrants may be worth consideration given the growing number of migrants in Norway and the challenges experienced by some healthcare providers in this study. This policy implication is in line with evidence from the ECDC demonstrating the importance of closing gaps in policies and care for adult working migrants and internal EU migrants.

Contributorship statement: AS was responsible for the interviews, data collection, did the initial analysis, and drafted the manuscript. AS contributed to the design of the study and analysed the data.

JK designed the study, participated in the implementation, data analysis, and critically reviewed the manuscript. JK also served as guarantor.

All authors had full access to the data and take responsibility for the integrity and accuracy of the analyses.

Conflicts of interest: None to declare

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Data sharing statement: Anonymized coded interview data are available, but only upon reasonable request.

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Interview Guide

Introduction

Thank you for agreeing to meet and participate in our research study. We are interviewing you to better understand the challenges faced by healthcare providers in delivering vaccinations to migrants and the potential barriers migrants face in accessing vaccinations in Norway, as perceived by healthcare providers. The hope is that this exploratory study can identify gaps and direct future research for the vaccination of migrant populations in Norway and Europe. There are no right or wrong answers to any of our questions, as we are interested in your own experiences.

Participation in this study is completely voluntary. All information that you share with me today will be anonymized and confidential. Furthermore, we will be focusing on getting an overview of the system and processes in place for the vaccination of migrants in Norway and its functioning, rather than any personal data related to patients, yourselves, or others.

Definitions we will be using in our study:

- Immigrant: a person who makes a conscious choice to leave their country to seek a better life elsewhere with the goal of living permanently in the foreign country.
- Refugee: a person who has been forced to leave their country in order to escape war, persecution, or natural disaster, seeking protection in another country.
- Asylum seeker: A person who awaits a decision on the application for refugee status.

For simplicity, these three groups will be grouped under the term ‘migrant’ in our study. Wherever you feel that you can specify if you are talking about refugees or immigrants, please do so.

We are looking at all age groups. We are considering a child to be between the ages of 0-10 years old, an adolescent: 10-19, and an adult: 20+ years old.

We’ll also be referring to vaccine-preventable diseases (VPDs), which includes measles, mumps, rubella, diphtheria, tetanus, pertussis, polio, *Haemophilus influenzae* type B (HiB) and hepatitis B (ECDC, 2018).

**Opportunity for participant to ask questions and interviewer to provide clarification*

Today’s interview will take about 1 hour.

Would it be okay with you if we audio-recorded the interview after you have provided a background of yourself and your role? We want to start the recording after a description of yourself to ensure no personal identifiers are audio recorded. I will tell you when I will turn on the recording. The purpose of the audio-recording will be to allow for a deeper analysis of what you tell me here today. Again, all responses will be kept confidential and are anonymized. This means that your de-identified interview responses will only be shared with research team members and we will ensure that any information we include in our report does not identify you as the respondent. You may decline to answer any question or stop the interview at any time and for any reason.

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The interview will first focus on your work here, then the process of vaccination of migrants in Norway, the possible challenges, and possible solutions if you see any.

If anything I say is unclear, please let me know.

Do you have any questions now before we begin?

Background questions:

1. What is your role here and what do you do?

Ask to start recording

2. In what ways does this clinic interact with migrant populations?
3. Could you describe the patient demographic that you work with?

Process of immunization of migrants in Norway and potential challenges/barriers

1. What is the process in place to ensure that adult migrants obtain proper vaccinations upon arrival to Norway?
2. Where can migrants obtain vaccination?
3. Are there specific policies or guidelines for health care providers on how to provide vaccinations to adult migrants?
4. How does this process of vaccination, if at all, differ between refugees and immigrants?
5. What is the process in place to ensure that migrant children and adolescents obtain the proper vaccinations?
6. As official data is not available on migrant vaccination coverage in Norway, do you consider that some migrant groups, if any, are less covered by immunization than the Norwegian population?
7. Based on your experience, do you believe that migrants have a low uptake or acceptance of vaccination in Norway?
8. Do you consider that there is a specific age group of migrants less covered by immunization than other age groups? If yes, which age group?
9. In your opinion, what do you consider to be the main barriers, if there are any, to vaccination among migrants?
10. Do migrants have to pay any medical fees associated with vaccination? Is there a difference for vaccination costs between children, adolescent, or adult migrants? Do you believe there are any barriers around this?
11. In what ways do the barriers to vaccination differ for immigrants, refugees, asylum seekers, and undocumented migrants?
12. In your opinion, do you believe that there are specific challenges for completing multi-dose vaccinations for migrants? If yes, what do you consider these challenges to be?
13. Do you feel there are any gaps or challenges with the guidelines for vaccinations for migrant groups?

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Strategies employed

14. Are you aware of any initiatives developed with regards to increasing vaccination of migrants in Norway? If so, could you please describe them?
15. Does your clinic have any initiatives to improve the immunization coverage of migrants? If so, could you please describe them?

Use of translators by HCPs with migrant patients

16. Are health care providers trained or educated on how to work with migrant patients? If so, what do these courses entail?
17. Could you describe any initiatives to improve the cultural competency of health care providers in Norway?
18. Are translators available when working with migrant patients?
19. Are translators used when working with migrant patients? What does this process of arranging and using a translator look like?
20. Is information about vaccinations available in various languages? Where can one obtain these?

The Norwegian health system

21. In your opinion, what are the strengths and/or weaknesses of the Norwegian healthcare system in providing vaccinations to migrants?

Areas for improvement

22. What information would be helpful for healthcare providers with regards to improving access to vaccinations for migrants in Norway?

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Standards for Reporting Qualitative Research (SRQR)*

http://www.equator-network.org/reporting-guidelines/srqr/

Title and abstract

	Page/line no(s).
Title - Concise description of the nature and topic of the study Identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended	1-3
Abstract - Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions	19-56

Introduction

	Page/line no(s).
Problem formulation - Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement	60-97
Purpose or research question - Purpose of the study and specific objectives or questions	97-99

Methods

	Page/line no(s).
Qualitative approach and research paradigm - Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/ interpretivist) is also recommended; rationale**	101-105
Researcher characteristics and reflexivity - Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, and/or transferability	152-162
Context - Setting/site and salient contextual factors; rationale**	109-114
Sampling strategy - How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale**	107-121
Ethical issues pertaining to human subjects - Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues	148-150
Data collection methods - Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale**	123-131

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Data collection instruments and technologies - Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study	125-128
Units of study - Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)	118
Data processing - Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/de-identification of excerpts	129-130
Data analysis - Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale**	128-129
Techniques to enhance trustworthiness - Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale**	130-132

Results/findings

Synthesis and interpretation - Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory	166-276
Links to empirical data - Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings	199 (and supplementary documents)

Discussion

Integration with prior work, implications, transferability, and contribution(s) to the field - Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field	281-344
Limitations - Trustworthiness and limitations of findings	346-365

Other

Conflicts of interest - Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed	382
Funding - Sources of funding and other support; role of funders in data collection, interpretation, and reporting	383-385

*The authors created the SRQR by searching the literature to identify guidelines, reporting standards, and critical appraisal criteria for qualitative research; reviewing the reference lists of retrieved sources; and contacting experts to gain feedback. The SRQR aims to improve the transparency of all aspects of qualitative research by providing clear standards for reporting qualitative research.

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**The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.

Reference:
O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. **Standards for reporting qualitative research: a synthesis of recommendations.** *Academic Medicine*, Vol. 89, No. 9 / Sept 2014 DOI: 10.1097/ACM.0000000000000388

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What are the challenges in the Vaccination of Migrants in Norway from Healthcare Provider Perspectives? A qualitative, phenomenological study

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What are the challenges in the Vaccination of Migrants in Norway from Healthcare Provider Perspectives? A qualitative, phenomenological study.

Anna Socha[1] and Joern Klein[2§]

[1] McMaster University, Global Health, 1280 Main St. West MDCL 3500, Hamilton L8S 4K1, Canada

[2] Department of Nursing and Health Sciences, University of South-Eastern Norway (USN) Post office box 235, 3603 Kongsberg, Norway.

§ Corresponding author (email: jorn.klein@usn.no, phone: +47-31008899)

Keywords: Migrant health, vaccination, Healthcare providers

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Abstract

Background: Migrant populations in the European Union suffer a disproportionate burden of infectious diseases and may be particularly vulnerable due to poor conditions in countries of origin or throughout transit to the host country. Given the rising level of migration into Europe, the vaccination of migrant populations has become a key priority, with European countries committing to equitably extending the benefits of vaccination to all. However, in Norway, little is known about the vaccination of migrant populations.

Objective: The aim of this qualitative research study was to explore the process of vaccinating migrant populations in Norway and elucidate any challenges as perceived by healthcare providers. This involved exploring the challenges faced by healthcare providers in delivering vaccinations to migrants as well as potential barriers faced by migrants in accessing vaccinations in Norway, from the perspectives of healthcare providers.

Methods: In June 2019, the authors conducted semi-structured interviews with 7 healthcare providers who are involved in vaccinating migrants in South-Eastern and Western Norway. This included health care providers working in general practice, public health and infectious disease clinics, migrant health clinics, and local public health institutes.

Results: An inductive, exploratory analysis identified key themes that were reviewed and analyzed in light of existing literature. According to the informants, the Childhood Immunization Programme is effective in including migrant children within the national vaccination schedule. However, gaps in vaccination appear to exist with regards to adult migrants as well as working migrants. There is currently no consistent or structured approach to vaccinating adult migrants in Norway, including no guidelines from governing bodies on how to organize vaccination to adult migrants in municipalities. Further, reasons why adult vaccination is not prioritized were provided, such as tuberculosis screening and treatment taking precedence and the common assumption among healthcare providers that vaccinations are dealt with in childhood.

Conclusion: The development of equitable immunization programs requires an understanding of the multifactorial barriers to immunization, such as those posed by policies, structures, and governance bodies, or lack thereof. It also entails understanding the administration of such policies and the perspectives of those who are responsible for the delivery of vaccination, namely

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healthcare providers. This qualitative research study demonstrated that challenges exist in the vaccination of migrants in Norway and that they are coherent with those experienced throughout the EU, principally the presence of gaps in vaccinating adult migrants, working migrants, and internal EU migrants. This research provides direction for future investigations and highlights the need for the inclusion of migrant status in the Norwegian Immunization Registry.

Strengths and limitations of this study

- This study illuminates some of the challenges with delivering vaccinations to migrant populations in Norway from a healthcare provider perspective.
- Challenges exist in the vaccination of migrants in Norway.
- There is currently no consistent or structured approach to vaccinating adult migrants in Norway.
- The voices of migrants are key in understanding their challenges and should be prioritized in future studies.

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Introduction

Migrant populations in the European Union (EU) suffer a disproportionate burden of infectious diseases.[1] Some subgroups of migrants may be particularly vulnerable to infectious diseases because of poor conditions in countries of origin where civil unrest or war have caused vaccination programs to be interrupted, or in transit to the host country where access to healthcare is limited and migrants may be exposed to malnutrition, overcrowding, and unsanitary conditions.[2,3] Additionally, migrants within the EU may be under-immunized for vaccine-preventable diseases (VPDs).[4] The European Centre for Disease Prevention and Control (ECDC) released targeted guidance for effective screening and vaccination of newly arrived migrants, which states that there is a clear benefit to enrolling migrants in vaccination programmes and ensuring catch-up vaccination.[2] Further, as part of the European Vaccine Action Plan 2015-2020, all EU countries committed to meeting regional vaccination coverage targets, eliminating endemic measles and rubella, controlling hepatitis B infection, and sustaining polio-free status in an effort towards creating a Region free of VPDs.[5] However, progress towards equitably extending the benefits of vaccination to all and meeting regional vaccination coverage targets has been slow, and there still exists significant gaps in understanding how to deliver effective vaccination services to diverse and mobile migrant populations in the EU.[3,6,7,8]

In recent years, immigration to Norway has greatly increased.[9.10] At the end of 2019, there were approximately 765 000 first generation migrants in Norway, which amounts to about 14.4 percent of the total population in Norway.[11,12] According to the Norwegian Institute of Public Health (NIPH), most new cases of tuberculosis and hepatitis B and half of new HIV cases occur among migrants in Norway.[13] Although research studies on migrant health and migrant experiences with health services in Norway has grown in recent years, the NIPH claims that research on migrant health is still lacking.[13] To date and to the best of the authors' knowledge, there has been no targeted research on the vaccination of migrant populations in Norway. In general, vaccination rates among the Norwegian population are high[14], but not all migrants are included in such figures, which may have led to the negligence of migrant-specific challenges.

Cultural factors, knowledge barriers, insufficient access to healthcare, and vaccine hesitancy have been identified as common barriers to immunization faced by migrants.[15] In the Norwegian context, obstacles for migrant populations in accessing and navigating the primary healthcare

system have been studied and are in parallel with challenges documented in the literature, such as conflicting ideas about the role of the doctor, language barriers, and cultural differences.[16] However, systems-, provider-, and patient-related challenges with delivering vaccination programs to migrants in Norway have not been studied. The development of equitable immunization programs requires an understanding of the multifactorial barriers to immunization, such as those posed by policies, structures, and governance bodies and faced by both healthcare providers (HCPs) and migrants.[7] As such, this qualitative research study aims to elucidate the challenges faced by HCPs in delivering vaccinations to migrants and migrants in accessing vaccinations in Norway.

Methods

This qualitative, phenomenological study was conducted to explore the experiences of 7 healthcare providers involved in the vaccination of migrants in Norway. The objective was to develop an understanding of the participants' perceptions of vaccination of migrants in Norway, including challenges faced by HCPs in delivering vaccinations and potentials barriers faced by migrants in accessing vaccinations.

Purposive sampling was used to select interview participants. Throughout June 2019, the researchers invited 23 HCPs working at different health stations ("helsestasjon" in Norwegian) or clinics, to be interviewed. In Norway, vaccination is primarily provided in these so called "health stations". Health stations are under municipal jurisdiction and are responsible for preventative health services, including national vaccination programs. However, the organization of the municipal health system varies based on community needs wherein some municipalities have health stations specialized for certain populations or issues, such migrants and Norwegians who return to the country from travel. Therefore, the researchers reached out to clinics and a policy and research institute in the region that were involved in vaccination work, which included general practitioner clinics, public health/infectious disease/travel clinics, a public health institute, and migrant health stations. HCPs were contacted via email and asked about their willingness to be interviewed for the study. All HCPs who agreed to participate were interviewed. As such, seven HCPs working at different health stations were interviewed; this included nurses and physicians from public health/infectious diseases/travel clinics, a public health and infectious disease institute, a migrant health clinic, and a general practitioner clinic.

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All interviews were conducted in South-Eastern Norway, except with one interview taking place in Western Norway. Interviews took place within the health station clinics. The interviews were approximately one hour in length and conducted in a semi-structured format using an interview guide (supplementary file 1). The interviews included discussions on the process of how migrants obtained vaccinations in their respective municipalities and challenges faced by migrants and HCPs in this process. Interviews were audio-taped and transcribed verbatim, which was followed by an inductive, exploratory analysis that identified key themes from the perspectives of the HCPs. Data was transcribed and coded by hand. Themes were compared against the existing literature of vaccination in Norway and of vaccination challenges in Europe to ensure reliability and trustworthiness of the data.

At the beginning of interviews, key terms were defined and clarified for interview participants. The following definitions were applied:

- Immigrant: a person who makes a conscious choice to leave their country to seek a better life elsewhere.
- Refugee: a person who has been forced to leave their country in order to escape war, persecution, or natural disaster, and is seeking protection in another country.
- Asylum seeker: A person who awaits a decision on the application for refugee status.
- Working migrant: A type of legal immigrant that is entering Norway to pursue work.

In this research study, the term “migrant” refers to anyone who has moved from their home country to another, which encapsulates all the aforementioned subtypes.

The definition for VPDs was also clarified at the beginning of interviews; specifically, the ECDC definition was used.[2]

Identifiable or personal data were not audio-recorded nor transcribed to ensure anonymity of participants and therefore ethics approval was not required. All participants were fully informed about the study and verbal consent was obtained.

Author Reflexivity Statement:

The lead author of this work is a White, middle-class, native English-speaking female of European Canadian ancestry. Her limitations in this work is that she is not a migrant or Norwegian. She is aware that she views the challenges of migrants and those of Norwegian healthcare providers

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from an inherently outsider's perspective and that by not being Norwegian, she does not have an in-depth, first-hand knowledge of the Norwegian healthcare system. However, she has worked with migrant populations and has dedicated her studies and work to causes of social justice and health equity. She views health as a human right and migration in a positive light, owing to her personal experiences as a daughter of immigrant parents and as a global health researcher undertaking critical discussions in the area of migration and health. Furthermore, throughout this research project, she had the support of a Norwegian and immigrant supervisor to support her in understanding the local Norwegian context and healthcare system.

Patient and public involvement:

No patient involved.

Results

Participant quotes are available in supplementary file 2.

Childhood Immunization Programme

All HCPs agreed that the Childhood Immunization Programme (CIP) in Norway functions well and captures all children, including migrant children, within the national vaccination schedule. Participants described how the CIP in Norway is well established and enforced by NIPH and the Norwegian law. The NIPH provides national recommendations for which vaccines to include in the program, where to deliver vaccinations, and who is responsible for providing the vaccinations.

Vaccine Coverage & Uptake Among Migrants

All participants acknowledged that Norway has been fortunate to have high vaccine coverage to date. All HCPs were in agreeance that non-Western migrants, especially refugees, are very accepting of vaccination and should not be considered a public health concern. Although it was stated to be very rare, a few HCPs mentioned that those that refuse vaccines are more likely to be Norwegians or migrants from Europe. The responses of the participants demonstrated that vaccine hesitancy does not appear to be a large problem at present.

Lack of Data on Migrant Vaccination Coverage

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Most HCPs expressed that data on the vaccine coverage of migrants is needed to know whether there are gaps in vaccine coverage among migrants. Currently, the Norwegian Immunization Registry, SYSVAK, does not stratify by migrant status. As such, HCPs were hesitant when discussing challenges faced by migrants in accessing vaccinations as perceived by health workers.

Organization and Coordination of Vaccination for Adult Migrants

The Norwegian Directorate of Health provides national guidelines on vaccination for migrants, which includes what vaccines should be provided and to whom. However, municipalities are responsible for organizing *how* to deliver vaccination to adult migrant populations, including where and by whom. Many HCPs felt that the guidelines for vaccinating adult migrants were sufficient and that they experienced no major challenges; however, a couple respondents experienced a number of challenges in their work. A couple interviewees felt that the system for vaccinating adult migrants within municipalities was "ad hoc", involved "detective work", and was not prioritized. Without clear a protocol or guidelines on how to deliver vaccines to adult migrants within municipalities and with no clear division of responsibilities among HCPs, a few respondents suggested that vaccination may not always be offered to adult migrants nor a thorough vaccine history completed. However, some HCPs did have organized systems for ensuring adult migrants were vaccinated in their municipalities. Regardless of their different experiences, many respondents stated that migrants who are lacking vaccinations are likely to be identified at some point when accessing healthcare services, but that it may be delayed and not done in the most efficient and effective manner. These responses suggested that although municipalities are responsible for organizing a system for vaccinating adult migrants, the roles and responsibilities of HCPs may not be clearly outlined nor vaccination of adults prioritized within their municipalities.

Priorities in Infectious Disease Control

All participants described that HCPs balance numerous tasks of which the vaccination of adults within municipalities is not a large priority. A few respondents explained that it is likely that Norwegian HCPs often assume that adults are vaccinated since most vaccinations are scheduled for childhood. Participants mentioned that HCPs that do not work directly in migrant health, such as general practitioners, may not remember to offer vaccinations to adult migrants attending their clinics.

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Further, a few respondents highlighted that screening, vaccination, and treatment for tuberculosis (TB) is prioritized over adult vaccination. TB screening and follow-up is mandated by law wherein HCPs in refugee reception centres and in municipalities must follow specific protocol for documenting, screening, and treating TB. On the contrary, clear and enforced protocol for documenting and providing adult vaccinations does not exist; respondents described how this can lead vaccinations to not be offered to some adult migrants nor rigorously documented in refugee reception centres and municipalities.

A gap in hepatitis screening of pregnant women was not mentioned by informants.

Working Migrants Vaccination Challenges

There are no requirements to obtain vaccinations for working migrants; however, if they come from a country with a high prevalence of TB and intend on staying more than 3 months, then they must undergo screening for TB. Some participants described how this may be a potential gap in the system wherein many working migrants are not offered vaccination. It was noted by many HCPs interviewed that there are some working migrants that are permitted to continuously re-apply for short work permits and can therefore live in Norway for long periods of time without having to complete a health examination, including an assessment of vaccine history.
Many HCPs described that working migrants are being identified when contacting healthcare services and then being referred to full health screening. In other cases, some employers may require working migrants to complete a health examination. However, even if offered vaccinations, participants claimed that it is likely that working migrants would refuse since vaccinations are not free of charge for working immigrants and can be quite costly.

Financial Challenges for Migrants

All vaccines are free for infants, children, and adolescents; however, there may be fees for adult vaccinations. Top priority vaccinations, such as MMR and the polio vaccine, are free for refugees and asylum seekers and are provided upon arrival. Hepatitis B and the BCG vaccine are also free for some migrants, depending on which country they come from. However, aside from these vaccinations, vaccines are not free of charge. It was mentioned by a HCP that additional vaccinations may not be accepted by refugees since they only receive some financial support

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from the state and vaccines are expensive. As mentioned above, working migrants need to pay for vaccines and that would likely be a burden given the high price for vaccines.

Education for Healthcare Providers on Migrant Health

It was stressed by some of the HCPs that there should be more education for HCPs on issues related to migrant health, such as how to use a translator effectively, cultural humility, and how to discuss challenging topics, such as psychological trauma. Currently, there are no mandatory courses on migrant health within HCP education for both nurses and doctors.

Translators & Navigating Language Barriers

Participant responses were divided on the use of translators in their clinical services. Some respondents described no challenges with obtaining and using a translator, stating that they always use one when needed and believe that their colleagues did the same. Alternatively, some HCPs had the impression that a number of HCPs do not use translators as frequently as they should. One participant believed that this was largely due to the lack of HCP knowledge around how to arrange a translator as well as how to navigate using a translator. A few participants also expressed that arranging a translator can be a “complicated” process - it takes more time and would be easier to just not offer the service or even not see migrant patients to avoid this additional task. One participant stated many HCPs see using a translator as a burden, as opposed to a necessity. A few HCPs felt that patients are not aware of their right to having a translator and that they are not charged for this service. One HCP felt that HCPs are not educating their patients on their right to having a translator.

Discussion

This study illuminates some of the challenges with delivering vaccinations to migrant populations in Norway from a healthcare provider perspective.

The inclusion of migrant children and adolescents in national vaccination schedules is a key feature of the ECDC guidelines (Hargreaves, 2018).[2,17,18] Children are considered to be at

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greatest risk of contracting VPDs and represent approximately 25% of the total migrant population in the EU Region.[19] This research study has demonstrated that Norway's national immunization program for children is comprehensive and inclusive of migrant infants, children, and adolescents in Norway.

HCPs overwhelmingly agreed that it was difficult to identify inequities in immunization given the lack of data on immunization coverage in migrants. In fact, there is a lack of systematic data collection throughout European countries on immunization coverage and determinants of non-immunization among migrants.[1,20] To increase equity in immunization provision, Boyce et al. (2019) suggest that countries should disaggregate immunization uptake data by key determinants of inequalities including ethnicity and migration status.[7] Connecting data on the social determinants of health with vaccination coverage has immense potential for improving services and increasing vaccination coverage as has been demonstrated within a number of countries in the EU.[7,21] Our research highlights the limitation of the current national immunization registry in Norway and the value of integrating migrant status in immunization uptake data to direct future research and initiatives on migrant health.

Furthermore, it is evident that gaps exist in the vaccination for adult migrants. As described in the results, 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. This is coherent with findings from the ECDC that found a lack of clarity among HCPs regarding approaches to catch-up vaccinations in adult migrants.[17] A quote by an Estionian HCP captures the issue perfectly: "The completeness of adult migrant vaccination depends on the health care provider - if they consider vaccination as a priority".[17] This sentiment was echoed among Norwegian HCPs as many HCPs felt that vaccination was not always prioritized and offered to adult migrants. It is our suggestion to conduct further research on how to ensure that adult migrants are provided vaccinations. Further, developing guidelines on where and by whom should vaccinations be delivered for adult migrants may be worth consideration.

Our research highlights the gap in providing vaccinations to working migrants in Norway. Europe-wide research completed by the ECDC has highlighted important yet frequently neglected dimensions of migration in the EU such as labour migration and internal EU migration, which have been linked to measles outbreaks.[18] In the ECDC dataset, internal EU migrants contributed

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relatively high numbers of hepatitis B and hepatitis C, demonstrating the importance of including internal and labour migrants within vaccination.[22] In this research, numerous HCPs expressed that there were gaps in policies and care for working migrants, especially for those from within the EU and short-stay migrants. Further investigations and initiatives for screening and vaccinating working migrants should be considered by Norwegian decision makers.

Our research demonstrates that vaccine hesitancy is likely uncommon among non-Western migrants in Norway, namely refugees and asylum seekers, but it may be a larger concern among migrants from within the EU. Many refugees and migrants arriving in Europe come from Middle Eastern countries where vaccines are widely accepted and coverage has traditionally been high.[23] This finding is important considering previous cases where infectious disease outbreaks were blamed on refugees and asylum seekers, such as during the rise of measles throughout the EU in 2018.[24] There is no evidence that justifies viewing refugees or asylum seekers as a public health threat and this fear is irrational and harmful.[25]

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. Given that translators are important for effective implementation of national vaccine policies[19], potential barriers to using translators described should be further explored to ensure providing appropriate and accessible healthcare.

None of the informants mentioned gaps in hepatitis screening of pregnant women, despite it being a well-known migrant health issue. We believe that this may be due to a lack of awareness of the issue by HCPs. Until 2018, Norway was among the few countries in Europe that did not test all pregnant women for chronic hepatitis B infection.

Limitations

Due to time constraints, this study did not interview migrants and therefore, the study focuses on the challenges faced by HCPs as opposed to challenges faced by migrants. However, the voices of migrants are key in understanding their challenges and should be prioritized in future studies. There were a limited number of interviewees given that data collection was conducted during the Norwegian summer months where many are on holiday. This limits the ability to make generalizations. Nevertheless, the authors believe the research is representative, but not entirely

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comprehensive, of the challenges in vaccinating migrants in Norway as consistent themes emerged across the interviews. Moreover, the interviews were in depth providing quality content, and interviewees were from all different municipalities and working in different types of clinics throughout Norway, providing a wide range of perspectives. Future research should extend deeper into the topics described and gather information from a larger sample.

Interviews were conducted in English, but all participants spoke English well and no major language barriers were experienced during the interviews. The interview transcripts were coded by one researcher increasing the potential for bias into the research study; however, interviews were audio recorded, transcribed verbatim, and systematically coded to maintain integrity and quality of the data. Lastly, there are types of migrants that were not discussed in this research study, such as family reunification immigrants, asylum seekers, and undocumented or "paperless" migrants, whose experiences with vaccination require further research.

Conclusion

This research provides new information on both the strengths and weaknesses of the practice of vaccinating migrants in Norway. The results are similar to challenges experienced throughout the EU, such as gaps in vaccinating adult migrants, working migrants, and internal EU migrants.

Given the rising level of migration into Europe, the vaccination of migrant populations has become a key priority in Europe.[2] Findings from this study can be used to direct further research throughout Norway and countries with similar contexts. During this time of growing anti-immigrant sentiments and political agendas, there is an urgent need for the public health community to ensure that the needs of migrants are met and that HCPs are providing equitable, accessible, and effective services.

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JK designed the study, participated in the implementation, data analysis, and critically reviewed the manuscript. JK also served as guarantor.

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16 410 reasonable request.
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Interview Guide

Introduction

Thank you for agreeing to meet and participate in our research study. We are interviewing you to better understand the challenges faced by healthcare providers in delivering vaccinations to migrants and the potential barriers migrants face in accessing vaccinations in Norway, as perceived by healthcare providers. The hope is that this exploratory study can identify gaps and direct future research for the vaccination of migrant populations in Norway and Europe. There are no right or wrong answers to any of our questions, as we are interested in your own experiences.

Participation in this study is completely voluntary. All information that you share with me today will be anonymized and confidential. Furthermore, we will be focusing on getting an overview of the system and processes in place for the vaccination of migrants in Norway and its functioning, rather than any personal data related to patients, yourselves, or others.

Definitions we will be using in our study:

- Immigrant: a person who makes a conscious choice to leave their country to seek a better life elsewhere with the goal of living permanently in the foreign country.
- Refugee: a person who has been forced to leave their country in order to escape war, persecution, or natural disaster, seeking protection in another country.
- Asylum seeker: A person who awaits a decision on the application for refugee status.

For simplicity, these three groups will be grouped under the term 'migrant' in our study. Wherever you feel that you can specify if you are talking about refugees or immigrants, please do so.

We are looking at all age groups. We are considering a child to be between the ages of 0-10 years old, an adolescent: 10-19, and an adult: 20+ years old.

We'll also be referring to vaccine-preventable diseases (VPDs), which includes measles, mumps, rubella, diphtheria, tetanus, pertussis, polio, *Haemophilus influenzae* type B (HiB) and hepatitis B (ECDC, 2018).

**Opportunity for participant to ask questions and interviewer to provide clarification*

Today's interview will take about 1 hour.

Would it be okay with you if we audio-recorded the interview after you have provided a background of yourself and your role? We want to start the recording after a description of yourself to ensure no personal identifiers are audio recorded. I will tell you when I will turn on the recording. The purpose of the audio-recording will be to allow for a deeper analysis of what you tell me here today. Again, all responses will be kept confidential and are anonymized. This means that your de-identified interview responses will only be shared with research team members and we will ensure that any information we include in our report does not identify you as the respondent. You may decline to answer any question or stop the interview at any time and for any reason.

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The interview will first focus on your work here, then the process of vaccination of migrants in Norway, the possible challenges, and possible solutions if you see any.

If anything I say is unclear, please let me know.

Do you have any questions now before we begin?

Background questions:

1. What is your role here and what do you do?

Ask to start recording

2. In what ways does this clinic interact with migrant populations?
3. Could you describe the patient demographic that you work with?

Process of immunization of migrants in Norway and potential challenges/barriers

1. What is the process in place to ensure that adult migrants obtain proper vaccinations upon arrival to Norway?
2. Where can migrants obtain vaccination?
3. Are there specific policies or guidelines for health care providers on how to provide vaccinations to adult migrants?
4. How does this process of vaccination, if at all, differ between refugees and immigrants?
5. What is the process in place to ensure that migrant children and adolescents obtain the proper vaccinations?
6. As official data is not available on migrant vaccination coverage in Norway, do you consider that some migrant groups, if any, are less covered by immunization than the Norwegian population?
7. Based on your experience, do you believe that migrants have a low uptake or acceptance of vaccination in Norway?
8. Do you consider that there is a specific age group of migrants less covered by immunization than other age groups? If yes, which age group?
9. In your opinion, what do you consider to be the main barriers, if there are any, to vaccination among migrants?
10. Do migrants have to pay any medical fees associated with vaccination? Is there a difference for vaccination costs between children, adolescent, or adult migrants? Do you believe there are any barriers around this?
11. In what ways do the barriers to vaccination differ for immigrants, refugees, asylum seekers, and undocumented migrants?
12. In your opinion, do you believe that there are specific challenges for completing multi-dose vaccinations for migrants? If yes, what do you consider these challenges to be?
13. Do you feel there are any gaps or challenges with the guidelines for vaccinations for migrant groups?

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Strategies employed

14. Are you aware of any initiatives developed with regards to increasing vaccination of migrants in Norway? If so, could you please describe them?
15. Does your clinic have any initiatives to improve the immunization coverage of migrants? If so, could you please describe them?

Use of translators by HCPs with migrant patients

16. Are health care providers trained or educated on how to work with migrant patients? If so, what do these courses entail?
17. Could you describe any initiatives to improve the cultural competency of health care providers in Norway?
18. Are translators available when working with migrant patients?
19. Are translators used when working with migrant patients? What does this process of arranging and using a translator look like?
20. Is information about vaccinations available in various languages? Where can one obtain these?

The Norwegian health system

21. In your opinion, what are the strengths and/or weaknesses of the Norwegian healthcare system in providing vaccinations to migrants?

Areas for improvement

22. What information would be helpful for healthcare providers with regards to improving access to vaccinations for migrants in Norway?

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Participant Quotes

This supplementary file contains quotes of participants interviewed in this research study to reflect and illustrate the main findings. The below quotes are categorized by the nine themes described in the Results section of the paper.

Childhood Immunization Programme

“But children really have good program here - the health centres are good in providing vaccinations.”

“But in the childhood vaccination program, it is written in the law that there is only one solution and that is that the public health nurses in the helsestasjon… the place where you go with small children… that is a special system for small children and school children… and there in that program they do not have any choice in how to organize it, it should always be that.”

“But all children are really well covered within the school health system, or before school age within the ‘helsestasjon’ - our health stations. So the children, I am not really worried about.”

“Children don’t have problem [to access vaccinations]”

“For children, it is all free - up to 20 years old now.”

“The adults don’t always get it for free, but the children do.”

Vaccine Coverage & Uptake Among Migrants

“Vaccine hesitancy: it is a very big issue in all countries- the WHO has said it is one of the biggest health threats globally. In Norway for the time being, we are quite lucky, there is high coverage.”

“But that is normally Norwegians, or maybe some from Europe [that reject getting vaccinations], but very rare. But migrant populations, they say yes to everything. They come from countries that don’t have so many vaccines, and they think it is very good… they want everything, vaccines, if we recommend it… but it's not so many Norwegians either who don’t want the vaccine.”

“I think the refugees and others who come here they take all the vaccination. They say yes because it is free. You can say no, but everyone says yes. They want to have it.”

“Refugees are very eager to get anything. They think they are possibly not well covered by vaccines so unsure.”

“Children are supposed get vaccines except when parents say no, but that is very uncommon.”

Lack of Data on Migrant Vaccination Coverage

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"I should be careful with assuming... maybe low uptake is not a problem, but we also have a big group of X [Internal EU] immigrants in Norway with some indications from other countries of low uptake. But it's hard to say if it is an issue in Norway; we don't know."

"No, we don't have data on vaccine coverage of migrants… But maybe we will go closer on that. I do not have any facts right now to give you that show that those people from those countries don't vaccinate as much as Norwegians."

"My impression is that they are well covered, but maybe not. Hard to know without information."

Organization and Coordination of Vaccination for Adult Migrants

[Are there enough vaccine guidelines for health care providers?] "I think so, it makes sense… it is enough and good guidelines. It is a very big privilege to live in and be a migrant in Norway; they have a very good healthcare system, especially the children."

"In Norway, we are almost all, except for the childhood vaccination program, the law says that the municipalities or those that are in charge locally, they can decide what is the best way to do it locally. So that means that there for vaccination in general in Norway, there are a lot of different places to get it."

"There is no organized nor standardized guideline in terms of follow up for adult migrants, but the rule is that they should be offered. And it is really hard to document or transmit information on whether they were offered this already or not when it comes to refugees and asylum seekers."

"But we risk having adults who do not have proper vaccination coverage... But I have come in contact with working immigrants that have lacked BCG for TB, and that was through the school health system that I came across a child that didn't have it, parents don't have it either, so referred them all to vaccine...so there are ways of catching it up somehow."

"But the organization of it is not always good enough. It's always.. I get a feeling that its like you think it is someone else's responsibility. Nurses and health workers are used to this being dealt with in childhood, they are not used to asking adults whether they need vaccination so its not something that is worked into their routines. So that why the migration health - if the municipality has someone working with migration health - this is obviously something on the top of our mind, but not anybody else's. So we try to catch up the ones that are at risk, but I try to ask everyone children and adults whether they've gotten and offer MMR for vaccines when they come. But then I also am afraid that the vulnerable groups that should be offered often don't get an offer. Then again vaccines are not at the top of our heads so yeah, so those ones are sometimes lost."

"We need better routines and better documentation…it's a lot of detective work to call and find out what it was, and when, and whether they need a follow up."

"I really really would like to see an overall mandated common guidelines, common rules and regulations for the municipalities in terms of how they organize their migrant health. Right now it is all in the form of advice and suggestions, which they are obviously free to interpret in their own way. And I have talked to people at X who totally agree... It has made all kinds of organization and coordinating very difficult."

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"When you arrive in Norway, you go to the police station, …, and then we get the message from police or the office you have been to. Then I will tell the patients to come here and we will check what vaccinations they have from home country. Not every community in Norway does this because they don't have the time to do this. Not every municipality has a migration health station."

[The process in place to ensure that adult migrants obtain proper vaccination upon arrival to Norway]: "It is complicated. It is quite easy and orderly when it comes to refugees - or it should be, seeing as they have the reception centre - it is a big reception center where all asylum seekers and quota refugees should come through upon arrival in Norway. And they have set regulations – for example, supposed to give MMR to anyone under 15 years of age and offer MMR to those over 15 who haven't had the diseases before. They are also supposed to offer polio vaccine to adult refugees I believe. These guidelines are from NIPH. Hepatitis B vaccine is supposed to be initiated or offered to those in risk groups. So those three - MMR, polio, hepatitis B should be offered. Then it comes to where they are moved to after. So this is where we run into problems. For refugees, did they get that vaccine or not. Hep B is a three dose vaccine over a year so it is important information is transferred. Multiple times have had to call did they get the vaccine, not in documents, didn't receive documents. This depends on which municipality they come to - what the different processes and guidelines are."

"So the children, I am not really worried about. It is the adults… that supposed to be offered vaccination… I have seen that it hasn't been offered due to time restraints or logistical issues - they go quickly through the system. And tuberculosis is the main priority, and vaccination is second and gets lost in process."

"No challenges [with policies]".

"It is the adults that are more complicated in terms of that. So they just give advice or suggestions - how it should be done; has what the suggestions are in terms of how to arrange healthcare for refugees and asylum seekers, newly arrived peoples in Norway. And there is says they should be offered MMR to those below 15 (years of age), and possibly polio, etc. So they really should be offered but how the municipalities set that up is not mandated anywhere."

"They have a lot of guidelines, very specific, so that nurses can do them on their own."

"But to the clinicians in hospitals and public health doctors in municipalities, there are some guidelines about communicable diseases, but they are not obligated to follow them. I think it's expected that they are following the advice, even if they are not obligated."

Priorities in Infectious Disease Control

"Nurses and health workers are used to this being dealt with in childhood, they are not used to asking adults whether they need vaccination so its not something that is worked into their routines. So that is why the migration health - if the municipality has someone working with migration health - this is obviously something on the top of our mind, but not anybody else's."

"And tuberculosis is the main priority, and vaccination is second and gets lost in process."

"For refugees and asylum seekers, those that come through reception centre, the guidelines are different depending on age and where they come from. And this is followed up by municipalities to which they are sent to. This is strong law controlled. This is an absolute necessity that places

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3 need to follow up on, and this is in quite a good order now… So for refugees this is very set in stone. If they come to this municipality they get a follow-up on tuberculosis… including for vaccinations here."

"Migrant that has gotten allowance to stay… We get contact information that police has and we are supposed to see which country they come from and we are in charge of TB check. They also should be able to access a full health check and vaccine history, which is not always available due to financial and time constraints in the municipalities where we prioritize refugees that are coming from high risk countries needing TB check."

"Public health nurses get info from the police, a letter, when there are newly arrived migrants, refugees. Then we have a list of countries that tells us whether we need to do screening for TB as it depends on age and from which country. The list and guidelines is from Norwegian Institute of Public Health. Mandatory TB screening for some."

"Adult immigrants - police sends public health nurses a letter, then public health nurses can send the immigrant a letter for TB control, but not vaccinations - if they want it they need to pay."

"I think it is very okay to have a system like this because we have time to check this vaccination. If you don't have this, this little [specialized] health station, then they go to normal health station and they come into a program, but they don't have time to take this vaccine interview, and then they will miss some vaccinations I think. I'm not 100% though."

Working Migrants Vaccination Challenges

"We think that after a while we will find them in the system. So you see the difference? The refugees we know about before they come, so we can plan and others we don't know about."

"Well… this would only be guess work by me. But I think that there is a risk for those who come for work might not have the proper vaccinations. These are usually adults, their children get picked up through the school health system, so not a big worry since these diseases are normally diseases of childhood, so I'm not really worried there. But we risk having adults who do not have proper vaccination coverage... But I have come in contact with working immigrants that have lacked BCG for example for TB, and that was through the school health system that I came across a child that didn't have it, parents don't have it either, so referred them all to vaccine...so there are ways of catching it up somehow."

"You go to police then here, but this is only from countries with lots of tuberculosis and hepatitis B. But if you come as a working migrant, you don't have to go to the police. So they don't know about our system. They can live here half or one year before I know about them. A few weeks ago, a mother was pregnant, midwife asked her if she had been to health station with other child, and she had not. So we sent a letter to them. But refugees and family reunion migrants they need to go to the police office so we know about them and invite them here."

"As a working migrant, yes you can, but they give 3 months then you have to renew it. I think they do go to the police, but police doesn't send us letter because they aren't allowed to tell us. That is a barrier and challenge because some people can live here for a long time before we know about them, but if a child, when they start school then we know."

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"Some of the working migrants, they have health insurance through their company and are connected to a doctor through their company - normally big IT companies that are doing this work visa thing. So those we are not very worried about it."

"But mainly the groups that are prioritized are refugees, asylum seekers, and family reunification."

"Because it's not that often we do vaccination on the immigrants. It's more like refugees that are coming directly and are going to be settled, we have to give them a set of vaccines because they often don't have their papers. And they have been exposed to a lot of diseases in the refugee camps, but immigrants from within the EU, it is not the case."

Financial Challenges for Migrants

"Under eighteen years, all vaccines are free. New program is that all persons up to age 25 can get vaccines for free."

"Everything is free for child except travel vaccines."

[Barriers to vaccination] "I think that they might not think they have the right to get it. And also it is quite expensive. For example, a tetanus shot costs 300 NOK. If you go to the doctor and they recommend the shot, then it will be more than 500. So I think many adult migrants don't seek it because it is so expensive."

"We have the vaccinations here. We can give it to them for free because if you are in this community, you can get this for free up to 18 years old for all migrants. If you go to a doctor though [not this specialized clinic], it is not free."

"But sometimes it stops in the municipalities because they [asylum seekers] have to finance it themselves and they don't get much money from the state, very little money. So many people will not prioritize to do vaccination."

"The situation today is that [immigrants] only get some of the vaccines for free. So it would maybe help the situation if we had a program, more systematic, and have financial support and systematic communication and material. Maybe that would lift the burden."

"If you are in this municipality, you can have this vaccination from 0 to 18 years for free."

"No financial barriers for refugees. These are supposed to be offered free of charge."

"Refugees get vaccines for free."

"Refugees - they have a good system. The government helps them as they don't have the money yet, so the government pays for them."

"In Norway, you have to pay an amount of money when you go to your GP and then after a while, you don't have to pay anything else. It may seem that the fee is low, but for asylum seeker, it is a

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problem because they have little money, and have to choose between going to doctor or eating – it is a barrier."

Education for Healthcare Providers on Migrant Health

"It is very necessary to build up capacity to deal with these immigrant patients at all levels, including primary care. To increase our knowledge and awareness, like cultural competence, cultural humility. Up to now, we have not had that in the curriculum, but in the society in which we live, it is not defendable anymore to continue this way."

"Very rarely I know nurses going to them."

"Yes, [we have optional courses]. But I think we should have more of this."

"You go if you want to, not mandatory."

"Not my area of expertise, but from my education, there is not much of it. I think that persons working in regions with lots of migrants go do courses and extra… I don't think it's in HCP education, but not sure."

Translators & Navigating Language Barriers

"Knowledge about entitlement and rights [is a barrier for migrants to healthcare and vaccinations] because even though all migrants, at least documented ones, they have the right to interpreter. Not everyone knows that. Sometimes they come with one, but they need to pay for the bus fare for them and now also for the interpreter. Those barriers are the ones we don't think about and are bigger than we think… they are there."

"But of course, I would assume that language barriers, and you know you have to learn a new system, which is different from what you are used to in your home country… itself would be a barrier. This is more my impression."

"There are many [barriers]… Of course, language, health literacy."

"I think some patients are not taken seriously because they express themselves quite vaguely. Maybe they don't have the language."

[Availability of Translators] "I'm not sure, but in many cases they are obligated to use translators. Because the professionals are responsible that the patient understood what they said. I think they use it, but not sure - not sure how much."

[Availability of Translators] "It is a bit complicated because you need to know in advance what language and then you have to book them by telephone… in a small town, you don't have all the languages there, certified translators. So we need to call a booking company. And quite often we need to do this, but not so often that we do. We are obliged by law to do. But if there are refugees, they bring interpreter… it is organized by someone else… integration service."

"We are obliged to use translators anywhere we believe that the capacity… obliged to give info in a way that is understandable to the patient. This is for anyone in healthcare system, so also

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mandated within migration health system. It is more and more being used, I think previously we were really weak - using children or anyone else as translators, other staff members - this is no longer acceptable. A lot of municipalities do cry out about the cost of this but it is a responsibility we have and we need to use money to do this. Without hesitation I get a translator for all of my meetings and I think most do that. A lot of refugees when making appointments within the regular health care system aren't always aware of their right to a translator so sometimes they wouldn't go to the doctor or wouldn't tell the receptionist that they need a translator which leads to worse quality of care."

"There are several issues. One is that we lack enough translators with high enough quality, but that's the less of the problem. Very big one is that even though patients are entitled, patients do not know. Health care providers are not clear about this, and even if they know, they find it complicated to manage, especially those who do not have many immigrants as their patients. They are find it as a burden - taking time, don't know where to phone, don't feel comfortable using this interpreters either - third person in the room. They are not taught how to manage. This is something to address in the curriculum - how to address the situation when you have interpreter. Not very difficult, but you have to know how to do it."

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Standards for Reporting Qualitative Research (SRQR)*

http://www.equator-network.org/reporting-guidelines/srqr/

Page/line no(s).

Title and abstract

Title - Concise description of the nature and topic of the study Identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended	1-3
Abstract - Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions	19-56

Introduction

Problem formulation - Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement	60-97
Purpose or research question - Purpose of the study and specific objectives or questions	97-99

Methods

Qualitative approach and research paradigm - Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/ interpretivist) is also recommended; rationale**	101-105
Researcher characteristics and reflexivity - Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, and/or transferability	152-162
Context - Setting/site and salient contextual factors; rationale**	109-114
Sampling strategy - How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale**	107-121
Ethical issues pertaining to human subjects - Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues	148-150
Data collection methods - Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale**	123-131

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Data collection instruments and technologies - Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study	125-128
Units of study - Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)	118
Data processing - Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/de-identification of excerpts	129-130
Data analysis - Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale**	128-129
Techniques to enhance trustworthiness - Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale**	130-132

Results/findings

Synthesis and interpretation - Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory	166-276
Links to empirical data - Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings	199 (and supplementary documents)

Discussion

Integration with prior work, implications, transferability, and contribution(s) to the field - Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field	281-344
Limitations - Trustworthiness and limitations of findings	346-365

Other

Conflicts of interest - Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed	382
Funding - Sources of funding and other support; role of funders in data collection, interpretation, and reporting	383-385

*The authors created the SRQR by searching the literature to identify guidelines, reporting standards, and critical appraisal criteria for qualitative research; reviewing the reference lists of retrieved sources; and contacting experts to gain feedback. The SRQR aims to improve the transparency of all aspects of qualitative research by providing clear standards for reporting qualitative research.

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**The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.

Reference:

O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. **Standards for reporting qualitative research: a synthesis of recommendations.** *Academic Medicine*, Vol. 89, No. 9 / Sept 2014 DOI: 10.1097/ACM.0000000000000388

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