World Health Organization
European Region

Statistics Poland

Health of refugees from Ukraine in Poland

A comparative analysis of 2022–2023 surveys and data innovations

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Abstract

This report presents the findings of the second round of a mixed-methods survey conducted in 2022 and 2023 to assess the health situation of Ukrainian refugees in Poland. It focuses on the integration of survey data with administrative records and big data from mobile network and payment card operators to provide a more comprehensive and dynamic understanding of the evolving situation and health needs of refugees. The results of this study inform targeted interventions, more efficient resource allocation, and effective policies to improve the health and well-being of Ukrainian refugees in Poland. These studies also serve as a practical example for other countries of how to use innovative data sources and mixed method approaches to better understand and address the evolving needs of refugees and migrants.

ISBN: 9789289062381

Keywords

BIG DATA, REFUGEES, HEALTH SERVICES ACCESSIBILITY, HEALTH STATUS, POLAND, POPULATION SURVEY, UKRAINE

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Foreword

Nino Berdzuli, MD, MPH, PhD WHO Representative and Special Envoy for the Ukraine emergency response in refugee hosting countries

Marek Cierpiał-Wolan, PhD President of Statistics Poland

In 2022, millions of people from Ukraine sought refuge in Poland, escaping the war and seeking safety. Understanding the health needs of such a large influx of people was crucial, leading, in 2022, to a collaborative survey by Statistics Poland, WHO and the health authorities in Poland, which provided invaluable insights into the health needs of refugees, and the refugees' use of and access to healthcare. The results guided healthcare decisions, supported humanitarian efforts and empowered the refugees themselves.

Now, more than 3 years later, the landscape has changed as refugees are settling into their new lives, yet their health needs continue to evolve. To stay ahead, new data are crucial to ensuring that the humanitarian response continues to meet their needs.

Recognizing this ongoing requirement, Statistics Poland and WHO have continued their partnership by launching a new survey in 2023. This study, as with its predecessor, leverages a mixed-methods approach. Quantitative data unveil trends in and the prevalence of health concerns, while the complementary qualitative data delve into the human stories behind the numbers.

By understanding the evolving needs of the refugees, policy-makers, healthcare providers, humanitarian organizations and communities from Ukraine itself can tailor their efforts accordingly. These data will inform interventions, allow resources to be allocated effectively and ensure refugees receive the care they deserve.

Building on the success of our 2022 survey "Health of refugees from Ukraine", Statistics Poland and WHO present the results of a second round of surveys conducted in late 2023 in this report. These shed light on the refugees' health needs and access to healthcare, provide crucial updates, and identify evolving trends through a comparative analysis of the 2022 and 2023 surveys.

This latest report follows the positive reception to our side event at the 54th Session of the United Nations Statistical Commission in February 2023, which recognized the value of our work and urged WHO to build on this effort to collect this type of data on the health of refugees and migrants globally. Statistics Poland and WHO are proud to present the results of the second round of the survey, which have not only gathered quantitative and qualitative data from thousands of refugees from Ukraine in Poland, but also tested a promising data integration methodology. Our goal is to integrate big data with traditional data sources for validation, timely insights, sound analysis, and improved decision-making regarding migrants and refugees. This innovative methodology holds great potential for generating robust health estimates for refugees and migrants, initially in Poland but with subsequent global possibilities. In addition, this work exemplifies a successful collaboration between the health sector and a national statistical office, which also serves as a global model.

We are pleased to present the 2022–2023 survey report, which showcases an innovative data integration methodology and its potential to address the health needs of refugee and migrant populations globally.

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Statistics Poland, University of Rzeszów:

Marek Cierpiał-Wolan, President

Anna Borowska, Director General

Olga Świerkot-Strużewska, Director

Statistics Poland – Statistical Office in Rzeszów:

Łukasz Sarama, Senior Specialist

Iwona Januś, Chief Specialist

Piotr Szlachta, Head

Sebastian Wójcik, Head

Bernadeta Ziomek-Niedzielska, Head

Wojciech Inglot, Chief Specialist

Agnieszka Giemza, Specialist

Tomasz Dziok, Specialist

Interviewers:
Oksana Lipitak, Justyna Hrycyna

Statistics Poland – Statistical Office in Lublin:

Krzysztof Markowski, Director

**Research Institute
for System Statistical Studies, Ukraine:**

Igor G. Mantsurov, Director-General

National Academy of Sciences of Ukraine:

Anna Hvelesiani, Leading Researcher, Institute for Demography and Life Quality Problems

WHO Country Office in Poland:

Nino Berdzuli, WHO Representative/Head of Country Office, Special Envoy for Ukraine emergency response in refugee hosting countries

Paloma Cuchí, WHO Country Office Representative/ Head of Country Office until August 2023

Paulina Nowicka, National Consultant for Health Information and Surveillance

Gerardo de Cosío, Consultant on Health Information Management in 2023

Sophie Scott, External Communication Consultant

WHO Headquarters Department of Health and Migration:

Rifat Hossain, Technical Officer, Responsible for Global Data Initiative on Refugee and Migrant Health

Khawla Nasser AlDee, Consultant

WHO Regional Office for Europe:

David Novillo, Regional Adviser

Keyrellous Adib, Technical Officer

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We also gratefully acknowledge the invaluable support of the participating mobile network operator and payment card operators. Their contribution of anonymized data significantly enhanced the results of this survey and allowed for the testing and refinement of our data integration methodology.

Abbreviations

CAPI	computer-assisted personal interviewing
CATI	computer-assisted telephone interviewing
COVID-19	coronavirus disease
DTP	diphtheria, tetanus, pertussis
MHPSS	mental health and psychosocial support
MMR	measles, mumps and rubella
MNO	mobile network operator
PESEL	Common Electronic System of Population Register
Polio	poliomyelitis

Executive summary

In the wake of the humanitarian crisis caused by the war in Ukraine, a critical need emerged for timely and accurate health information about the millions of refugees seeking safety in Poland. This urgent need sparked a collaboration in 2022 between Statistics Poland and the WHO Country Office in Poland to conduct a comprehensive survey of refugee health. As refugees continue to stay in Poland, the need for information persists and is evolving as their circumstances and health needs change over time. As a result, the initial effort was followed by a second round of surveys in 2023 to capture the refugees' changing needs and health status.

This report, *Health of Refugees from Ukraine in Poland: a comparative analysis of 2022–2023 surveys and data innovations*, presents a comprehensive approach to assess, understand and address the health challenges faced by refugees in Poland by exploring two critical questions. First, how can we best meet the evolving health needs of refugees? By carrying out comparative analysis of the key findings from the two rounds of surveys on the health status, needs and healthcare access of the millions of refugees who have arrived in Poland since February 2022, valuable insights into their changing circumstances have been gained that will inform targeted interventions, leading to more effective humanitarian responses and improvements in the overall well-being of the refugees. Second, how can we rapidly and reliably understand and monitor the evolving health needs of refugees to provide timely support? This study showcases an innovative methodology that explores how the integration of diverse data sources – in this case survey data, administrative records, and big data from mobile network operators and payment card transaction data – can help to provide comprehensive, continuous tracking of refugees' health.

The findings of this study reveal a diverse and evolving journey for refugees from Ukraine. Demographic trends among refugees continue to show a predominance of women, children and older adults, although the proportion of men increased in the 2023 survey, potentially correlating with a rise in reported physical trauma. The study also shows that the most frequent health conditions were acute illnesses and chronic diseases. Notably, there was a rise in reported cases of renal disease among refugees aged between 18 and 64 years that warrants further investigation. Increased prevalence of cardiovascular disease in refugees in the same age group underscores the need for focused interventions and preventive care.

Refugees were increasingly accessing and receiving healthcare, and expressed their appreciation of Polish healthcare providers. While many refugees had become more familiar with the Polish healthcare system, successfully navigating appointments and demonstrating improved communication skills, challenges persisted. Language barriers and navigating the health system remained difficult for some people, especially older individuals, while cultural factors also influenced access behaviours for certain groups. Two key challenges were common across the refugee population:

delays in accessing specialist care and the financial burden of out-of-pocket expenses, particularly for medications and private consultations. The financial strain was especially pronounced for those living in temporary accommodation. Additionally, a small percentage (10.2%) of refugees reported needing mental health services, which may not represent the actual level of need, likely due to a lack of awareness, low perception of need and negative cultural constructs. Nonetheless, refugees recognized the link between mental and physical health, expressed a desire for access to psychiatrists, sought private mental health services, and acknowledged the importance of such support for children and adolescents. Consistently high demand for sexual health services across both survey rounds emphasizes the ongoing importance of accessible and comprehensive sexual health resources for this population.

This study goes beyond traditional survey approaches by integrating diverse data sources to enhance our comprehension of refugees' health needs. The use of mixed-methods surveys (qualitative and quantitative), administrative records, and big data from payment card transactions and mobile network operators substantially enhanced the findings of this study. This innovative approach provides a multidimensional understanding of refugee health and well-being. For instance, mobile data revealed refugee movement patterns at national and municipal levels, informing resource allocation and service planning for decision-makers. Payment card transaction data shed light on healthcare expenditure, particularly on out-of-pocket costs for medications and services, revealing the financial burdens faced by refugees. The multisource data integration also exposed health inequalities among different refugee groups, prompting targeted interventions to address disparities.

The findings of this study, stemming from collaborative efforts between WHO and Statistics Poland, underscore the critical importance of continued support to facilitate access to healthcare services for refugees in Poland. As their needs evolve and the heterogeneity of the population becomes increasingly apparent, tailored interventions are essential. While some refugees have successfully integrated, others still grapple with language, cultural and economic barriers that hinder their access to healthcare. Vulnerable populations, such as those in temporary accommodation, require particular attention.

Additionally, the study highlights the urgent need to address mental health challenges among refugees. Awareness of and the perceived need for mental health services remains low despite the need for such services being apparent.

The work presented here paves the way for innovative methodologies that leverage readily available and universal data sources, such as mobile phone networks and payment card transactions, and the exploration of other sources such as marketing and transportation data. This approach enables strategic, near real-time understanding of refugee and migrant needs from the outset, providing a continuous "stream" of population movement, rather than static snapshots.

The collaborative effort between health and statistical agencies reported here demonstrates the immense gains that can be achieved through partnership in advancing data-driven humanitarian responses, ensuring that no one is left behind in times of crisis. The mobile network operator (MNO) and payment card datasets were carefully anonymized. This means all information that could identify a person was removed.

Given the strong interest expressed by WHO Member States and partners, such as the United Nations Statistical Commission, the next steps are clear: to further develop and refine this data integration methodology for application in diverse countries and contexts. Harnessing the power of these readily available data sources to generate a comprehensive, real-time understanding of refugee health needs will allow more timely, targeted and effective interventions to be implemented.

Ultimately, and most importantly, this work is dedicated to improving the lives of all refugees and migrants, and the communities in receiving countries. By fostering a deeper understanding of the health challenges faced by displaced populations and developing innovative solutions to address those challenges, we strive to create a more equitable and inclusive healthcare landscape for everyone.

Highlights

Health of refugees from Ukraine in Poland 2023 survey

Of the refugees surveyed, 64% were adults (aged ≥18 years), 36% were children, and 65% were women. The majority of adult refugees were aged 18–34 years. The majority of children were aged 5–14 years.	**DEMOGRAPHICS**
People needing healthcare had problems with sudden illnesses – such as cough, diarrhoea and fever (58%) – and problems related to chronic illnesses (26%). Refugees also frequently needed dental services (20%). Refugees with chronic diseases most frequently indicated healthcare needs relating to renal/kidney disease, cardiovascular diseases, diabetes, cancer and pulmonary diseases.	**HEALTH STATUS**
The most frequently mentioned obstacles to accessing healthcare were long waiting times (75%), followed by the cost of medications that required prescription (32%). The information barrier was no longer the main difficulty in accessing health services, which had been the case in the 2022 survey conducted shortly after the refugees' arrival in Poland.	**BARRIERS**
Of children aged 1–4 years, 86% were declared as vaccinated against diphtheria, tetanus and pertussis (DTP), 87% against measles, mumps and rubella (MMR), and 86% against poliomyelitis (polio). Childhood vaccination coverage is lower in Ukraine compared with Poland *(4)*.	**CHILDHOOD VACCINATION**
Of the adults arriving in Poland, 50% declared having been vaccinated against coronavirus disease (COVID-19). The majority (83%) of those vaccinated had received two vaccine doses. The Ukrainian population has a lower level of COVID-19 vaccination compared with the Polish population (37% and 61%, respectively) *(5)*.	**COVID-19 VACCINATION**
The survey results showed that 10% of refugees experienced problems with daily functioning caused by emotions and stress. Those that identified as having problems with daily functioning, 35% of them declared that they would benefit from mental health support.	**MENTAL HEALTH**

Highlights from the behavioural insights research into health service needs and access to health for refugees from Ukraine 2023

QUALITY	Interviews revealed varying perceptions of the Polish healthcare system among respondents. Many expressed satisfaction, citing the empathy of healthcare professionals, the quality of emergency room services and access to treatment for pre-existing conditions. However, others reported having to consult multiple doctors to obtain a diagnosis, or experiencing cumbersome procedures to obtain appointments, lab results and prescriptions for medicines.
ACCESS TO MEDICINES	The use of health care-related assistance sometimes involved incurring expenses for medications. The majority of refugees expressed frustration that medicines that could be obtained over the counter in Ukraine required prescriptions in Poland, making them difficult to access. Consequently, some respondents resorted to travelling to Ukraine to purchase medicines.
HEALTH LITERACY	As the refugees' durations of stay in Poland have increased, language acquisition and their familiarity with the health system has facilitated navigation of healthcare services. However, language barriers, socioeconomic status, and insufficient knowledge of preventive and health-promotion measures continued to pose challenges for some individuals in accessing necessary care.
COMMUNICATION CHANNELS	Refugees placed more trust in information garnered from other refugees, either via social media or face to face, and informal communication channels are more likely to reach refugees from Ukraine in Poland. Health providers, official websites and doctors are also trusted. Refugees preferred Ukrainian healthcare providers and those speaking their own language due to cultural and linguistic familiarity.
SPECIALIZED CARE	Refugees reported experiencing long waiting times for appointments, especially for specialist care. They expressed concern that these delays could worsen chronic conditions or delay cancer treatment. However, they acknowledged that Polish citizens may face similar challenges in accessing timely care.
MENTAL HEALTH	Respondents knew about mental health support services and reported having been offered psychological help and counselling by various organizations. Some respondents had used these services. A perceived lack of need, cultural attitudes towards mental health and language barriers were contributory factors to the underuse of mental health services.
DISABILITIES	People with disabilities who did not possess a disability certificate signalled that they had had difficulty accessing healthcare. In contrast, people with a disability certificate reported positive experiences with medical services, experienced shorter waiting times to see doctors and received free treatment, whereas such treatment would be very expensive in Ukraine.
MOTHER AND CHILD HEALTH/ SEXUAL AND REPRODUCTIVE HEALTH	Many respondents wanted more information about Poland's childhood immunization schedule, which differs from Ukraine's. Some women requested guidance on how to register for prenatal care and this also aligned with the consistent request for sexual and reproductive health services.

This report describes the findings from quantitative and qualitative analyses of information collected in 2023, and describes comparative analysis of surveys conducted in 2022 and 2023, on the health of refugees from Ukraine in Poland. It also presents the results of more comprehensive analysis, which has integrated innovative data sources, such as big data and administrative records, with the information collected from the surveys.

This study has enhanced and validated an innovative integrated approach to better understand the diverse needs of migrants and refugees. The report showcases the advantages of this approach, provides guidance for its replication in other countries, and offers ways for its further refinement and implementation.

Although the findings suggest differences in various health issues among refugees from Ukraine in Poland between 2022 and 2023, it is crucial to interpret these results with caution. The observed changes reflect differences in the compositions of the surveyed groups each year and do not necessarily indicate individual-level changes over time. It is important that this is kept in mind to enable a nuanced understanding of the data and to prevent potential misinterpretation. Unless explicitly stated, the data and statistics presented in this report may differ from those obtained from other sources due to differences in the methodological approaches used for data collection and the analyses of the data.

From the qualitative survey that formed part of this study, for a selected group of refugees from Ukraine, a comprehensive understanding of their awareness of their health entitlements and access to quality healthcare in Poland, and their fears, concerns, hopes and experiences, has been obtained. While the small sample size (30 individuals) may limit the statistical generalizability of the survey's findings, the rigorous participant selection process, the design of the questionnaire, use of trained interviewers to conduct the survey and advanced textual data analysis techniques used have enhanced the accuracy of the findings, resulting in a nuanced portrayal of the refugees' perspectives.

Emergency response operations require timely and high-quality data. While the qualitative and quantitative surveys provide critical information, the dynamic nature of refugees' movements across Poland means that a continuous supply of data is required to address the evolving health needs of these mobile populations. The integration of data from the surveys, administrative records and the big data analytics represents a unique approach to the use of big data in official statistics. The report thus highlights the advantages of the integrated approach, offers guidance for its adaptation in different contexts, and offers suggestions for its continued advancement and application.

Introduction

Rationale

The escalation of the war in Ukraine, which began on 24 February 2022, led to the largest refugee crisis experienced in Europe since the Second World War. Millions of people were forced to flee Ukraine, resulting in a humanitarian emergency. After 3 years, hostilities are still ongoing in Ukraine and many refugees are unable to return to their homes. Although some people have returned to Ukraine or left Poland for other countries, a significant number of refugees remain in Poland. A proportion of these refugees are trying to organize their lives in their new country by finding jobs and enrolling their children into schools. Some refugees live in private flats while others live in various types of temporary accommodation, such as hotels, dormitories and boarding schools. To adequately address the requirement to provide access to healthcare, it is essential to understand the health status of refugees, their needs and their experiences of accessing health services.

Initially, more than 2.4 million refugees arrived in Poland.[1] Some refugees have since moved on to other countries or have returned to Ukraine. By the end of 2023, there were almost 955,000 refugees listed as being under temporary protection in the country according to the official register.[2] To provide the services that refugees need, it is critical to hear directly from them about their health needs and barriers that limit or prevent them from using healthcare services. Identifying how many refugees have acute health problems – such as cough, diarrhoea and fever – and chronic disease-related health issues is also crucial to ensure that appropriate care is available.

1 Using data from the Border Guard Headquarters (Poland) *(1)*.
2 The Common Electronic System of Population Register (PESEL) *(2)*.

Overviews of the Report and the Survey

Scope of the report

The report describes the following three elements.

1. A quantitative survey was used to collect data from 4,800 refugees from Ukraine living in households and temporary accommodation, and also from refugees at the Polish–Ukrainian border (using the questionnaire in Annex 1).
2. To get a better understanding of the experiences that refugees have had regarding accessing and using healthcare services in Poland, qualitative behavioural insights research was undertaken by carrying out 30 in-depth interviews with a selected group of survey respondents to elicit further information about health service needs and access (interview questions are presented in Annex 1).
3. Data integration of three types of data sources: survey data, administrative registers and big data, which included both geospatial data obtained from MNOs used for locating mobile populations, and payment card transaction data from payment card operators used for modelling precise patterns of healthcare expenses incurred by refugees.

Analysing the quantitative and qualitative survey data, and the integration of these results with big data and administrative data, yields a better understanding of the health needs and related expenses of mobile refugee populations, and increases the precision of estimates generated to enable better targeting of interventions and policies.

Survey purpose, objectives and methodology

Purpose

The generation of evidence-based insights that can inform targeted interventions and policies to improve the health and well-being of refugees from Ukraine in Poland.

Objectives

- To assess the evolving health needs of the highly mobile refugee population from Ukraine in Poland by collecting and analysing comprehensive data on their health status, healthcare access and patterns of healthcare usage across two rounds of surveys, which were stratified by demographic and social profiles, and conducted in consecutive years. Comparative analysis was conducted to identify changes and trends in the health of refugees over time, enabling targeted interventions to be made and improved support to be provided.

- To develop and evaluate the applicability of an innovative methodology integrating diverse data sources – including survey data, administrative records and big data – to enhance the understanding of the health needs of refugee populations.

Methodology

Statistics Poland partnered with WHO to survey refugees from Ukraine who were located in Poland in November and December 2023.

This report contains the 2023 survey findings as well as comparisons with the results from the 2022 survey. The 2022 survey *(3)* was undertaken at the height of the refugee crisis at border crossing areas in Poland, using quantitative data collected from a representative sample of refugees from Ukraine and qualitative information generated from behavioural insights research conducted with a random set of survey participants. In recognition of the evolving distribution of refugees throughout Poland, the 2023 survey collected data from a range of settings. This multipronged approach incorporated three distinct surveys.

1. Household survey: a representative sample of households with refugees from Ukraine was selected using administrative data sources (population registers, border control data, etc.) and stratified random sampling. Data collection employed a combination of techniques, including computer-assisted personal interviewing (CAPI).
2. Accommodation establishments survey: a two-staged approach was used, first identifying establishments housing refugees and then systematically sampling individuals within these establishments. Data collection involved both CAPI/CATI (computer-assisted telephone interviewing) and voluntary self-administered questionnaires.
3. Border survey: as part of the quarterly "Trips made by non-residents to Poland" survey, a systematic sample of refugees crossing the Polish–Ukrainian border was surveyed using paper-and-pencil interviewing.

As in the 2022 report, behavioural insights research was used to gather qualitative data from 30 refugees who participated in in-depth interviews. The information gathered from this research complemented the quantitative data gathered from the surveys, and illuminated the behavioural and cultural factors influencing access to and use of health services by refugees from Ukraine.

The 2023 report also showcases the integration of the quantitative survey, with data from administrative sources – the Common Electronic System of Population Register (PESEL) and Border Guard (Poland) data – along with two sources of big data.

1. MNO data: daily data on the number of active Subscriber Identity Module (SIM) cards, aggregated by location, was deduplicated and analysed using a mobility model to estimate refugee numbers and mobility patterns. Market indicators and digital literacy data were also used to refine these estimates.

2. Payment card operator data: payment card transaction data were utilized to enable modelling of refugee expenditures on healthcare services. These estimates were then adjusted to align with survey data, facilitating comparative analysis to verify the study results.

To protect the privacy of individuals in this study, both MNO and payment card transactions datasets underwent an anonymization process. Each data provider implemented its own disclosure control methods to further safeguard the data, including the removal of all personally identifiable information from the datasets before releasing it for our study. These measures ensure that the datasets used in this study cannot be linked back to any specific individual, allowing for analysis while upholding the highest standards of data privacy.

For a full description of the methodology used, see Annex 2 for the survey methodology, Annex 3 for additional information of refugee characteristics and demographics, Annex 4 for additional information of behavioural insights, Annex 5 for the data sources used, and Annex 6 for data integration and innovations.

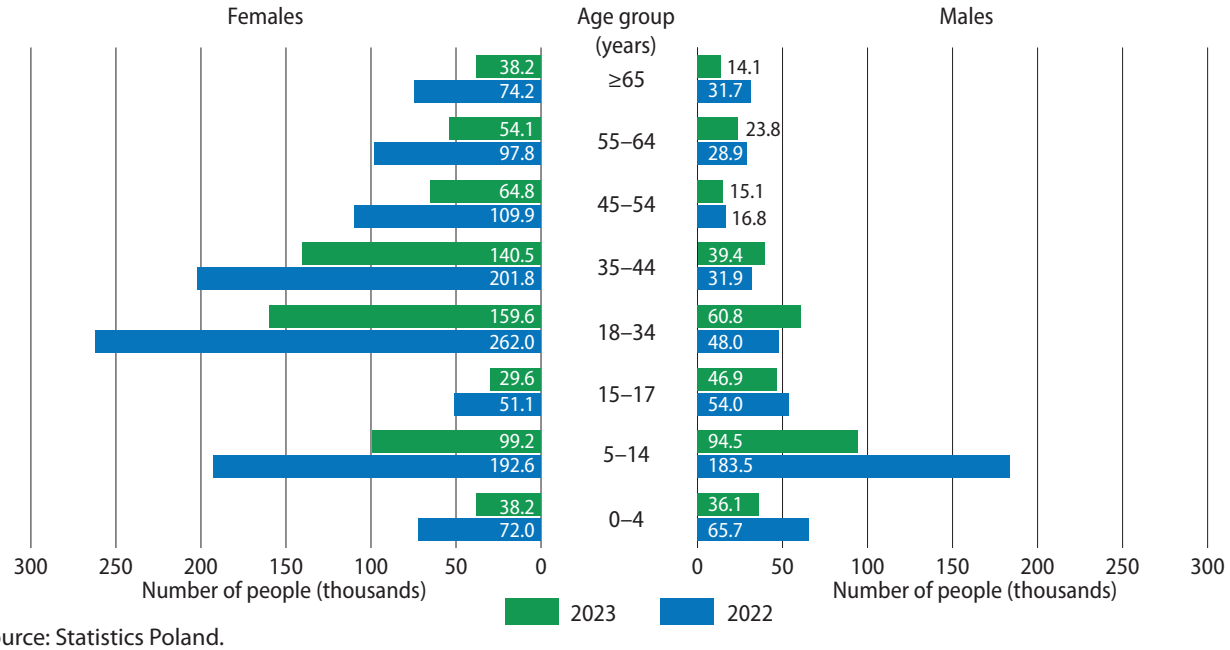
Findings

This section presents an overview of the findings from the 2023 Health of refugees from Ukraine survey, a comparative analysis of the Health of refugees from Ukraine surveys carried out in 2022 and 2023, and a comparison of the behavioural insights research carried out in 2022 and 2023 into refugees' health service needs and access. The tabular data are given in Annex 7.

Refugee characteristics and demographics

The majority of people who arrived in Poland in the aftermath of the start of the hostilities were women and children. Under the Decree of the President of Ukraine, dated 24 February 2022, No. 64/2022, "On the Introduction of Martial Law in Ukraine", for male Ukrainian citizens aged 18–60 years, the ability to leave Ukraine was restricted to certain groups, including single fathers, men with three or more children, people with disabilities, students attending universities outside Ukraine, individuals driving humanitarian aid transportation and those who were permanent residents abroad. Fig. 1 shows the number of refugees from Ukraine in Poland in 2022 and 2023 for each sex and age group.

Fig. 1. Number of refugees from Ukraine in Poland by sex and age group



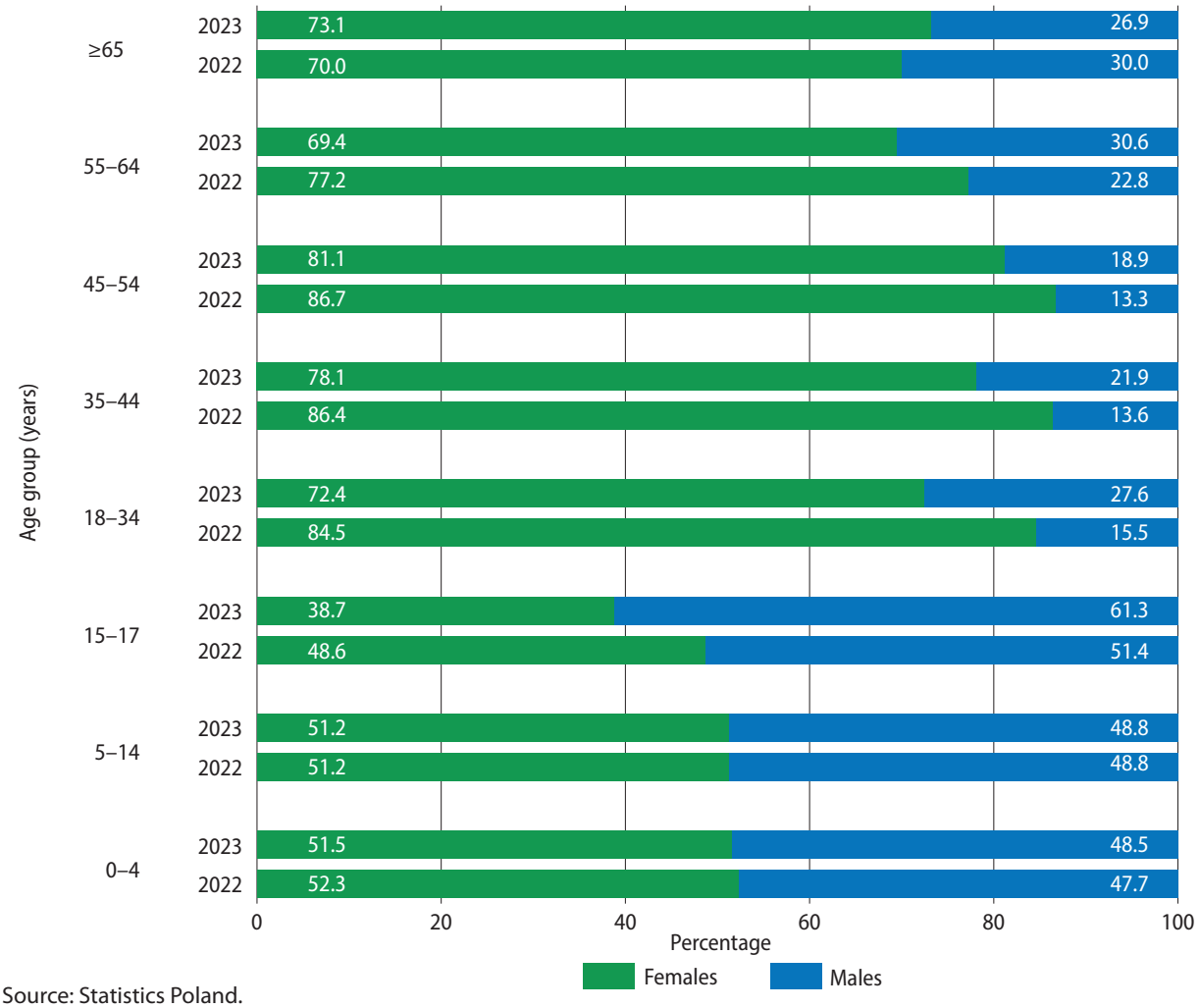
Source: Statistics Poland.

Between 2022 and 2023, the number of refugees from Ukraine in Poland decreased by 37.3% from 1,522,000 to 954,900. In 2023, 65.4% of refugees were female. Among adults (aged ≥18 years), 74.9% were female, while among children it was 48.5% (Fig. 2). In 2022, the percentage of women in the refugee population from Ukraine was slightly higher (69.7%). The majority of women were aged between 18 and 54 years. Adults made up 63.9% of the refugee population, with children accounting for 36.1%. Between 2022 and 2023, the proportions of males in the 18–34-year-old and

the 35–44-year-old age groups increased by 12.8 and 7.5 percentage points, respectively. There are several possible explanations for the increase in the proportion of males in the 2023 survey, such as war veterans reuniting with their families or demobilizing due to war traumas, which potentially contributed to the rise in reported physical traumatic conditions.

The largest age group among adults was the 18–34-year-old group (accounting for 36.1% of adults). For children, the largest age group was children aged 5–14 years, which made up 56.2% of this demographic.

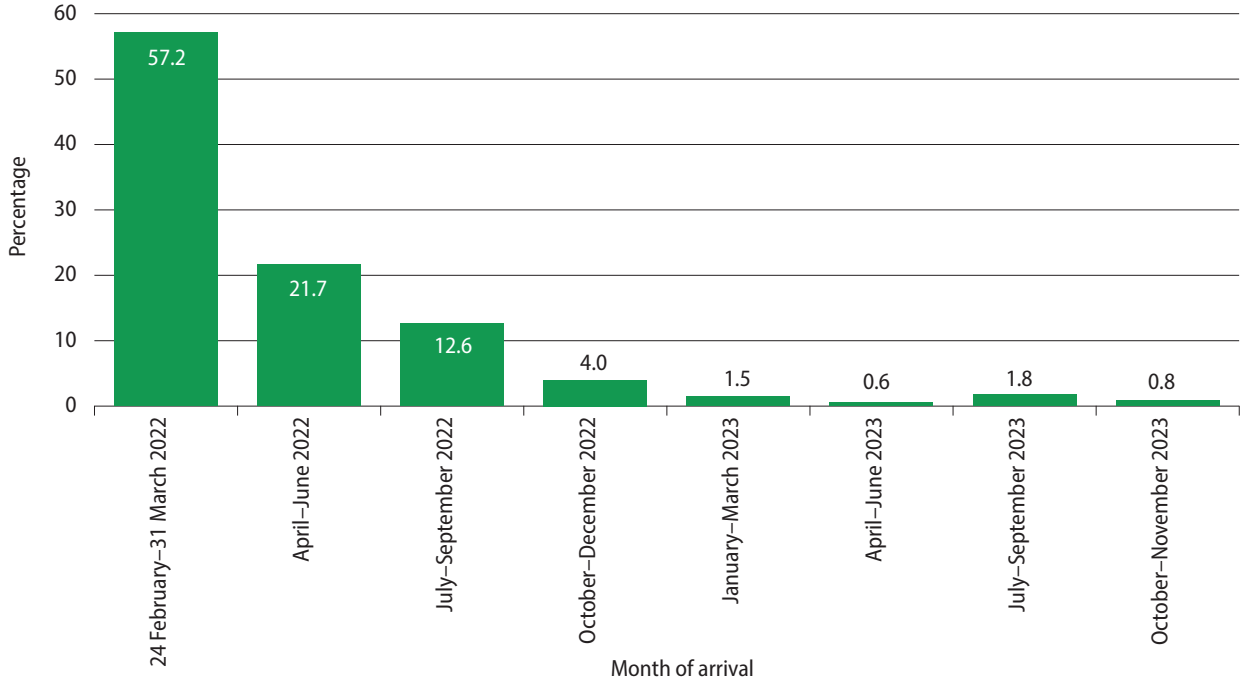
Fig. 2. Sex of refugees from Ukraine in Poland by age group



Source: Statistics Poland.

Fig. 3 shows the estimated numbers of refugees from Ukraine present in Poland at the time of the 2023 survey, including the months in which they arrived after the start of the war escalation in February 2022. The majority of refugees arrived during the early months of the war with 57.2% arriving between 24 February and 31 March 2022, 21.7% between April and June 2022, and less than 5% throughout 2023. Most refugees had been in Poland for an extended period, securing employment and housing, and gaining familiarity with the Polish health, social care and education systems. Annex 3 presents more information on refugee characteristics and demographics.

Fig. 3. Number of refugees from Ukraine in Poland in 2023 by month of arrival



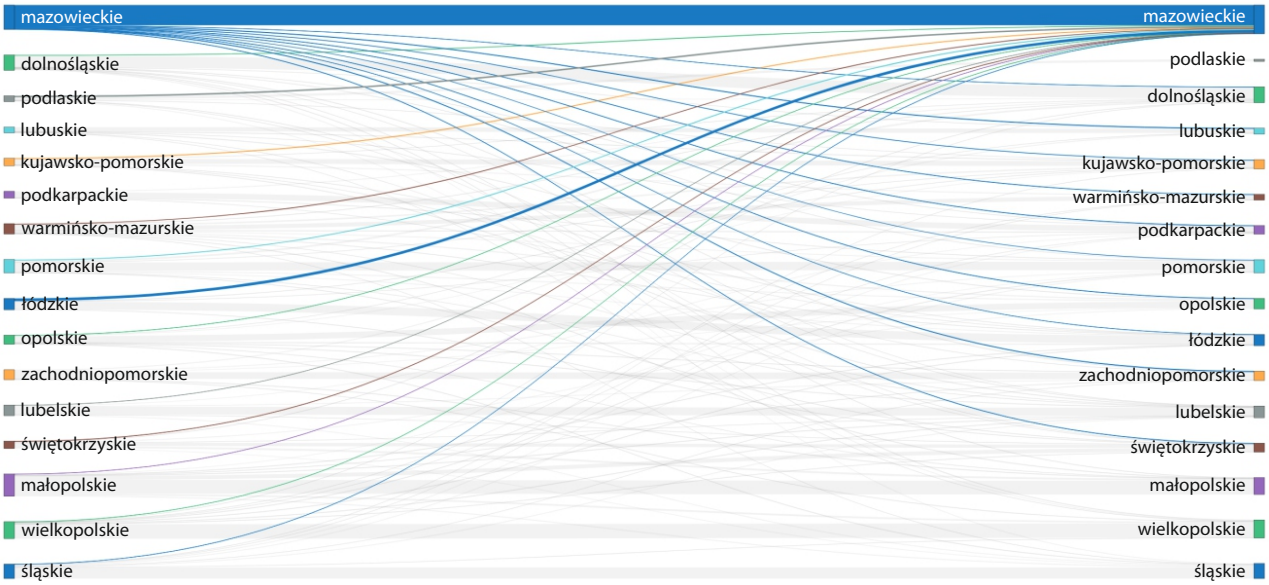
Source: Statistics Poland.

Using integrated data to track refugee mobility

To effectively assess the living and health conditions of refugees, particularly those refugees who lack a permanent residence, it is crucial to continuously monitor the locations where the refugees are living. Because surveys provide only temporal snapshots, integration of the study data with administrative records and big data sources provides a more comprehensive and dynamic understanding of the evolving situations affecting refugees. This approach can facilitate the development of targeted policies to efficiently respond to, and the development and implementation of support mechanisms to better meet, their needs.

Fig. 4 illustrates how the locations of refugees from Ukraine in Poland have changed since the survey was conducted, and highlights Mazowieckie voivodship (province for Poland, for greater readership in Poland, we will be using the term voivodship throughout the report) as the region with the largest concentration of refugees. Of the refugees from Ukraine residing in Poland, 32% moved from one region of Poland to another between the third quarter of 2023 and the first quarter of 2024. In the Mazowieckie and Wielkopolskie voivodships, over 80% of refugees remained in their original locations, and these voivodships had the lowest rates of movement observed. Movement into the Mazowieckie voivodship was primarily from the Łódzkie and Podlaskie voivodships, and the Wielkopolskie voivodship had influxes from the Małopolskie and Podlaskie voivodships. The Podlaskie voivodship experienced the highest outflow of refugees (63%) and was the only voivodship with no recorded inbound movement.

Fig. 4. Changes in the place of residence of refugees from Ukraine in Poland by voivodship (NUTS2)



Note: Information regarding the use of NUTS2 (Nomenclature of Units for Territorial Statistics level 2) is available in *(6)*.
Source: Statistics Poland.

Refugee health status

During the peak of the refugee crisis, providing immediate healthcare alongside essential needs, such as food and shelter, proved challenging for the Polish authorities. With the country's population surging by over 4%, addressing the healthcare requirements of refugees became a pressing priority. The goal was to ensure accessible healthcare at the refugees' current places of residence and identify the barriers limiting, or even preventing, refugees from using healthcare services. Additionally, it was vital to assess the prevalence of immediate health problems – such as cough, diarrhoea and fever – alongside the prevalence of chronic diseases.

The healthcare needs of the refugees in the 30 days prior to the 2022 and 2023 surveys are shown in Fig. 5 by age group and disease type.

Fig. 5. Reported health status[a] of refugees from Ukraine by age group (shown as percentages)

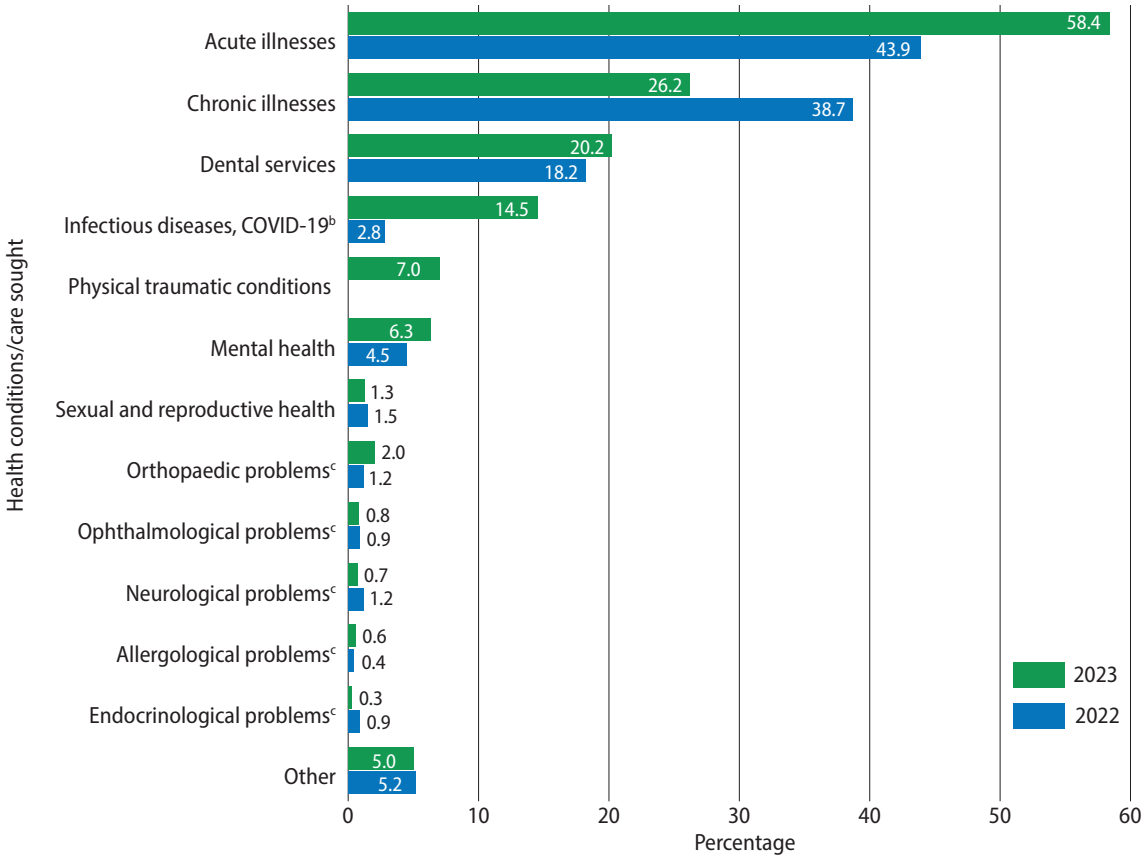
Healthcare need	2022			2023		
	0–17	18–64	≥65 years	0–17	18–64	≥65 years
Acute illnesses	61	33	5	59	36	4
Physical traumatic conditions	–	–	–	69	30	1
Chronic illnesses in total	12	59	30	11	65	24
Cardiovascular diseases	4	53	43	4	65	32
Pulmonary diseases	19	40	41	18	51	32
Diabetes	8	54	38	5	50	45
Renal/kidney diseases	13	55	33	4	82	15
Cancer	7	63	30	2	67	31
Other chronic	16	65	19	16	60	24
Infectious diseases, COVID-19[b]	19	66	15	43	53	4
Mental health	19	66	15	24	65	11
Sexual and reproductive health	–	100	–	3	97	–
Dental services	38	56	6	34	59	6
Other	26	60	14	20	69	11

[a] Refers to people needing healthcare in the 30 days prior to the survey. Respondents could give more than one answer.
[b] In 2022, infectious diseases (hepatitis, HIV, tuberculosis) were a subcategory under chronic diseases; COVID-19 was a separate category. In 2023, infectious disease was defined as a category that included influenza, COVID-19 and other chronic infectious diseases (hepatitis, HIV, tuberculosis).
Note: The darkness of the shading corresponds to higher numbers of survey respondents per age group selecting that condition/response.
Source: Statistics Poland.

In the 2023 survey, the proportion of respondents reporting acute illnesses was 14.5 percentage points greater compared with the 2022 survey. Even though the prevalence of chronic illness was 12.5 percentage points lower, the proportion of people aged 18–64 years old reporting a chronic illness was 6 percentage points greater in 2023 compared with 2022 (Fig. 5). Of all the chronic conditions reported, the most alarming trend was a substantial increase in the proportion of people of the 18–64-year-old age group among all people reporting renal/kidney disease, which increased from 55% to 82% between 2022 and 2023. The second largest increase after renal/kidney disease was in people reporting cardiovascular diseases, for which the proportion of the 18–64-year-old age group among those declaring cardiovascular diseases increased from 53% to 65%. The physical traumatic conditions category (e.g. injuries, burns, wounds, etc.), which was included in the 2023 survey but not the 2022 survey, were reported by 7% of respondents (Fig. 6). No major differences were found in the reporting of other health conditions between 2022 and 2023.

Regarding sexual health, the proportion of the 18–64-year-old age group among those reporting a need for sexual health services was similar (97% in 2023 and 100% in 2022), underscoring the continued importance of ensuring access to and awareness of these services for the refugee population. There was a slight increase in the proportion of people aged under 18 years reporting a need for sexual health services in 2023. This underscores the importance of providing age-appropriate sexual health education and services to all age groups within the refugee population.

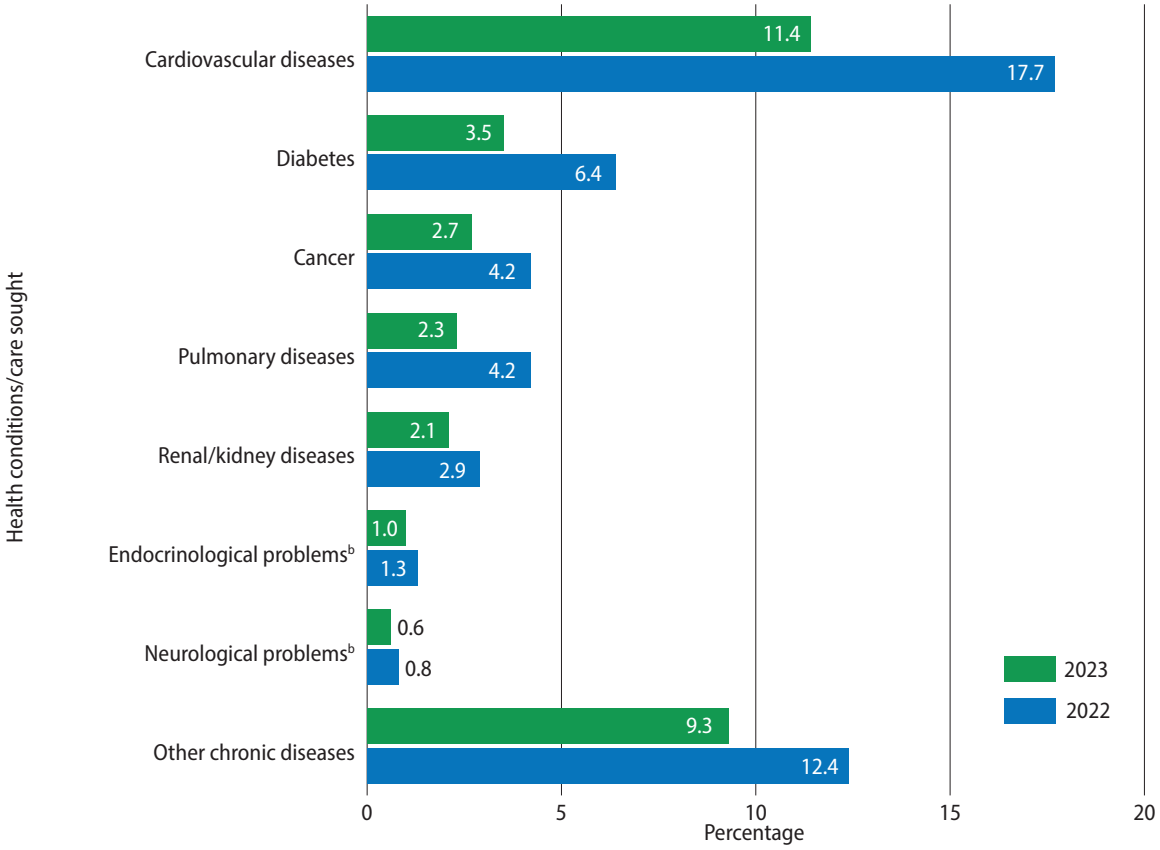
Fig. 6. Refugees' health conditions and care sought[a]



[a] Refers to people needing healthcare in the 30 days prior to the survey. Respondents could give more than one answer.
[b] In 2022, infectious diseases (hepatitis, HIV, tuberculosis) were a subcategory under chronic diseases; COVID-19 was a separate category. In 2023, infectious disease was defined as a category that included influenza, COVID-19 and other chronic infectious diseases (hepatitis, HIV, tuberculosis).
[c] Most frequent responses from the "other" category.
Source: Statistics Poland.

The refugees who were surveyed in 2023 indicated healthcare needs relating to cardiovascular diseases, diabetes, cancer and pulmonary diseases. A significant proportion of refugees indicated needs relating to endocrinological or neurological care under the category of "other chronic illnesses". The actual prevalence of individuals with these conditions might be higher than reported, as some respondents who selected "other chronic illnesses" did not specify their particular health issues (Fig. 7).

Fig. 7. Refugees' health conditions and care sought for chronic illness[a]



[a] Refers to people needing healthcare in the 30 days prior to the survey. Respondents could give more than one answer.
[b] Most frequent responses from the "other chronic diseases" category.
Source: Statistics Poland.

Refugee healthcare needs

In 2023, the proportion of refugees reporting healthcare needs in the 30 days preceding the survey being conducted was 12.1 percentage points greater (49.3%) than in 2022 (37.2%) (Fig. 8).

Fig. 8. Need for healthcare in the 30 days prior to the survey

Source: Statistics Poland.

The demand for healthcare in all age groups was higher in 2023 than in 2022 (Fig. 9). In 2023, the ≥ 65-year-old age group continued to be the demographic with the greatest demand for healthcare, with a slight increase in reported healthcare needs from 71.6% in 2022 to 77.2% in 2023. The proportion of children with healthcare needs remained higher than that of adults aged <65 years, and the proportion of children needing healthcare increased significantly (by 22.2 percentage points) from 36.4% in 2022 to 58.6% in 2023.

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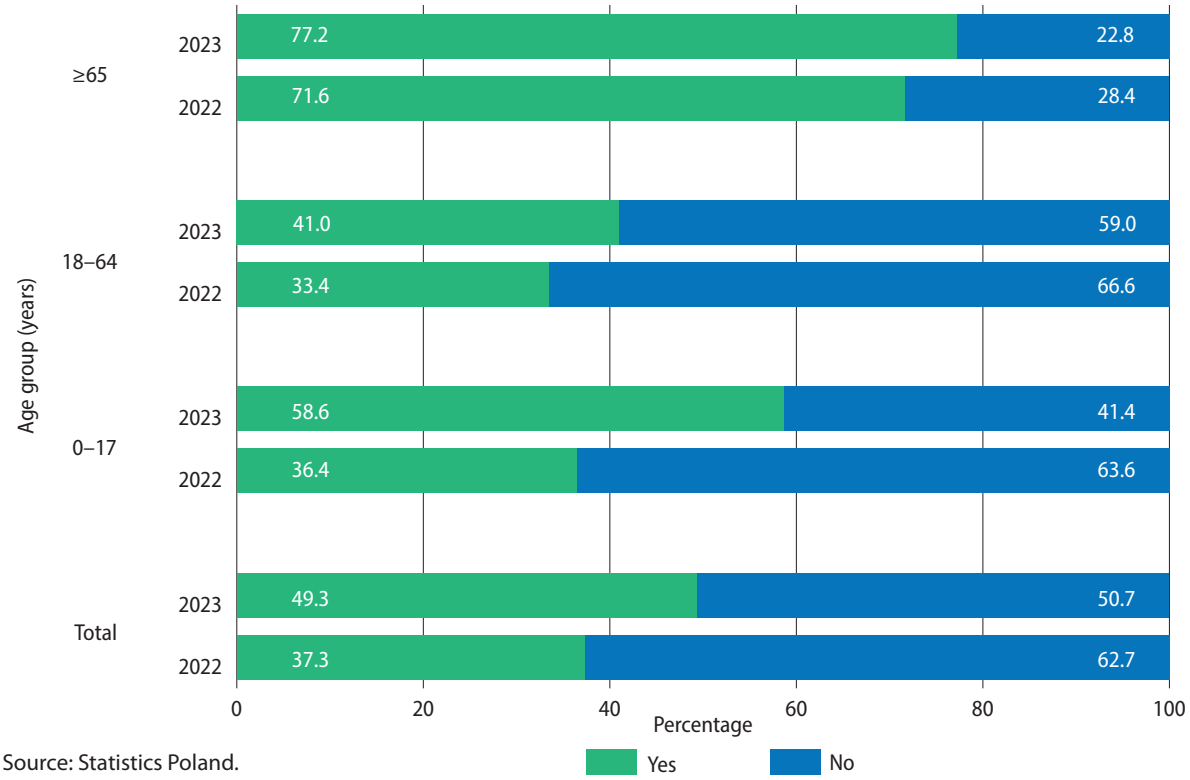
Fig. 9. Need for healthcare by age group



Source: Statistics Poland.

There were not many differences between the surveys in refugees' reported healthcare needs or in the behavioural insights research carried out in 2022 and 2023. Older adults (aged ≥65 years) encountered several barriers in accessing healthcare, including limitations in communication and their abilities to use technology, such as websites and mobile apps. As is often observed in this age group, their health issues often required specialist or long-term care, which resulted in higher associated costs.

In the 2023 behavioural insights research, refugees from Ukraine reported having had direct experiences of using healthcare services, which had given them a better understanding of the Polish health system. Some respondents mentioned travelling to Ukraine for medical assistance, often to areas near the border with Poland. Perceptions of the healthcare system in Poland varied, with some respondents mentioning a high level of satisfaction with the quality of services and others noting frustrations about the lack of timely access to specialist and urgent care. Some refugees, especially those who were not fluent in Polish, expressed greater trust in Ukrainian doctors.

Regarding preventive and treatment needs, respondents expressed needs for services including routine vaccinations and health checks, and consultations with specialist doctors (particularly gynaecologists and ophthalmologists). Respondents also highlighted ongoing needs for medical services from specialists, including cardiologists, endocrinologists, gastroenterologists, gynaecologists, neurologists, ophthalmologists and psychiatrists. Respondents also needed access to laboratory and medical tests.

Refugees with teenagers reported needs for psychiatrists and psychologists. However, for older adults (aged ≥50 years), stigma and cultural factors appeared to discourage them from seeking mental healthcare.

Some respondents also reported needing treatment or care, such as rehabilitation, for chronic illness (cancer, diabetes, disability), dental services, and medications for chronic illnesses (allergies, cancer, cardiovascular diseases, diabetes) and other conditions.

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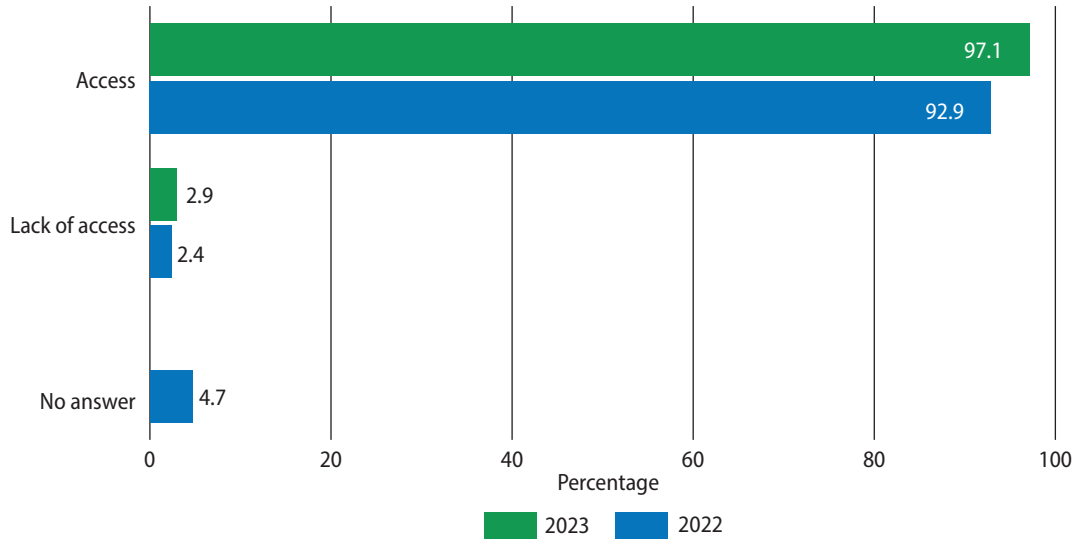
Access to healthcare

The proportion of respondents who reported accessing healthcare in the 30 days prior to the survey increased from 92.9% in 2022 to 97.1% in 2023 (Fig. 10). In the 2023 behavioural insights research, most respondents reported gaining a better understanding of the Polish health system since their arrival in the country.

Fig. 10. Access to healthcare[a]



[a] Refers to people needing healthcare in the 30 days prior to the survey.

Source: Statistics Poland.

In 2023, the majority of behavioural insights research respondents reported that access to health services in Poland was convenient. However, only a few respondents had received written or verbal information about the services available, with this information primarily coming from physicians, the Red Cross, SMS, Telegram or a mobile app to check patient information.

Behavioural insights research respondents acknowledged both strengths and weaknesses in the healthcare system for refugees from Ukraine, noting that their experiences often depended on the doctors' attitudes and the type of resources available at facilities. In large cities, respondents noted that hospitals had more resources with which to provide medical care.

Healthcare provision for children living with respondents was rated highly, with respondents who sought healthcare for their children receiving it, either in part or in full.

Quality of healthcare

The behavioural insights research reaffirmed the 2022 findings that, despite challenges in accessing care, refugees from Ukraine generally viewed the Polish healthcare system positively. The refugees expressed satisfaction with the care provided by nurses and doctors, and emphasized the helpful and empathetic attitudes they experienced. Healthcare workers were perceived as attentive to their specific needs, financial constraints and language barriers.

> *"When I arrived and was registered at the hospital as a kidney patient, I was assigned a doctor from the hemodialysis department, and she immediately wrote out a referral for examination, for tests – I have constant support from her."*
>
> *Male, Mielec, 25 years old*

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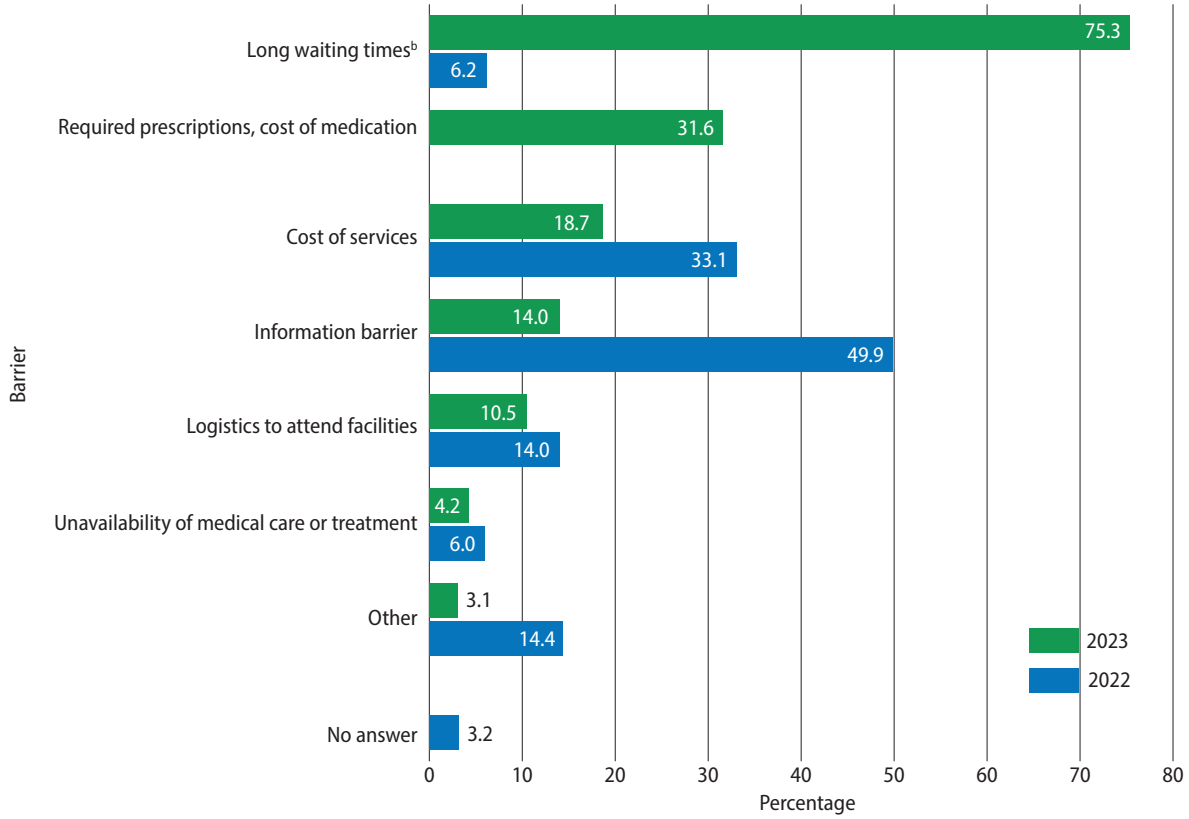
Barriers to accessing healthcare

Of the refugees who shared their experiences with healthcare and any barriers encountered in the survey, some cited challenges in accessing healthcare (Fig. 11). Despite the reported barriers, it was encouraging to find that most respondents were ultimately able to access healthcare services.

Fig. 11. Barriers to accessing healthcare[a]



[a] Refers to people needing healthcare in the 30 days prior to the survey. Respondents could give more than one answer.
[b] In 2022, the most frequent responses from the "other" category; in 2023, a separate category.
Source: Statistics Poland.

The 2023 survey identified long waiting times as the most frequent obstacle to accessing healthcare, with 75.3% of respondents who reported difficulties citing this issue. This represents a dramatic increase from the 6.2% reported in the 2022 data (Fig. 11). A plausible explanation for the rise might be the increased use of public health services and the specialist care required by refugees as they continue to reside in Poland. Long waiting times is a problem that also affects Polish citizens.

"I evaluate positively the contact with doctors and medical staff, but unfortunately the only thing that isn't so good is the very long queues to specialists, as sometimes you have to wait several months for an appointment, and there are accidents when you need a quick consultation."

Female, Rzeszow, 32 years old

In the 2022 survey, limited information access (that is, lack of information, language barriers and cultural barriers) was the barrier to healthcare most often cited by refugees, with 49.9% of respondents mentioning this issue. In 2023, long waiting times was the most often mentioned barrier to access (reported by 75.3% of refugees), with information access only mentioned by 14.0% of 2023 survey respondents.

"We've already been three times to register with a surgeon, but we discovered the waiting list is until 2026. This is a problem because we can't wait that long. The Polish family I work for is now helping us get an earlier appointment."

Female, Krakow, 40 years old

The barriers to accessing healthcare identified in the behavioural insights research were largely consistent between 2022 and 2023, and included long waiting times to see physicians, particularly specialists. These issues are significant challenges affecting both refugees and the host population in Poland.

Reports of logistical barriers (transportation, distance) decreased slightly, from 14.0% in the 2022 survey to 10.5% in the 2023 survey. While these barriers persist, this positive shift is encouraging.

"After two years in Poland, we already have enough information regarding medical services, we can even call and get a teleadvice without any problem."

Female, Opole, 42 years old

Despite the ongoing challenges, only 4.2% of refugees reported unavailability of medical care or treatment in the 2023 survey, a decrease from 6.0% in 2022. This downward trend suggests that most refugees were able to access healthcare services. While these data must be interpreted with caution, they may indicate the success of health measures implemented in Poland. Further research or monitoring is needed to confirm this trend and understand the underlying factors.

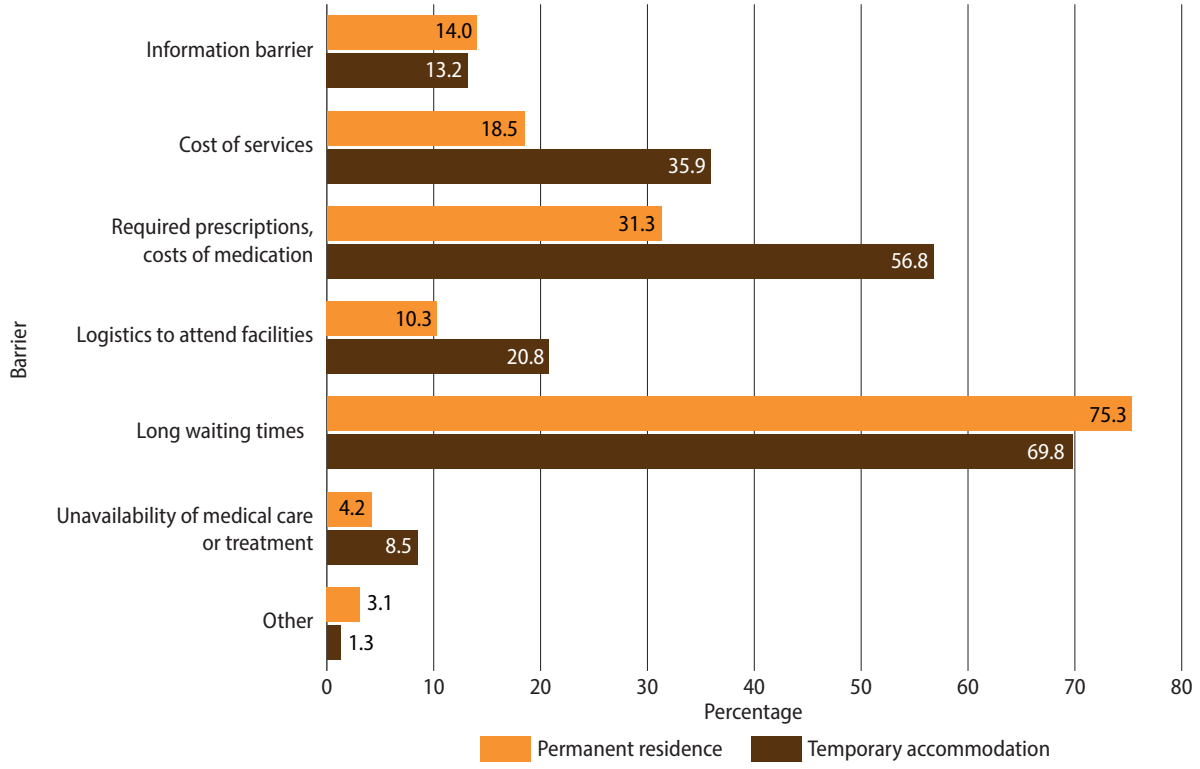
Some refugees participating in the behavioural insights research, especially those less fluent in Polish, reported feeling more comfortable and secure when interacting with healthcare practitioners from Ukraine, or with those who spoke their language and had the same cultural background. This enabled these people to feel that their medical concerns were clearly understood, and suggests that cultural considerations extend beyond language barriers to encompass shared cultural understanding and familiarity.

In the behavioural interviews, many refugees from Ukraine expressed frustration after discovering that some non-prescription medicines in Ukraine required prescriptions in Poland, leading some to visit Ukraine to purchase these medicines.

Inequality lens: disparities in barriers to healthcare access between refugees living in temporary and permanent accommodation

Detailed analysis of the situation among refugees living in temporary accommodation[3] and refugees living in permanent residences[4] showed variation in the barriers to accessing healthcare for refugees in different types of accommodation. For both groups, the most frequently indicated difficulty was long waiting times. However, refugees living in temporary accommodation were more likely to cite issues with requiring prescriptions for medications and the high costs of medicines and services as barriers than refugees in permanent residences (Fig. 12).

Fig. 12. Barriers to accessing healthcare[a] by type of refugee accommodation



[a] Refers to people needing healthcare in the 30 days prior to the survey. Respondents could give more than one answer.
Source: Statistics Poland.

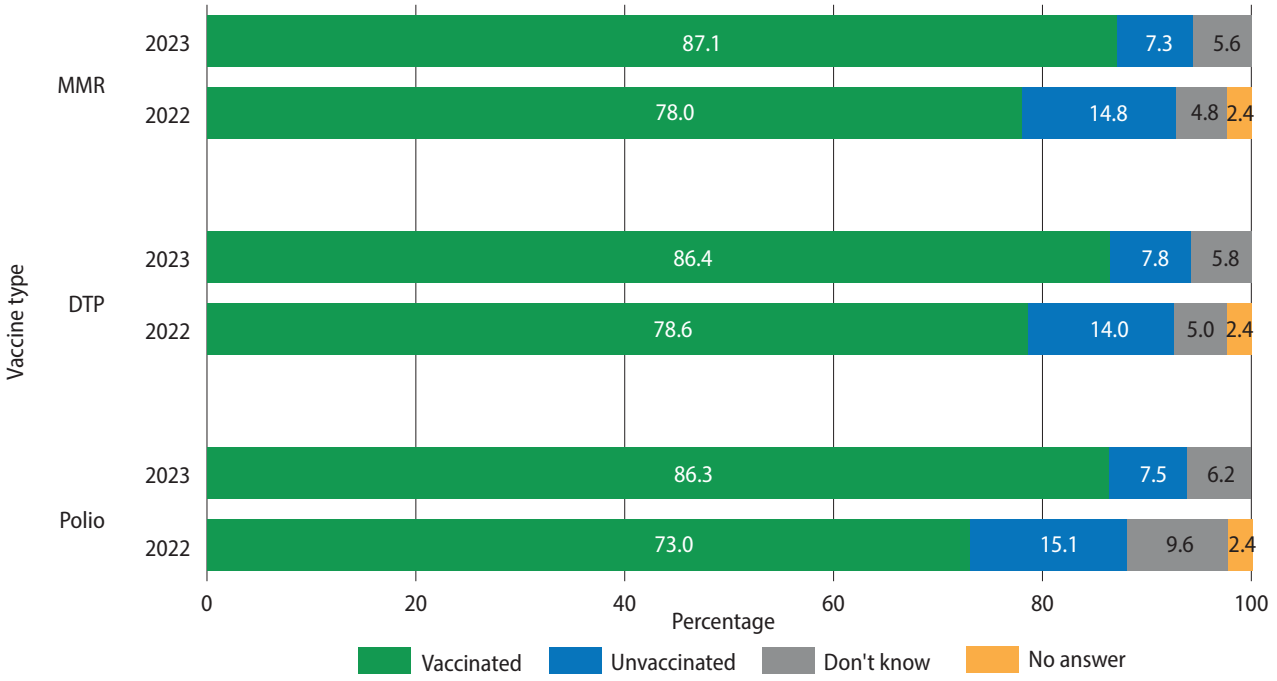
3 Temporary accommodation includes refugees staying in accommodation establishments, such as hotels, dormitories and boarding schools.
4 Permanent residence includes households living on their own, or rented accommodation or in accommodation provided by family, friends, etc.

Disease prevention and vaccinations

Vaccination of children aged 1–4 years

In the 2023 survey, over 86% of refugee children aged 1–4 years were declared as having been vaccinated against polio and DTP, while 87.1% were declared as having been vaccinated against MMR (Fig. 13). An increase in the proportion of children who had received these vaccinations was noted in the 2023 survey compared with the results of the 2022 survey: the greatest increase was in the proportion of children vaccinated against polio, up by 13.3 percentage points, while the proportions of children vaccinated against MMR and DTP increased by 9.1 and 7.8 percentage points, respectively. The percentage of unvaccinated children decreased by around 50%. Approximately 6% of parents were not aware of their child's vaccination status for a particular vaccine.

Fig. 13. Declared vaccination status of children aged 1–4 years



Note: DTP = diphtheria, tetanus, pertussis/whooping cough; MMR = measles, mumps and rubella; Polio = poliomyelitis.
Source: Statistics Poland.

For all three types of vaccines (DTP, MMR and polio), the vaccination coverage in Ukraine was lower than in Poland. According to WHO data for 2022, the DTP vaccination coverage (third dose) in Ukraine was 73%; while in Poland: 94%. In Ukraine in 2022, polio vaccination coverage (third dose) had decreased by 9 percentage points (from 78% in 2021 to 69%).

There was a notable difference in the reported uptake of MMR vaccination (second dose) between the refugees vaccinated in Ukraine (69% of children) and the general population in Poland (86%) *(4)*.

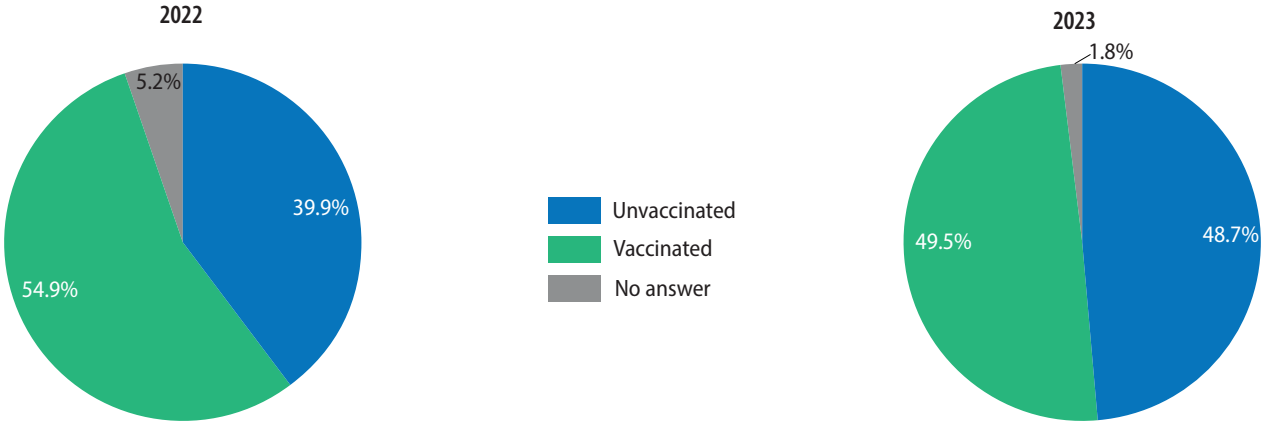
Measles is extremely contagious and can therefore spread very quickly once introduced into a community; however, although dangerous, it is entirely preventable by vaccination. Population immunity needs to be at least 95% to prevent the spread of measles following exposure to the virus. It is essential that urgent efforts are made to catch up on missed MMR vaccination doses and attain the optimal coverage to stop transmission and prevent outbreaks. Identification of vulnerable groups and communities, and better understanding of the specific barriers faced by unvaccinated and undervaccinated populations, will be critical to ensure the provision of locally tailored immunization programme policies and strategies. While immunization against measles presents an immediate priority, it is also essential that missed doses of other vaccines included in Poland's national routine immunization programme are addressed.

Vaccination against COVID-19

The emergency phase of COVID-19 is now over, and safe and effective vaccines are helping to reduce the risk of COVID-19 infection resulting in severe disease or death. Although the government lifted the state of epidemic threat in Poland on 1 July 2023, the COVID-19 vaccination programme has remained in effect, resulting in a total of 58,573,223 COVID-19 vaccine doses having been administered by 3 June 2024. In Poland, 61% of the population have received at least one dose of COVID-19 vaccine, but only 37% of the population in Ukraine have done so (as of 31 December 2023) *(4)*.

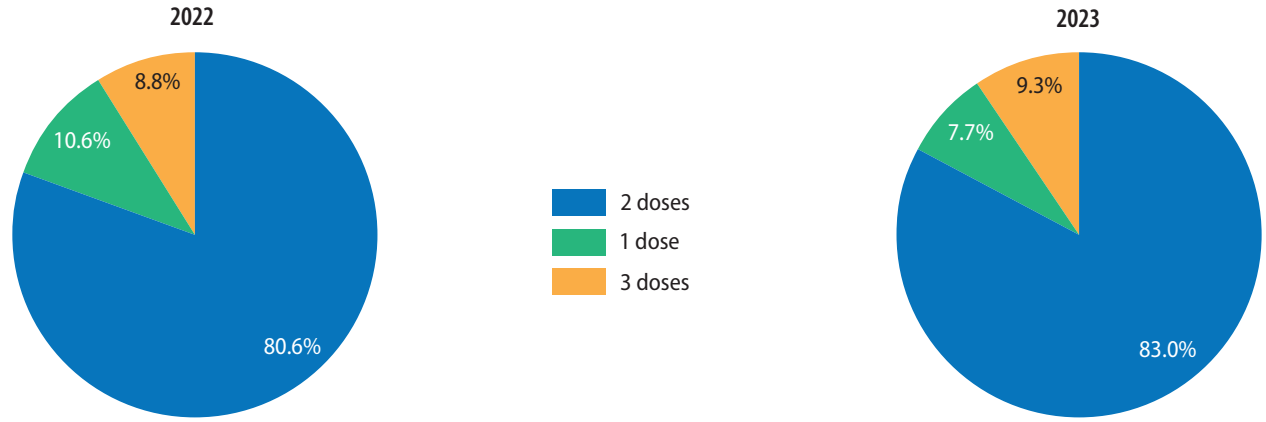
Almost one half of the adult refugee population reported being vaccinated against COVID-19 in 2023 (Fig. 14). Of those vaccinated, 92.3% reported receiving at least two doses of the vaccine (Fig. 15). Declared COVID-19 vaccination coverage decreased in all age groups between 2022 and 2023 (Fig. 16).

Fig. 14. Declared COVID-19 vaccination status of adult refugees from Ukraine



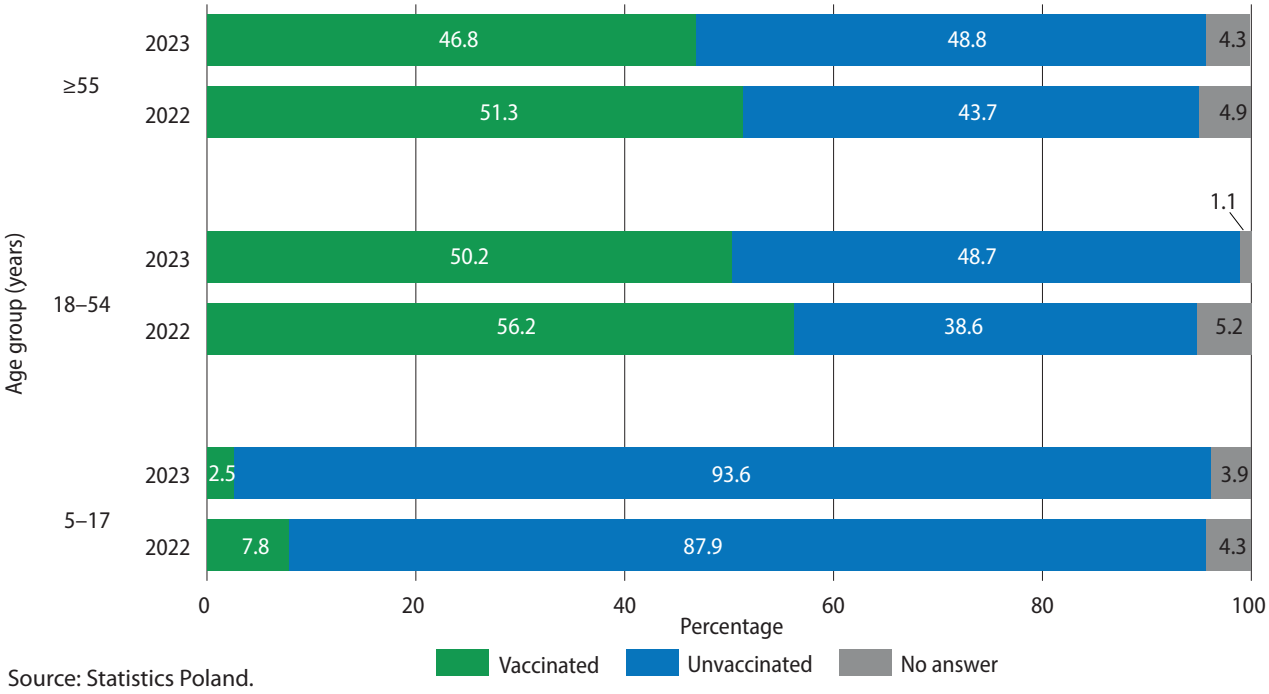
Source: Statistics Poland.

Fig. 15. Declared number of COVID-19 vaccine doses received by adult refugees from Ukraine



Source: Statistics Poland.

Fig. 16. Declared COVID-19 vaccination status of refugees from Ukraine by age group



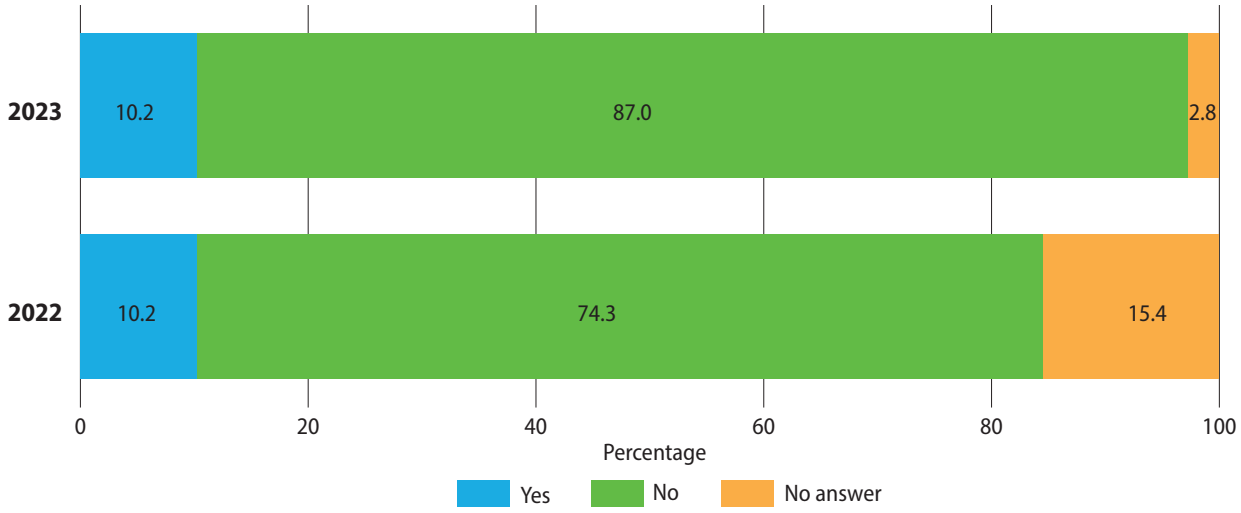
Source: Statistics Poland.

Mental health

Ukrainian populations have been placed under immense pressure since the start of the war in Ukraine, with no end in sight. In the 2023 survey, 10.2% of respondents reported experiencing emotions and stress that interfered with daily life (Fig. 17), matching the proportion in the 2022 survey. In 2023, 87.0% of respondents indicated that no one in their household was currently experiencing disruptive levels of upset or anxiety, an increase since 2022 when 74.3% of respondents made the same assertion.

The number of people who did not respond to the question "Is there anyone in your household currently so upset and anxious that it affects the person's daily functioning?" decreased substantially from 15.4% in 2022 to 2.8% in 2023. Despite a higher response rate to questions about mental health and psychosocial support (MHPSS), most respondents continued to report no perceived need for these services.

Fig. 17. Responses to "Is there anyone in your household currently so upset and anxious that it affects the person's daily functioning?"



Source: Statistics Poland.

The qualitative data from the behavioural insights research provided information on mental health service use and awareness. Some of the respondents had used these services. Respondents rarely indicated a need for counselling or medication when asked about their treatment needs, primarily due to a perceived lack of need, and possibly due to cultural factors or a reluctance to acknowledge the need for therapy. Furthermore, awareness of available MHPSS services remained low, with only one third of participants reporting knowledge of such services. Additionally, a high proportion of respondents chose not to answer these questions in the in-depth interviews, suggesting a reluctance to discuss mental health issues.

Some of the refugees with children, particularly those with teenagers, demonstrated a high level of understanding of the importance of mental health, recognizing the link between mental and physical health and the value of seeking psychological support.

There remains a possibility that mental health needs are still being underreported, with only 10.2% of respondents affirming a need for services. This figure may not fully reflect the actual prevalence of mental health needs given the presence of well-known factors, such as under-recognition of mental health issues, as strongly suggested by the behavioural findings. Other explanations include fear of stigma, limited psychological literacy and ongoing insecurity. The in-depth interviews conducted during the behavioural insights research revealed that many respondents held a negative perception of, or a limited understanding of, what MHPSS is. WHO has estimated that the prevalence of mental health conditions (anxiety, bipolar disorder, depression, post-traumatic stress disorder and schizophrenia) in conflict-affected populations is 22.1% (95% uncertainty interval [UI] 18.8–25.7%) at any point in time. The mean comorbidity-adjusted, age-standardized point prevalence for severe conditions (bipolar disorder, schizophrenia, severe anxiety, severe depression and severe post-traumatic stress disorder) is 5.1% (95% UI 4.0–6.5%) *(7)*.

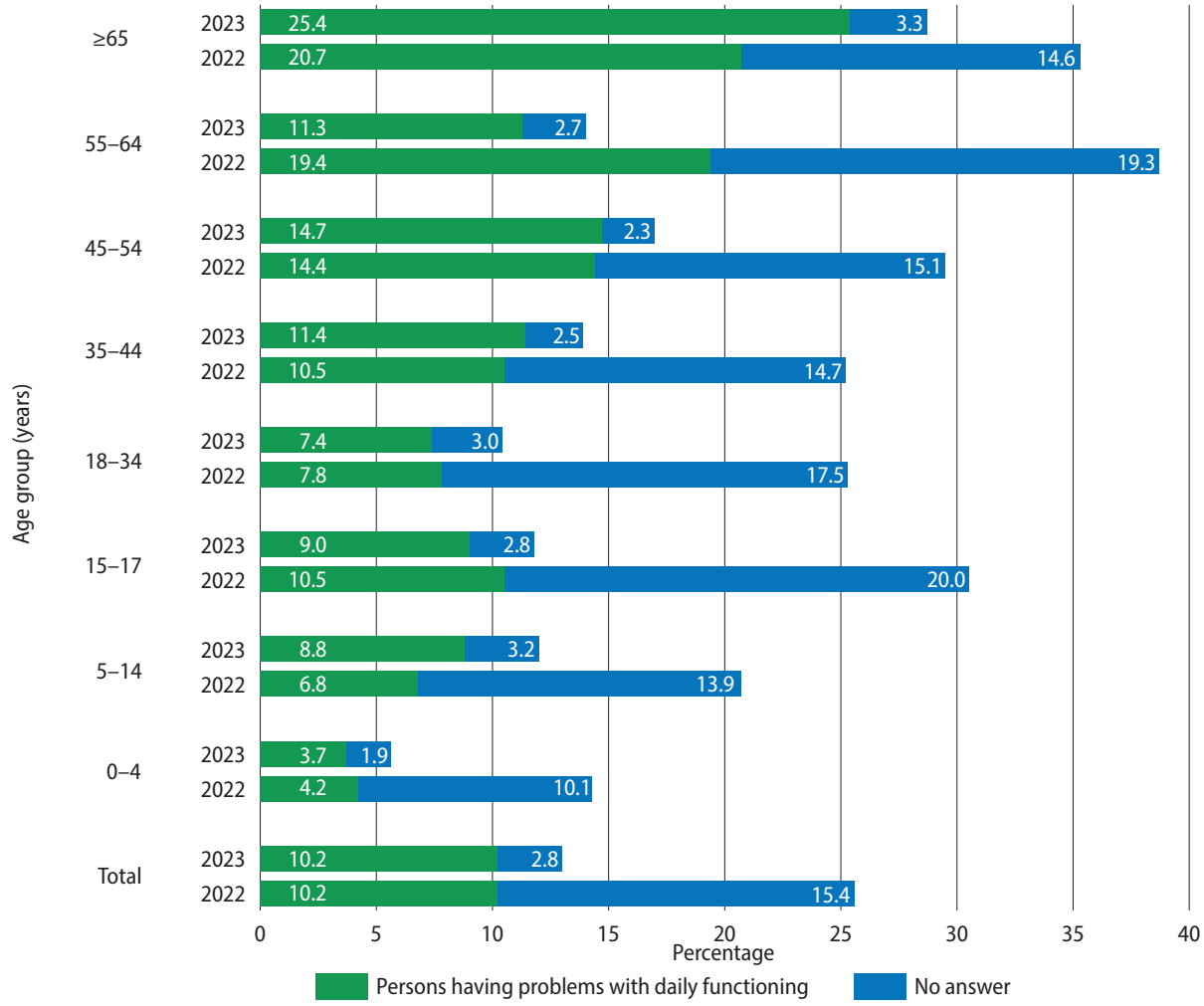
The 2023 survey showed that refugees aged ≥65 years were disproportionately affected by mental health challenges when trying to perform daily activities (Fig. 18), with the proportion of this age group reporting this issue increasing from 20.7% in 2022 to 25.4% in 2023.

> *"The most important thing is mental health, because I know that there are a lot of people who, despite the problems, don't go to the doctors, because of the language barrier, long waiting times and lack of information, and this creates diseases that are hard to cure later."*
>
> *Female, Katowice, 34 years old*

The proportion of people reporting such difficulties in the 55–64-year-old age group decreased from 19.4% in 2022 to 11.3% in 2023. These findings highlight the continuing need for MHPSS targeting older adult refugees, while ensuring that no age group is excluded from receiving such services. The increase in the proportion of 5–14-year-olds reporting feelings of upset or anxiety (8.8% in 2023 versus 6.8% in 2022) highlights the need for specialist mental health support for children during this formative period.

The 2023 quantitative survey showed a slight increase in the percentage of refugees seeking mental health support, with the proportion of respondents increasing from 4.5% in 2022 to 6.3% in 2023 (Fig. 6). The 2023 survey also showed that 73.7% of respondents had used free medical care for mental health services, while 26.3% had incurred patient-borne costs. This reliance on out-of-pocket expenses might have hindered access to mental healthcare for some refugees.

Fig. 18. Persons having problems with daily functioning due to mental health problems by age group



Source: Statistics Poland.

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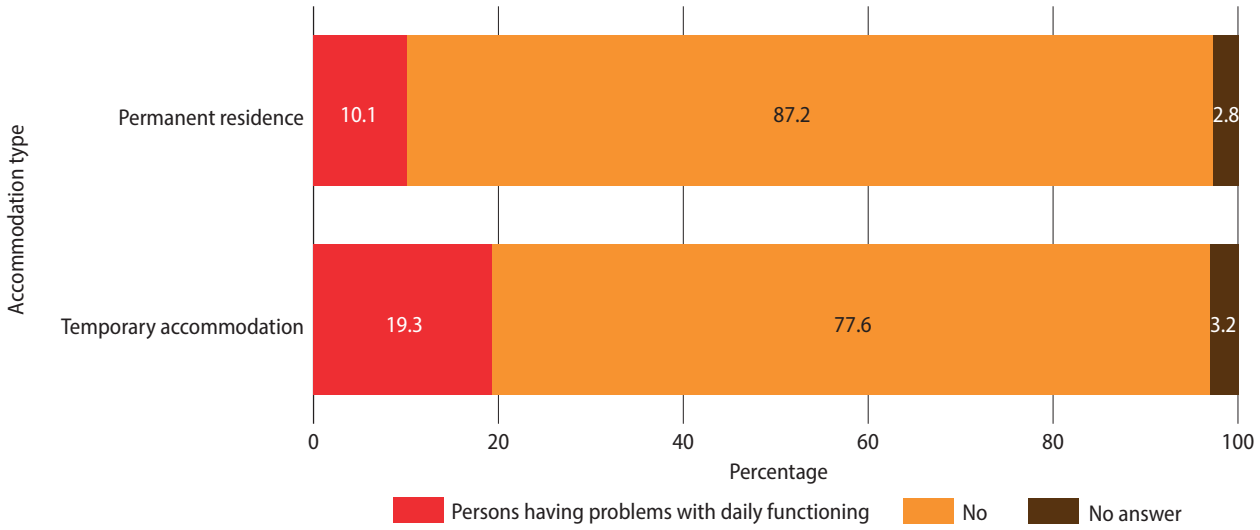
Inequality lens: mental health disparities between refugees living in temporary and permanent accommodation

Comparison of refugees living in temporary accommodation with those living in permanent accommodation showed that a significantly greater proportion of refugees living in temporary accommodation reported difficulties with daily functioning due to mental health problems (19.3% versus 10.1%, respectively) (Fig. 19).

"We contacted a psychologist in Ukraine online. I did it anyway, because it was necessary for the children. They were having difficulties at school, adjusting to all these changes. To help them, I applied to the project, and we had an opportunity to work with a child psychologist. Overall, I'm basically satisfied. The children spoke with the specialist in Ukrainian."

Female, Tychy, 34 years old

Fig. 19. Persons having problems with daily functioning due to mental health problems by type of refugee accommodation



Source: Statistics Poland.

Health literacy

Limited health literacy – defined as the ability to find, understand and use health information – can be a significant barrier to accessing healthcare for refugees from Ukraine. Refugees may struggle to comprehend written materials due to language barriers, cultural appropriateness, or information being inaccessible due to its location or format (e.g. complex websites). This can limit their ability to make informed decisions about their health, potentially leading to poorer health outcomes.

"We have both Ukrainian-speaking and Polish-speaking doctors in our private hospital. Therefore, it is very convenient for us. We're fine with everything."

Female, Siedlce, 40 years old

The behavioural insights research interviews with refugees highlighted the crucial role of translators, especially when they arrived in Poland. However, as previously noted, many of the refugees had become more proficient in using the Polish language over time and had become able to communicate effectively with healthcare providers. Others continued to rely on interpreters or to seek Ukrainian-speaking doctors. Some older individuals, people with disabilities, and those with limited Polish or English proficiency reported challenges navigating the healthcare system, and often needed more appropriate and accessible information.

"The language barrier was overcome more or less."

Female, Gdańsk, 30 years old

Respondents reported that they relied on multiple sources of information as their primary means to learn about the Polish health system, including healthcare providers, official websites, personal networks and social media. They signalled that the most trusted source of information was fellow refugees' experiences, shared in person or through social media.

"Two days a week we can make appointments with Ukrainian doctors."

Male, Żory, 30 years old

While some respondents expressed satisfaction with official websites, there is also an opportunity for their refinement because other refugees expressed a gap between the information on official websites and the practical application of this information, in that they continued to experience challenges in navigating healthcare systems despite an abundance of online resources.

Disability

Despite the extended time period that many refugees had spent in Poland, accessing healthcare remained a challenge for certain populations. While out-of-pocket expenditures on medications and some specialist services were a barrier for accessing care, some people with disabilities may have faced additional burdens due to the added costs of specific services, such as caregiving services.

Those who qualified for disability certificates benefited from shorter waiting times for appointments and free treatment, but refugees who did not have certificates faced obstacles in obtaining care.

> *"I have difficulty understanding medical terminology when communicating with doctors. However, I don't experience any other difficulties. I have a disability group assigned in Poland, therefore also don't have to wait in queues for medical attention."*
>
> *Male, Mielec, 25 years old*

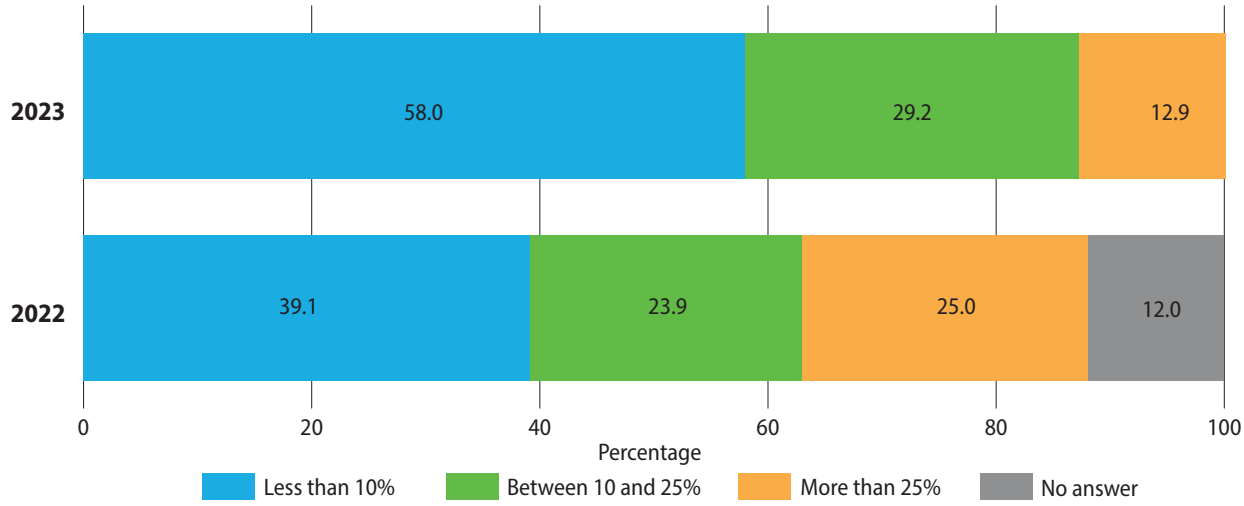
Some respondents reported obtaining their disability certificates and receiving expedited services for their specific health conditions, indicating that the healthcare system was responsive to their needs. In particular, refugees with urgent conditions or disabilities benefited from the Polish healthcare system by receiving free access to operations and treatments that were often expensive, or difficult to obtain, in Ukraine.

Based on the behavioural insights research interviews, several key actions have emerged that can address gaps in healthcare for vulnerable populations, such as enhancing services for children with disabilities, simplifying and expediting disability certificate processes, providing financial support and mental health resources for caregivers, prioritizing cross-sectoral collaboration, and empowering and funding local organizations for people living with disabilities.

Healthcare costs

Between the surveys being conducted in 2022 and 2023, there was a clear reduction in the proportion of income or savings that refugees were having to spend on out-of-pocket expenses for healthcare. The percentage of refugees spending more than 25% of their income or savings on healthcare in 2023 was almost half that in 2022 (Fig. 20).

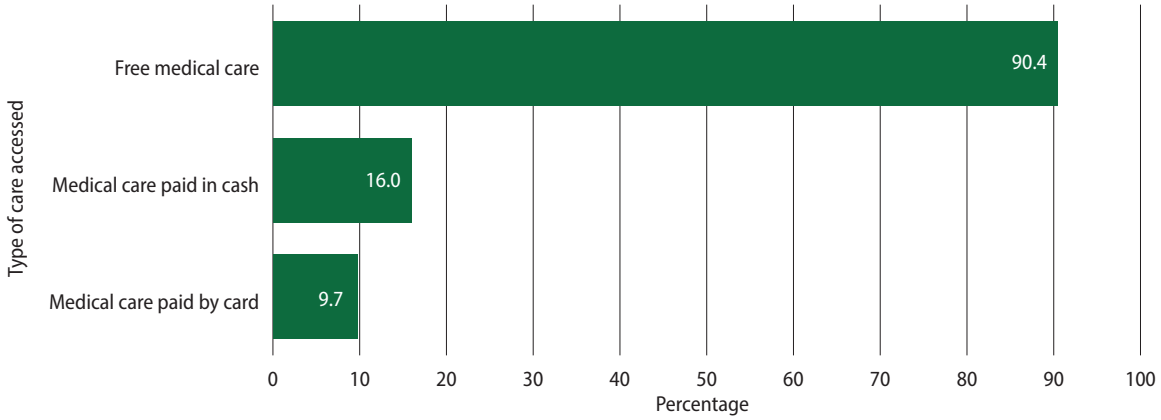
Fig. 20. Share of refugees' income/savings spent on healthcare costs[a]



[a] Refers to people needing healthcare in the 30 days prior to the survey.
Source: Statistics Poland.

The 2023 survey also showed that 90.4% of people who needed healthcare in the 30 days prior to the survey were able to access free medical care, while 16.0% and 9.7% of respondents had paid for services via cash and card payments, respectively (Fig. 21).

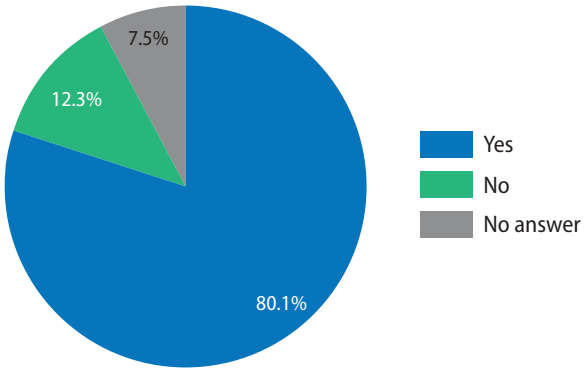
Fig. 21. Type of healthcare services accessed in 2023[a]



[a] Refers to people needing healthcare in the 30 days prior to the survey. Respondents could give more than one answer.
Source: Statistics Poland.

Of the respondents who needed healthcare in the 30 days prior to the 2023 survey, 80.1% indicated they needed to acquire a medicine. The behavioural insights research further suggested that the refugees had to purchase these medicines themselves (Fig. 22).

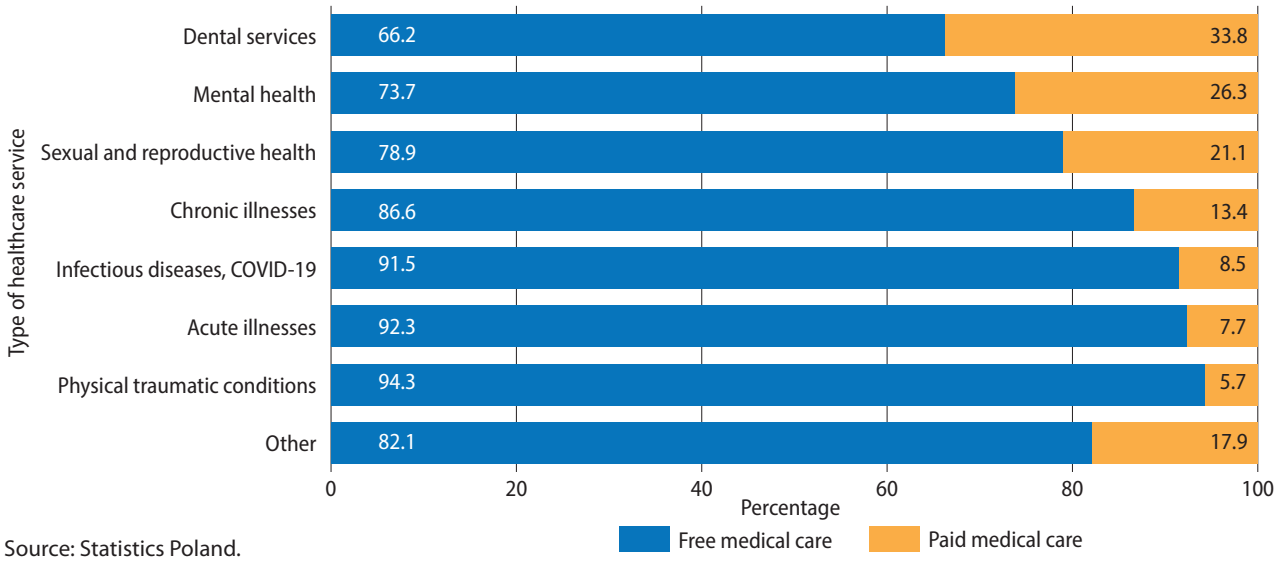
Fig. 22. Need of acquiring medicine in 2023[a]



[a] Refers to people needing healthcare in the 30 days prior to the survey.
Source: Statistics Poland.

The quantitative survey data for the types of healthcare services that refugees from Ukraine sought in 2023 were plotted against whether these services were free or had to be procured by the refugees as out-of-pocket expenses (Fig. 23). The majority of the respondents used free medical care, but this was dependent on the type of care needed. Consequently, the highest percentage of people who used paid medical care was dental (33.8%), mental (26.3%) and sexual healthcare services (21.1%). The data show that the lowest proportion of people who used paid medical care was for physical traumatic conditions (5.7%).

Fig. 23. Type of free and paid healthcare services accessed in 2023

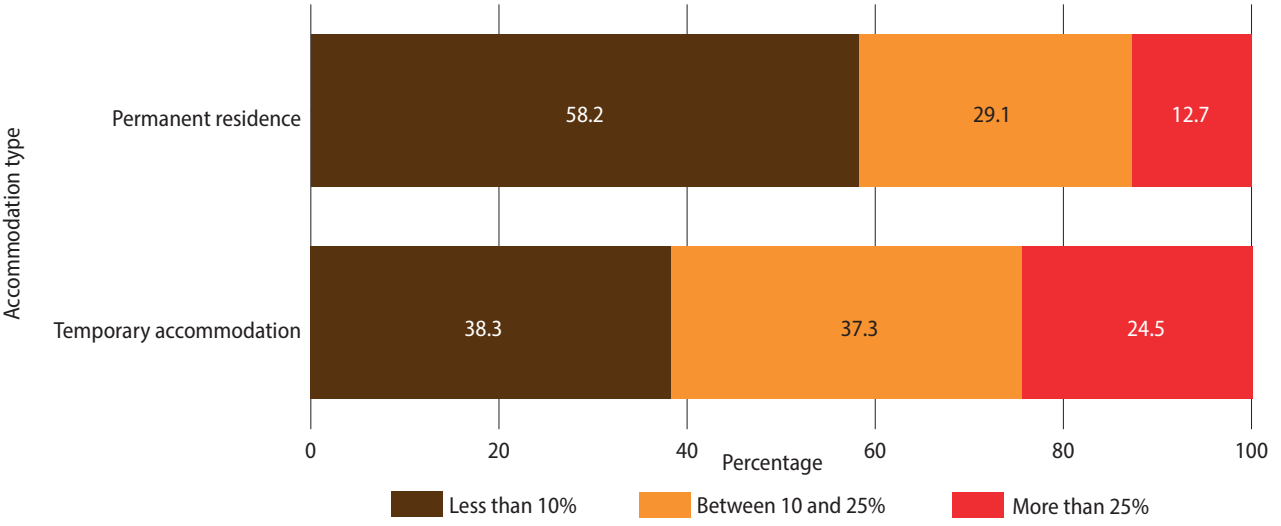


Source: Statistics Poland.

Inequality lens: disparities in the financial burden of healthcare between refugees living in temporary and permanent accommodation

Fig. 24 shows the relative financial healthcare burdens of, and disparities in, out-of-pocket spending of refugees living in temporary and permanent accommodation. Refugees living in temporary accommodation spent a significantly higher proportion of their income or savings on healthcare than those in permanent residences. The proportion of refugees in temporary accommodation spending more than 25% of their income or savings on healthcare was almost twice as high as that of refugees in permanent accommodation (24.5% and 12.7%, respectively).

Fig. 24. Share of income/savings spent on healthcare costs by type of refugee accommodation[a]



[a] Refers to people needing healthcare in the 30 days prior to the survey.
Source: Statistics Poland.

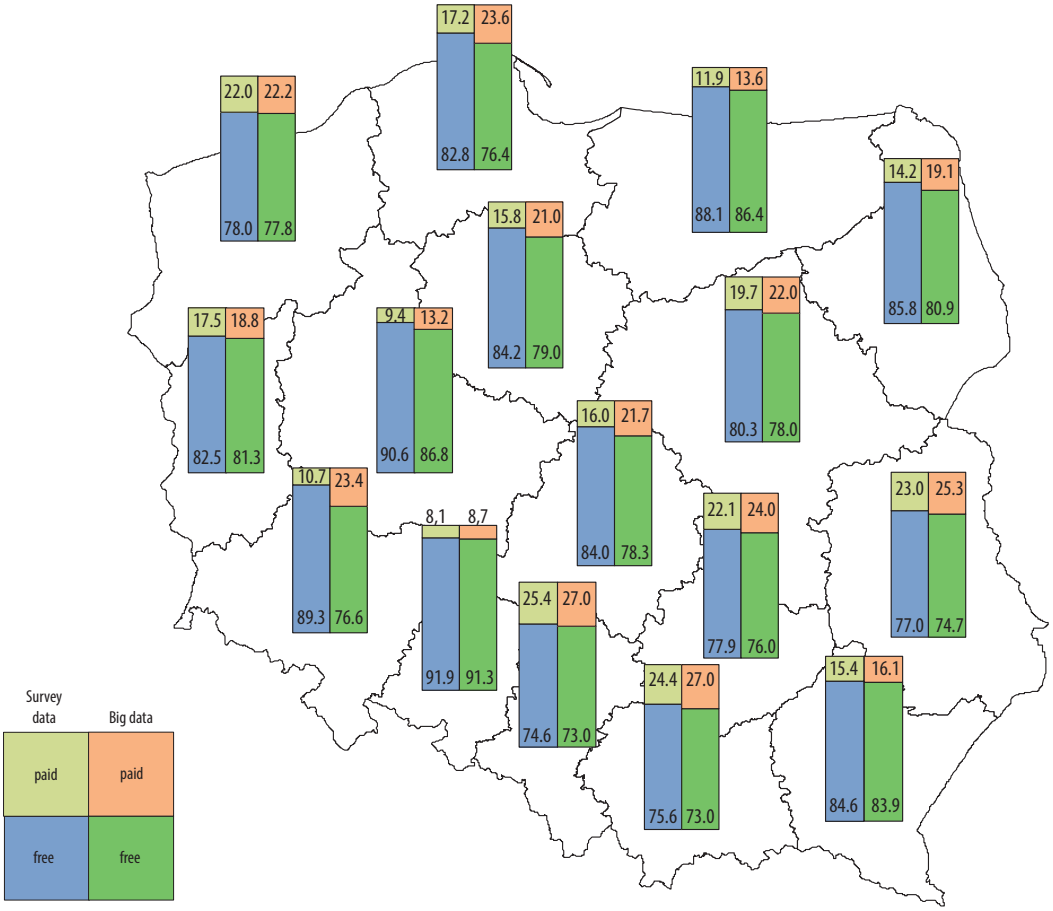
Use of innovative data sources to understand various aspects of refugees' lives in Poland

While population sample surveys remain the gold standard for the collection of cost-effective data for multivariate analyses, they are resource intensive and their collection, analysis and dissemination takes up a considerable amount of time. Routine data collected by administrative sources and new and innovative big data sources – such as payment card operators data or mobile network operators data – have the potential to fill data gaps in resource-constrained settings, and can be integrated with survey data to enable more accurate health estimation. This report outlines results obtained by integrating data acquired from administrative records with data from big data sources to enhance the quality of the refugee survey findings.

MNO data are readily available in Poland, with near real-time access, and can be used for a variety of things, including looking at the movements and locations of refugee populations. Estimates of the total numbers of refugees and their spatial distribution based on administrative data sources can become biased or outdated over time. The following results present estimates computed from the 2023 survey (denoted as survey data) with weights calibrated against administrative data sources available in March 2023 and MNO data available in December 2023 (denoted as big data). See Annex 6 for methodological descriptions of the data integration method.

The comparative results illustrate whether medical services were received free of charge or were paid for out of pocket (Fig. 25). Spending figures for healthcare, derived from these integrated data sources, were mostly consistent. Further integration of these data sources should increase the accuracy of health expenditure estimates. Further development of the methodological considerations for such data integration is underway.

Fig. 25. Share of spending on medical services as percentages[a]

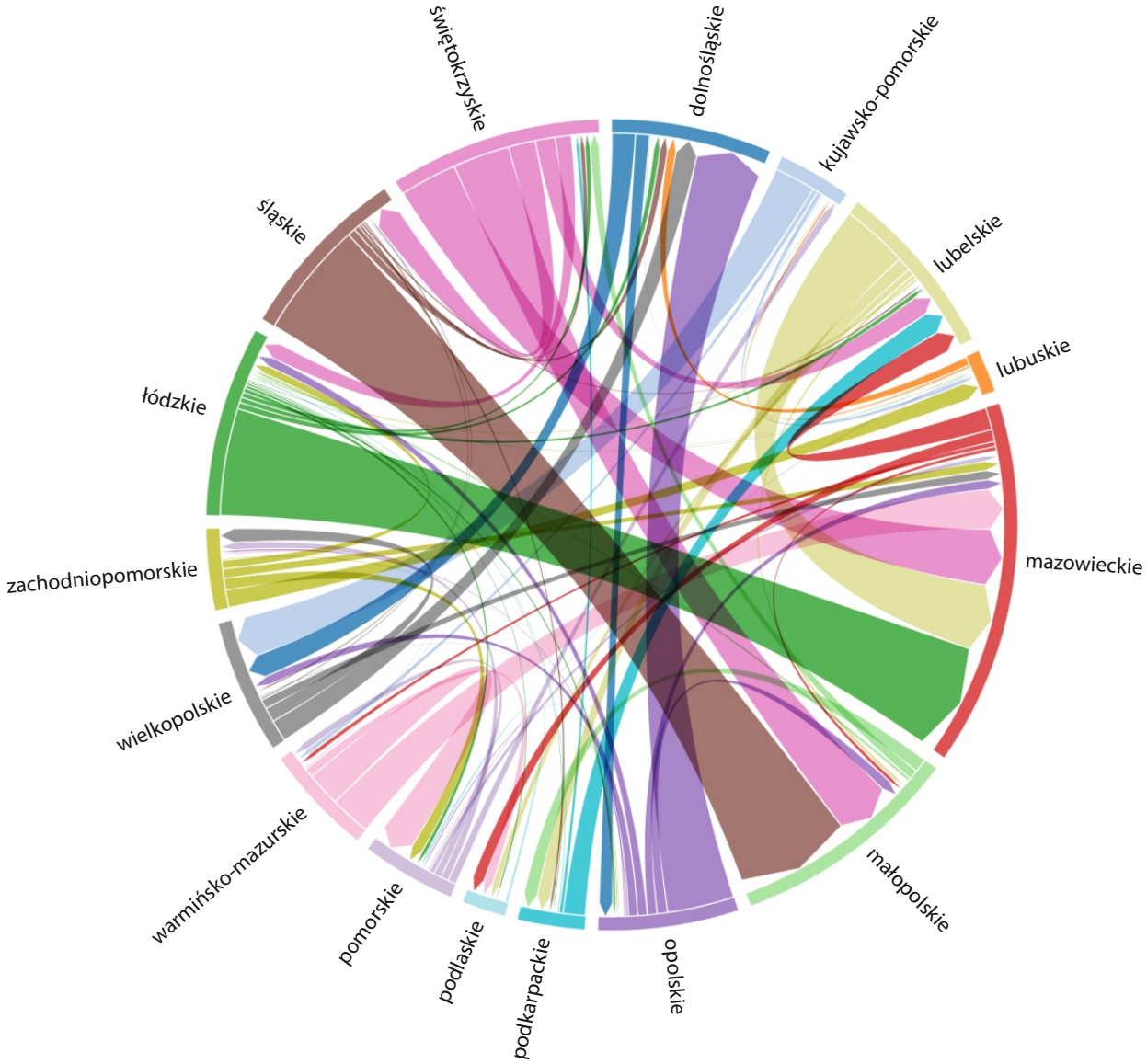


[a] Survey data estimates derived from administrative data weights (March 2023) and updated MNO data weights (December 2023).
Source: Statistics Poland.

This innovative use of data sources offers invaluable insights into various aspects of the lives of refugees from Ukraine in Poland. One particularly promising application is the use of MNO data to monitor population movements, which has the potential to aid the swift identification and management of public health risks, particularly in the context of infectious diseases, where timely intervention is crucial. By tracking these movements, migration patterns and potential hotspots for disease transmission can be better understood. Fig. 26 shows the trips made by refugees from Ukraine in 2023, with a particular focus on short trips.[5] Between 15.47% and 18.67% of refugees made short trips between voivodships (Fig. 26), indicating a tendency to move beyond their initial places of refuge. This highlights the importance of understanding these dynamics to better anticipate and address evolving needs, such as access to essential services and community support, in different regions. The largest number of trips was recorded from Świętokrzyskie voivodship (mainly to Małopolskie and Mazowieckie voivodships). The most common destination was Mazowieckie voivodship (22%). Significant numbers of refugees were recorded travelling between voivodships in close proximity to each other (that is, between Śląskie and Małopolskie, Łódzkie and Mazowieckie, Opolskie and Dolnośląskie, and Lubelskie and Mazowieckie).

5 Short trips are considered as overnight stays of between one and three nights.

Fig. 26. Trips made by refugees between voivodships (NUTS2) in Poland



Note: Information regarding the use of NUTS2 is available in *(6)*.
Source: Statistics Poland.

This information may be useful for local decision-makers responsible for vaccination programmes, because diseases do not respect borders. Refugee movements underscore the critical roles of inter-voivodship movements and border crossings in disease transmission, highlighting the need for effective healthcare measures across regional and international borders. Collaboration between the healthcare authorities of different voivodships is essential to address the challenges posed by refugee movements and cross-border travel if the impact of health problems is to be mitigated. Such collaboration will also allow the development and implementation of tailored health programmes to ensure the well-being of all individuals who use the Polish healthcare system.

Conclusions

The way forward: an evidence-driven approach to addressing the health needs of refugees

Health systems in Poland have made significant efforts to address the health and social needs of refugees. Refugees from Ukraine enjoy the same legal entitlements to healthcare as Polish citizens in terms of benefits and cost coverage. The 2023 survey was carried out 1 year after the Health of refugees from Ukraine 2022 survey and behavioural insights research was conducted, and has been complemented by integrating data from varying sources in an effort to enhance the available data on health needs and access to health benefits and quality care.

We hope this study will inspire other countries to explore the innovative methods presented in this report to bolster reliable data collection and evidence gathering in situations in which populations have been displaced.

Key conclusions: health of refugees

Heterogenicity of the refugees from Ukraine

The community of refugees from Ukraine in Poland is heterogeneous, and comprised of individuals and social groups with diverse demographic and social characteristics. This diversity includes variations in experiences prior to displacement, with some having fled war zones while others had not. Refugees with children have distinct needs, and age plays a significant factor in the healthcare needs of refugees. Additionally, the needs of refugees living in temporary accommodation differ from those with more stable housing situations, and those who have secured employment are in a different position altogether.

This heterogeneity necessitates differentiated healthcare responses, as healthcare needs and barriers to access vary across different subgroups within the refugee population. Understanding these nuances is crucial for effective tailoring of interventions and ensuring equitable access to healthcare services for all.

Evolving needs: a greater need for specialist care

At this stage of their stay in Poland, refugees from Ukraine primarily use the Polish public health system, and report encountering challenges in accessing specialist care, including dental and surgical services, and long waiting times to receive such care. These issues mirror those faced by the Polish population in general, highlighting a systemic need for continued investment in and strengthening of the public healthcare system. Particular attention should be given to vulnerable

groups, such as refugees in temporary accommodation establishments, individuals with disabilities and/or chronic conditions, and older adults.

Shared challenges beyond borders

Refugees from Ukraine who have integrated into Polish society face challenges similar to those of their host community in navigating the healthcare system, particularly long waiting lists for specialist care. Investing in and strengthening the Polish healthcare system, particularly specialist and mental health services, including the integration of mental healthcare into primary healthcare, would enable continuity of and access to care, enhance the responsiveness of primary healthcare, and prioritize preventive care to benefit both refugees and Polish citizens alike.

Participatory collaboration between refugees from Ukraine and the host community offers exciting possibilities. Integrating refugee health professionals into the Polish healthcare system is just one example of how this collaboration could benefit everyone.

Beyond the language barrier: cultural nuances in Polish healthcare

The 2023 survey reveals cultural factors behind refugees' healthcare preferences. One key finding highlights a preference to see Ukrainian healthcare professionals. While the ability to communicate fluently undoubtedly plays a role, the survey suggests something deeper: a desire for care from individuals who share the same cultural and historical background. Such a sense of familiarity can build a sense of trust and create a more comfortable healthcare experience.

This insight underscores the importance of continuing to partner with refugee communities and healthcare professionals to tailor health interventions. Such partnerships can enhance risk communication and prenatal care, promote vaccination, strengthen tuberculosis and HIV prevention and control efforts, help to develop culturally relevant health-promotion strategies for noncommunicable diseases and expand health literacy in general.

Using private healthcare: increasing out-of-pocket expenses

The majority of refugees from Ukraine in Poland rely on free public health services. We observed a decrease in the proportion of refugees spending over 25% of their income or savings on healthcare. However, out-of-pocket costs for some healthcare services, medicines and other treatment pose a financial burden for refugees, a challenge they share with Polish citizens. Poland still has one of the highest rates of out-of-pocket healthcare expenditure in Europe. Addressing this issue will benefit both refugees from Ukraine and the host population *(8)*.

While the study did not explore the specific reasons for out-of-pocket expenditure, the behavioural insights research pointed to long waiting times for healthcare and the need for specialist care (including dental care) may influence refugees to seek private healthcare, or the costs for

medicines that are not reimbursed. Some essential health services, such as mental health services for children, can be difficult to access within the existing healthcare structure, highlighting pre-existing deficiencies in the Polish health system.

Further exploration of the underlying reasons behind refugees using private healthcare will be needed. The closure of gaps in health services and their financing through national reforms will have a positive effect on pre-existing weaknesses and will bridge generic gaps in the Polish health system, benefiting host and refugee populations alike.

Call for further action: mental health support for refugees from Ukraine in Poland

Despite the availability of mental healthcare services, a significant proportion of refugees from Ukraine in Poland remain underserved, primarily due to limited self-reported need for such services, and possible cultural factors and negative perceptions of mental health. However, the refugees that did express needs reported barriers to accessing psychiatrists and had used private mental health services. Concerns were raised about children's (particularly teenagers') mental health, which underscores the existing need for mental health support. The current efforts of the Polish Government and international and local organizations aim to improve access to community-based mental healthcare, enhance MHPSS capacities, improve mental health literacy and reduce stigma, and promote and improve the availability of mental healthcare, especially for children and adolescents.

Disease prevention and vaccination

The development and implementation of national plans for measles and rubella elimination, along with robust outbreak response plans, is a crucial next step for Poland. A comprehensive national plan, with buy-in from all stakeholders, will enable coordinated action to effectively address immunization inequities and gaps in Poland, misinformation, anti-vaccine movements and clusters of unvaccinated individuals. Such concerted efforts align with the national health agenda and will benefit the entire Polish population, including both citizens and refugees.

Given that the population of refugees from Ukraine is predominantly female and the 2023 survey results indicate a rise in cardiovascular disease burden, proactive disease prevention strategies are crucial. This includes promoting awareness and access to cancer screening for women, and implementing targeted interventions to address cardiovascular disease risk factors, such as healthy lifestyle promotion, early detection programmes and management strategies for this vulnerable population.

Social and economic determinants of health

The health of refugees from Ukraine in Poland is not solely determined by their medical needs, but is deeply intertwined with social determinants of health. Socioeconomic status – including income, employment and housing conditions – significantly influences their access to healthcare, utilization patterns and overall health outcomes. In particular, refugees residing in temporary

accommodation establishments face disproportionately higher barriers to care and experience greater financial burdens. Educational attainment and social support networks also play a crucial role in the health and well-being of refugees. Employment status influences access to healthcare, because refugees with jobs often have additional private health insurance, providing broader coverage and shorter waiting times for specialist care. Polish language proficiency is another key factor affecting access to care, and older refugees and those with disabilities encounter more difficulties navigating the healthcare system. Understanding and addressing these social determinants is essential for the development of targeted interventions that will not only treat existing conditions but also promote long-term health equity among refugees from Ukraine in Poland.

Key conclusions: use of innovative technology

From household surveys to data innovations

When the war in Ukraine started, there was an urgent need for data to tell the stories of the refugees fleeing the crisis, their health conditions and needs, to enable the Polish authorities to make informed decisions. The partnership between WHO and Statistics Poland facilitated such data collection from a representative sample of refugees using a short and targeted questionnaire coupled with behavioural insights research. The behavioural insights research enhanced the findings of the quantitative data and has been successful in enabling the implementation of immediate and practical policies, decisions and interventions. Surveys are the traditional and time-tested method for data collection where population-level data are needed. However, they may not be practical in resource-constrained settings. Although it may be beneficial to collect data from administrative sources to enable decisions and policies to be made, such an approach is often ineffective when population-based data are needed. Innovative big data sources, such as MNO and payment card transaction data, provide data that complement those that can be obtained from population surveys and administrative records. Using a mixed-methods approach to integrate such data sources enables immediate data gaps to be filled, enhances the quality of the information gained from individual data sources, and can ultimately improve estimates of the health situation to improve the health and well-being of populations.

Integration of existing data sources

In the 2023 survey, big data sources and administrative records were used to complement the survey data to provide a brief snapshot of the refugees' situation. However, the true potential of big data lies in its ability to facilitate long-term monitoring due to it being updated on a daily basis, in contrast to surveys, which are sampled less frequently. Moving forwards, continuous collaboration between statistical and health authorities is essential for the advancement of data integration methodologies. Leveraging of diverse data streams, including routine and administrative sources, will enable a transition towards data that are fit for purpose.

Insights from big data and data integration

Surveys capture a particular moment in time, while big data provide cost-effective, continuous trend tracking with temporal and spatial granularity. In the future, the use of a variety of record-linkage techniques will be essential to ensure the interoperability and reliability of big data insights. Compiling multiple sources will create a database that can serve both as a benchmark for refugee population estimates and as a survey frame for household surveys. The example outlined in this report demonstrates how the use of big data in the context of refugee and migrant health can fill in data gaps and provide better estimates of the situation on the ground.

Partnership health and statistics

The 2022 and 2023 surveys exemplify the transformative impact of good collaboration. This synergy, achieved through partnership between a national statistical and health agencies, heralds a new era of evidence-based decision-making, personalized care and proactive well-being promotion for all, to ensure equity of healthcare for refugees and migrants. The results of this collaboration strongly advocate for the sustained nurturing of such powerful partnerships, and emphasize the immense potential they may have to contribute to the shaping of a healthier future.

Tangible products of this partnership:

Product 1: Systematic updates of coherent information systems using the survey at the border

Statistics Poland intends to undertake systematic monitoring of the health of people from Ukraine. This ongoing effort will be an additional part of a quarterly survey that is regularly conducted among non-residents living in Poland, in partnership with the National Bank of Poland and the Ministry of Sport and Tourism. The survey will be conducted at border crossings along the Polish–Ukrainian border, situated within the Podkarpackie and Lubelskie voivodship. Data concerning health will be collected and compiled as part of the survey. The quarterly results will enable systematic monitoring of the health situation of refugees from Ukraine in Poland.

Product 2: Refugee health dashboard

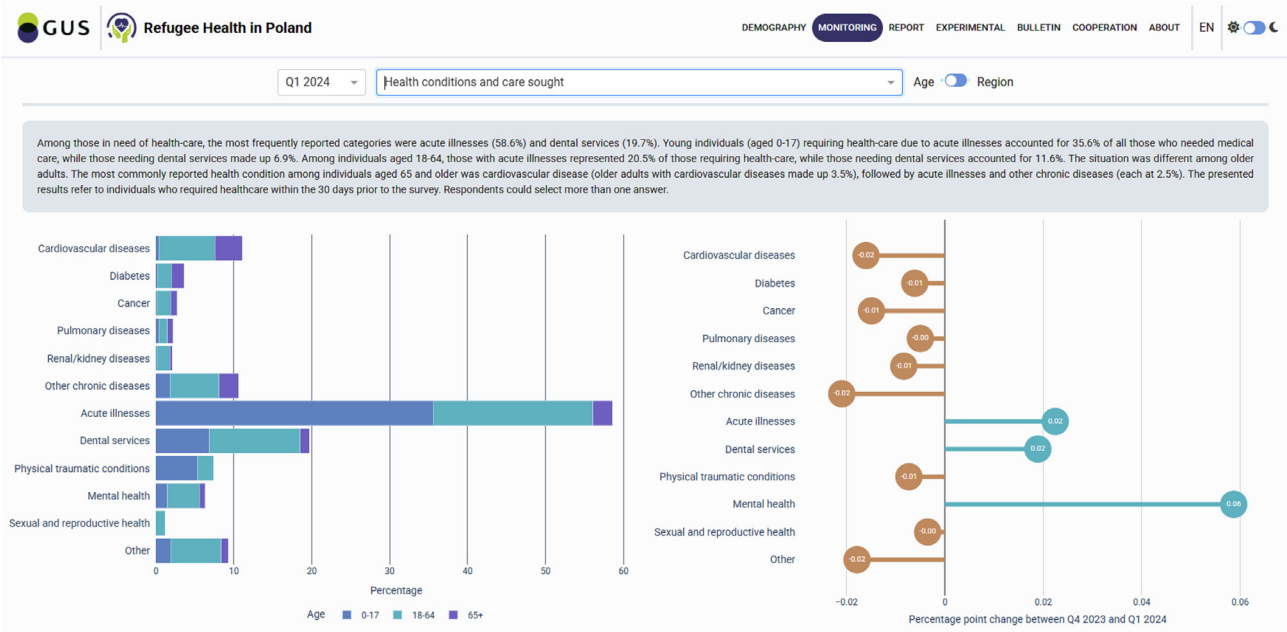
To provide comprehensive and up-to-date information on the health status of refugees in Poland, Statistics Poland, in collaboration with WHO, has developed a modern refugee health dashboard (Fig. 27). This tool will allow the latest survey results and health indicators to be accessed from one place.

Key features of the dashboard are:

- current data, with information on refugee health updated quarterly, including demographic and experimental (big data) data;
- interactive visualizations, with charts and maps that allow intuitive data analysis; and
- report customisation, with report generation based on selection criteria.

The dashboard is available to all interested parties and provides a tool for effective monitoring of refugee health. Access to the dashboard and current results can be found at https://healthofrefugees.stat.gov.pl *(9)*.

Fig. 27. The Refugee Health in Poland dashboard



Source: Statistics Poland.

Big data for official statistics

The successful application of the data integration methodology used to analyse healthcare costs that is featured in this report serves as a compelling example of its potential to transform how information is gathered on the health and well-being of migrant, refugee and host communities. This "game-changing" approach offers several promises to improve data collection, analysis and utilization, ultimately enhancing the capacity to make informed decisions and implement effective interventions. The key potential benefits and applications of this innovative approach are given below and open the door for further exploration.

Advances in data integration methodology for health: This study identified and tested a promising statistical method for the integration of diverse data sources, including big data, to address the complex health needs of often highly transient refugee and migrant populations. The

successful application of this methodology demonstrates its potential for wider implementation in diverse contexts.

Real-time insight: This approach could enable time-sensitive analysis of data, providing crucial insights into the evolving health needs of refugee and migrant populations, vis-à-vis other populations. Unlike traditional "snapshot" data collection, this integrated method offers continuous monitoring of the health situation, significantly enhancing decision-making capabilities.

Granular data for localized action: The methodology could deliver comprehensive national-level information as well as granular data at the district or municipality level. This empowers local decision-makers to allocate resources, and design and implement targeted interventions precisely where they are needed most.

Efficient validation and robust estimates: By leveraging existing big data sources, this approach could expedite the validation process and generate more robust estimates of the health situation. If such data are available and adopted, valuable time and resources can be saved compared with traditional data collection approaches, which are often lacking in resource-constrained settings and where time is of the essence, such as in emergency situations.

Further research: While this study highlights the value of data integration for the assessment of refugee health needs, it is important to acknowledge and address potential data biases inherent in the sources used. Further research is essential, especially in environments with sparse electronic payment infrastructure, to determine how these biases might affect findings and to identify alternative big data sources that are more appropriate for specific local contexts. Addressing these challenges is crucial to enhance the methodology's applicability and impact across countries and regions. This study lays the groundwork for future applications, and we appreciate the ongoing support from the United Nations Statistical Commission and WHO Member States in advancing this critical field.

Mixed-methods approach for comprehensive understanding: The use of a mixed-methods approach incorporates the perspectives of refugees and migrants, and can be expanded to include the behavioural insights of healthcare providers for more comprehensive understanding.

In conclusion, this innovative data integration methodology represents a significant advancement in the field of public health, and has the potential to transform how the health needs of vulnerable populations are understood and addressed.

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Annex 1. Survey tool and research interview questions

Statistics Poland

GŁÓWNY URZĄD STATYSTYCZNY — **al. Niepodległości 208, 00-925 Warszawa**

Health of refugees from Ukraine[1]

Dear Sirs, Statistics Poland is conducting an anonymous survey on the use of health care in Poland. Please fill in this questionnaire. The information given is used for research purpose only.

I. Type of interview	**1**	In households	**2**	In collective accommodation establishments	**3**	At the border

II. Please give the number of people living together (family, friends) *(if you live alone please write in „1")*		persons

Specification		Total	under 1 year	1–4 y.o.	5–14 y.o.	15–17 y.o.	18–34 y.o.	35–44 y.o.	45–54 y.o.	55-64 y.o.	65 and over
0		1	2	3	4	5	6	7	8	9	10
Females (F)	01										
Males (M)	02										

III. Education		Number of persons
Primary	01	
Vocational	02	
Post-primary	03	
Higher	04	

IV. Please specify your status during your stay in Poland	Number of persons
1. Persons registered in the PESEL UKR register	
2. Persons with temporary residence permit	
3. Other persons (without PESEL UKR and temporary residence permit)	

V. When did you arrive to Poland?		Date	Border crossing
1. First date of crossing the border since 24/02/2022		*dd/mm/yyyy*	
2. Last crossing of the border (if different from above)		*dd/mm/yyyy*	
3. Have you ever been in Poland before 24/02/2022?		**1** Yes	**2** No
VI. Do you intend to return to Poland?	Yes, when	*dd/mm/yyyy*	*number of person*
	No		*number of person*

VII. In which region in Poland do you live?

the voivodship number

VIII. Type of accommodation	
1. Own / rented flat	**1**
2. Flat owned by family, friends, company	**2**
3. Collective accommodation	**3**
4. Other (please specify)	**4**

IX. Do you work in Poland?		
1. Yes		persons
2. No		persons

X. Do you take advantage of the following forms of education in Poland?		
1. Nursery (children under 3 years old)		persons
2. Pre-primary (3-6 years old)		persons
3. Primary school (7-14 years old)		persons
4. Vocational school (15-18 years old)		persons
5. Post-primary (15-20 years old)		persons
6. Higher education institution (19 and over)		persons
7. None of the above		persons

XI. Please specify oblast of residence in Ukraine	
Number of persons	Oblast

XII. Please specify the distance from your place of residence in Ukraine to the border crossing	
1. Up to 100 km	**1**
2. From 101 to 500 km	**2**
3. From 501 to 1000 km	**3**
4. 1001 km and over	**4**

XIII. Do you intend to return to Ukraine after the end of military operations?		
1. Yes		persons
2. No		persons
3. Do not know		persons

[1] This questionnaire has been designed by Statistics Poland adhering to recommendations and inputs received from WHO.

HEALTH MODULE *PLEASE INDICATE THE NUMBER OF PERSONS ACCORDINGLY*

XIV-1 In the past 30 days or less, did your household member need health care?	**Total**	0–17 years old	18–64 y.o.	65 and over
1. Yes				
2. No → IX-6				

XIV-2 What types of health care were needed?	**Total**	0–17 years old	18–64 y.o.	65 and over
1. Acute illnesses (with symptoms like fever, diarrhoea, cough, etc.)				
2. Physical traumatic conditions (injuries, burns, wounds, etc.)				
3. Noncommunicable diseases & chronic illnesses such as:				
3.1. Cardiovascular disease				
3.2. Pulmonary disease				
3.3. Diabetes				
3.4. Renal/kidney disease				
3.5. Cancer				
3.6. Other chronic				
4. Infectious diseases (influenza, COVID-19, TB, hepatitis, HIV, etc.)				
5. Mental health (stress related symptoms, PTSD, depression, anxiety, etc.)				
6. Sexual and Reproductive Health (Ante-natal or post-natal services, safe delivery, etc.)				
7. Dental health				
8. Others (please specify)				
9. Related to the above conditions, were you in need of acquiring medicine during your stay in Poland? Yes				
9. Related to the above conditions, were you in need of acquiring medicine during your stay in Poland? No				

XIV-3 Were your household members have access to health care for the above-mentioned conditions?	**Total**	0–17 years old	18–64 y.o.	65 and over
Yes				
No – If not, why?				
1. Information barrier (e.g. lack of information, language or cultural differences, unclear referral pathways)				
2. Cost of services for consultations, treatment				
3. Required prescriptions, cost of medication				
4. Logistics to attend facilities (transport, distance, accommodation)				
5. Long waiting times to receive medical services				
6. Lack of access to medical care (e.g. lack of facilities, equipment, personnel medicine)				
7. Other reasons (please specify)				

XIV-4 What type of health care services were provided for the affected household members?		**Total**	0–17 years old	18–64 y.o.	65 and over
1. Free medical care					
2. Paid medical care	Paid in cash				
2. Paid medical care	Paid by card				

XIV-5 In the past 30 days or less, what proportion of your income/savings did you need to spend on healthcare-related costs for you and your household members? (includes service fees, medication, other treatment costs)?

1	Less than 10%	**2**	Between 10 and 25%	**3**	More than 25%

XIV-6 Have your household members received vaccinations against COVID-19?	**Total**	5–14	15–17	18–34	35–44	45–54	55–64	65 and over
1. Yes – If yes, how many doses?								
• 1 dose								
• 2 doses								
• 3 doses/booster								
2. No								

XIV-7 For children in your household aged 1–4 years, have they completed the following vaccinations in accordance *with the Ukrainian immunization schedule*?	**Yes**	**No**	**Don't know**
1. MMR (Measles, Mumps, Rubella)			
2. DTP (Diphtheria, Tetanus, Pertussis/Whopping Cough)			
3. Polio			

XIV-8 (Mental health) Is there anyone in your household member currently so upset, anxious, worried, agitated, angry or depressed that it affects the person's daily functioning?	**Total**	0–4	5–14	15–17	18–34	35–44	45–54	55–64	65 and over
1. Yes									
• Do you think those household member could benefit from support for this problem?									
2. No									

THANK YOU FOR PARTICIPATING IN THE SURVEY

.....

date *interviewer's name*

Behavioural insights interview

Behavioural insights on refugee health service needs and access:
Qualitative study to assess the healthcare needs and gaps, and the barriers and drivers of health service uptake among Ukrainian refugees in Poland
INTERVIEW TOPIC GUIDE

AIM OF THE INTERVIEW

1. Explore the health-related service needs and expectations of refugees.
2. Identify barriers and drivers of accessing and utilizing healthcare services of refugees, including related to their capacity, motivation, social support and physical access to services.

PROCESS

BEFORE THE INTERVIEW STARTS

- Thank participant for their time and contribution.
- Check that the participant has read the Participant information and consent form.
- Ask them if they have any questions about the interview and answer these.
- Ask them if they agree with audio-recoding and turn on recorder. If they do not agree, politely end the interview, explaining why audio-recoding is necessary, thanking them for their time and wishing them the best.
- Copy the consent form text into the chat, read it out loud and get their verbal, audio-recorded consent. Ask them to agree in writing in the chat as well. Highlight that they can terminate the interview at any time they wish with no negative implications.
- Reassure them that there are no right or wrong answers, we are really interested in their experiences and views. Stress that they will not be identified.
- Start interview.

AT THE END OF THE INTERVIEW

- Thank participant again.
- Ask participant if they would like information about available health services (if this has not already been provided during the interview). If yes, provide them the information (Annex 5).
- Ask participant if they would like to receive the outcomes of the study. If yes, ask for an email address or other contact to use for this.
- Ask participant if they would like to be contacted again in 1–3 months for a follow-up interview. If yes, ask for an email address, phone number or other contact so the principal investigator can invite them. Inform them that only the principal investigator, co-lead researcher and Martha Scherzer will have access to this information; they will not be contacted for any other reason or by any other person.
- Ask participant if there are any last questions (refer to the Q&A sheet for answers or links to further information).
- Wish the participant the best and close the online platform. Save the audio-recoding in access-protected folder.

1. INTRODUCTORY QUESTION

Please tell me about where you are staying now?

Prompts

- Are you in a camp, with friends/family or in a rented facility? Or something else?
- Are you currently on your own, or are any family members or others living with you? Are there children living with you? How many?

2. HEALTH SERVICE NEEDS *(Behaviour in COM-B model)*

Please tell me about the current health service needs for yourself and those you are a caretaker for?

- How often would you normally attend health services before leaving Ukraine? Would you like to share the reasons you have typically attended health services?
- Have you attended any health services in Poland within the last month?
- Were you offered a health check upon arrival in Poland? If so, did you accept? Could you tell us more about the reasons you accepted or didn't?
- Have you or anyone you know been offered any mental health and psychosocial support services since arriving in Poland?
    - Can you tell us more about the reasons people might accept such services or not accept?
- What kind of prevention services do you currently need? (Prompts: vaccination, health check, pregnancy consultations, condoms, contraceptive pill, mental health counselling, other?)
- What kind of treatment or care do you currently need? (Prompts: medicine for chronic illness, medicine for other conditions, medicine for mental health-related conditions, other?)
- What supporting services do you need, such as information about health services, information in Ukrainian language or other?

Let's talk now about what helps or hinders you to get health services in Poland

3. KNOWLEDGE ABOUT HEALTH NEEDS AND SERVICES *(Capability in COM-B)*

Please tell me what you know about health services in Poland:

- Do you know whether health services are available for you and what kind?
- Do you know whether mental health and psychosocial support services are available?
    - In case you would need any are you aware where you can receive them?
- Do you know what health services are available for children?
- Do you have information on where to go for health services (address, place)?
- Do you know what kind of health services are free of charge?
- Do you know what kind of mental health and psychosocial support services are free of charge?

Do you currently feel confident that you know enough about health service needs for yourself and those you are a caretaker for?

Prompts:

- You do not have to provide information about your specific health needs or issues; however, I will mention a few possible areas to help you reflect on this question:
- Related to prevention; such as vaccination?
- Related to medication or other treatment for any chronic illness you have; such as diabetes, cancer, cardiovascular disease, tuberculosis, HIV or other?
- Related to any mental health-related conditions or psychosocial support?
- Related to any other health conditions you are currently experiencing?

I would now like to hear your views on health-related information:

- What information sources do you currently use for health-related information? Would you tell us some reasons you use those sources?
    - If mentioned, prompt for specific online channels: WhatsApp from friends/family, Viber, Telegram, Facebook, Instagram, other
- Which information sources do you trust?
- Do you think that you get enough information about health services in Poland?

- What would you like to know more about?

4. VIEWS ON HEALTH SERVICE NEEDS AND SERVICES (Motivation in COM-B)

In your current situation, is seeking health care and services a priority to you?

- Can you tell us more about the reasons this is or isn't a priority?

Would you feel safe and confident to seek health services in Poland if and when the need arises?

- Do you trust the health workers in Poland?

Can you tell me about any other concerns you might have about seeking health services in Poland?

Prompts

- Where did you learn this?
- Is this based on a past event? Tell me about that.
- Other concerns?

How can you be reassured about these concerns?

Prompts

- What information or support would be helpful?
- Who from?
- Anything else that you need?

5. ACCESS TO HEALTH SERVICES (Physical Opportunity in COM-B)

Please now tell me about how convenient it is for you to access health services in Poland:

- Have you received any written or verbal information about health services available? From whom? Through which channel? (prompt – WhatsApp from friends/family, Viber, Telegram, Facebook, Instagram, other)
- Have you received any encouragement to seek health services in Poland? From whom? By which channel? (prompt – WhatsApp from friends/family, Viber, Telegram, Facebook, Instagram, other)

Note to moderator: If the participant does not know about health services offered in Poland (see section 3 above), please skip the next four bullets.

1. Is the location of health services in your current place of residence in Poland convenient to you?
2. How does that affect you? What would help you to get the health services you need?
3. How convenient are the opening times offered in these health facilities?
4. How does that affect you? What would help you to get the health services you need?

I would now like to ask about whether you have experienced anything positive or negative in relation to health services in Poland?

Note to moderator: If the participant has had no experience with health services in Poland, please go directly to section 6.

- How was your overall experience – a positive or a negative one? How did this affect you?
- Did you get the health services you needed? Could you tell me more about that?
  - (If relevant) Have the children living with you received the health services they needed? Why/Why not?
- Was there any financial cost for you? Tell me about that.
- Did you receive any written materials? If yes, what were those materials? What did you think of them? Did you share these materials with your friends/family?
- Were you able to communicate well with the health workers? Tell me more about that.
- Prompts:
  - Which language did you communicate in? Was this easy or difficult? Did you experience any cultural differences or similarities to what you experience at home?
  - How was the interaction with the health workers?
  - Were all your questions answered?
  - Anything else you would like to share regarding your interaction with the health workers?

6. ROLE OF OTHER PEOPLE *(Social Opportunity in COM-B)*

Have you talked about health services in Poland with family and friends?

- What did they say?
  - Have they used health services? Where do they get their information about health care services?
- How important to you are their views? Why is that?

Have you discussed health services in Poland with other people you have met in Poland?

Prompts:

- friends, family?
- other refugees?
- local community groups or volunteers?
- local authorities?
- health workers?
- UNHCR, Red Cross, WHO, UNICEF?

- What did they say?
- Do you know if they/the other refugees seek health services in Poland?
- How important to you are their views? Why is that?

Are you able to draw on <u>support</u> from anyone in order to get access to health services in Poland?

Prompts:

- friends, family?
- other refugees?
- local community groups or volunteers?
- local authorities?
- health workers?
- UNHCR, Red Cross, WHO, UNICEF?

- How do they support you?
- How important is their support to you?
- What could they do to support you (even more) to get access to health services in Poland?

7. IDEAS FOR SUPPORTING REFUGEES TO ACCESS HEALTH SERVICES

What is <u>the most important</u> action that needs to happen to support Ukrainian refugees in Poland in getting the health services they need?

8. FINAL QUESTIONS

Is there anything else that you want to tell me before we finish?
I will share with you some information about where you can seek health services in this country. Please, let me know if you do not wish to receive this information.
Thank you very much for talking with me/us for sharing your experience with me/us.

END INTERVIEW

Annex 2. Survey methodology

Health of refugees from Ukraine 2023 survey

The Health of refugees from Ukraine 2023 survey was carried out in the fourth quarter of 2023 by Statistics Poland in cooperation with WHO.

At the end of 2023, almost 2 years after the start of the war in Ukraine, activities at reception points on the border were suspended. People who had arrived from Ukraine had changed their locations. They had moved further away from border areas and spread across the country. The majority were staying in flats and houses, while a minority were staying in accommodation establishments such as hotels, dormitories, student houses, sanatoria and school dormitories. To cover the population of interest, three sample surveys were conducted:

- a household survey
- an accommodation establishments survey
- a survey at the Polish–Ukrainian border.

The aim of these surveys was to obtain information from refugees to characterize their demographic, social and health profiles, and identify their health needs and mobility patterns.

The household survey

The survey frame was developed through the integration of several administrative data sources that were strictly connected with refugees. These sources included population registers, Border Guard data, work permits, and social security, healthcare, social care and education data. The sample was selected by simple random sampling and square-root allocation. Strata were derived with respect to statistical areas. The survey was conducted using a variety of techniques, including computer-assisted personal interviewing (CAPI). Estimates were computed based on sample weights calibrated with respect to the survey frame.

The accommodation establishments survey

The survey frame of accommodation establishments was based on the Statistical Units Database and regularly updated by web scraping of booking portals. Over 400 accommodation establishments declared they had helped almost 11,000 refugees.

This was a two-stage survey:

- census survey of the accommodation where refugees were staying;
- systematic sampling of refugees in the accommodation by interviewers, or on a voluntary basis.

Interviews were carried out using a variety of techniques (including CAPI). Estimates were computed based on sample weights calibrated with respect to the known number of refugees in the accommodation establishments.

The border survey

The survey of refugees at the border was part of the "Trips made by non-residents to Poland" quarterly survey. For the purposes of the survey, border crossing points were carefully selected with respect to the intensity of border traffic and their locations. The survey is conducted during the working week and at weekends. Systematic sampling is applied at the border crossing points. Since there was no survey frame for the survey at the border, we dealt with an elusive population. Interviewing was carried out using paper-and-pencil interviewing. Estimates were computed based on sample weights calibrated with respect to Border Guard data.

Mobile network operator (MNO) data

MNO data have high spatial granularity and population coverage. Daily data were obtained on the number of active subscriber identity module (SIM) cards with respect to local administrative units. Thus, MNO data did not pertain to any particular person. Each data provider followed its own disclosure control policy to ensure the safety of its microdata. The data were deduplicated for use in the mobility data model. To enable the estimation of the number of refugees, the following electronic communication market indicators and digital literacy indicators were also utilized: share of people using smart phones by age cohort for Poland, age–sex cohort structure of the refugee population, market share of SIM cards issued for refugees by MNOs in Poland and average number of SIM cards per SIM card holder in Poland. Moreover, in the mobility model, MNO data were utilized to obtain general information on the mobility patterns of refugees.

Payment card operator data

Payment card transaction data are broadly similar to MNO data in terms of spatial granularity and timeliness. They also include information on Merchant Category Codes. The data allow the extraction of information on expenditure on health services during a given time period and in a given area. Such estimates were computed using payment card market shares for Ukraine and the share of cash expenditure of total expenditure for health services from the survey sample of refugees.

Survey interview questionnaire

The survey interview questionnaire (Annex 1) was developed with versions in three languages: English, Polish and Ukrainian. A universal questionnaire was developed for all of the surveys: household, accommodation establishment and at the border. The questionnaire contained 21 questions; the majority were closed questions, although there were some semi-open questions.

The survey is divided into the following modules:

Module I – Demographic and social characteristics

- Characteristics of people who came to Poland by sex, age and level of education;
- Current place of residence;
- Previous place of residence in Ukraine;
- Employment status or whether currently enrolled in education;
- Intention to return to Ukraine after the end of military operations.

Module II – Health profile

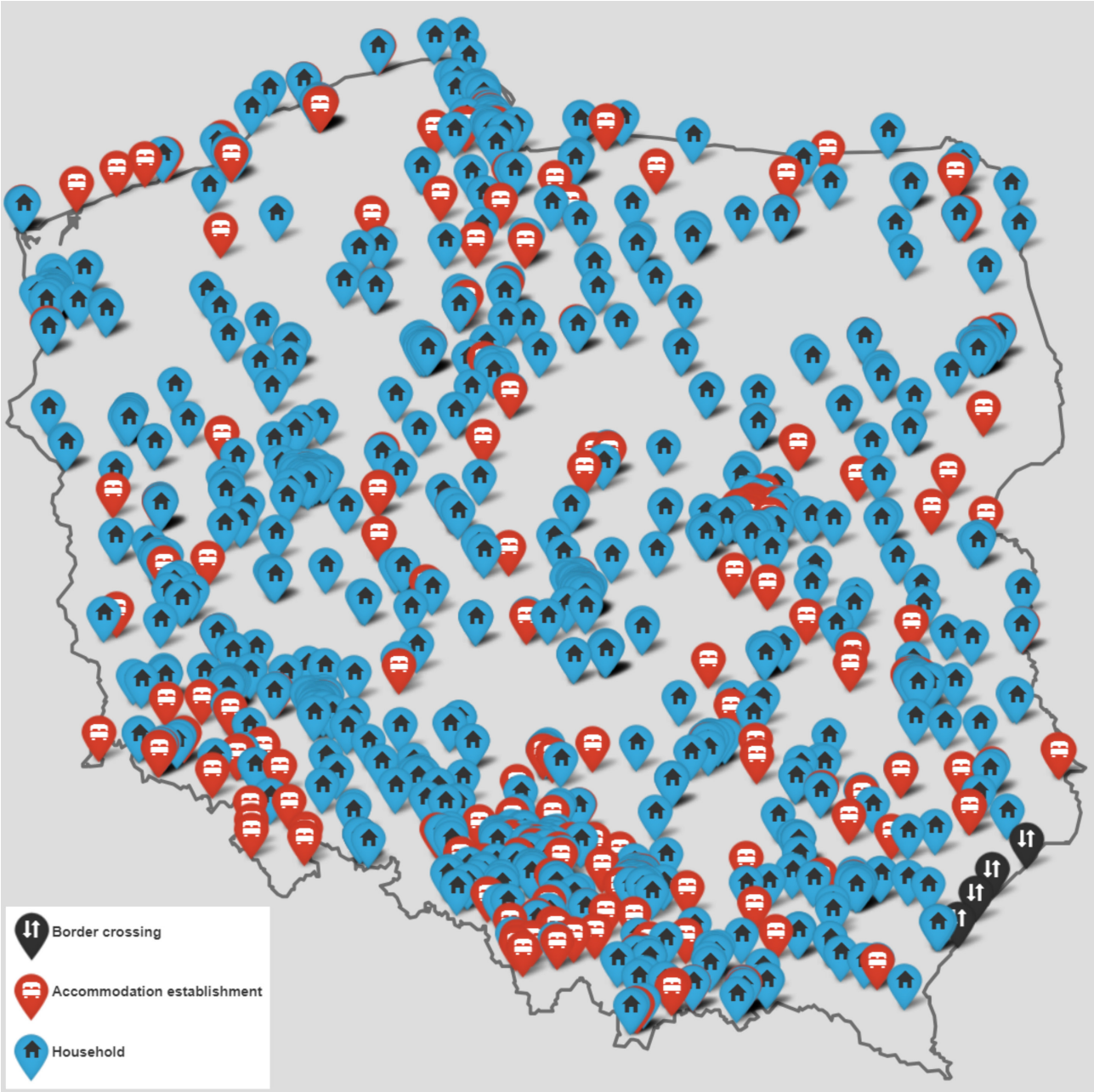
- Health needs of refugees;
- Level of access to healthcare in Poland;
- Information on the share of income/savings allocated to healthcare;
- The type of healthcare accessed (paid-for or free of charge);
- Coronavirus disease (COVID-19) vaccination status of refugees;
- MMR (measles, mumps and rubella), DTP (diphtheria, tetanus and pertussis) and polio (poliomyelitis) vaccination status of children aged 1–4 years;
- Mental health needs and related support needs.

Module II of the questionnaire was designed jointly with WHO and was intended to provide information about the health needs of refugees and their health status in the context of providing future assistance to this population. The questionnaire was designed to be completed by individuals or by groups of people living together (e.g. families).

Implementation

The household survey and accommodation establishment survey were carried out in the last quarter of 2023 across the whole country and at the Polish–Ukrainian border. In total, interviewers collected 1,900 completed questionnaires containing information on approximately 4,800 people. Fig. A2.1 presents the locations of households, temporary accommodation establishments and border crossings where the surveying took place.

Fig. A2.1 Locations where interviews with refugees from Ukraine were conducted



Source: Statistics Poland

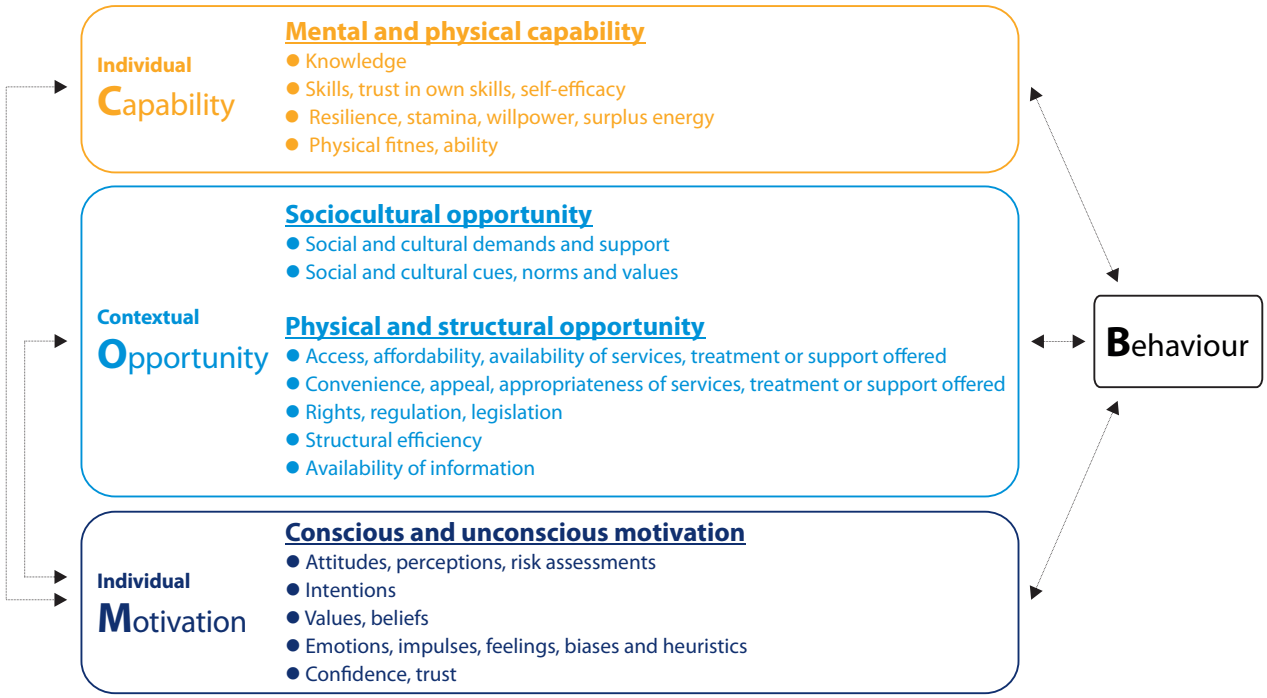
The locations of interviewees were in line with the MNO data. Refugees were located mostly in urban areas, especially in the Polish capital and large cities in the southern and eastern parts of Poland.

The sample weights for the household survey was based on a statistical database of refugee data, which was developed by integrating several administrative data sources. The Border Guard data were used to provide weights for the survey at the border. For the survey of refugees in accommodation establishments, weights were computed based on the results of the survey of tourist accommodation establishments.

Behavioural insights research into health service needs and access for refugees from Ukraine 2023

This research study was carried out with the voluntary participation of people from Ukraine who were living in Poland. The modified COM-B framework (which states that capability, opportunity and motivation are three key factors capable of changing behaviour) provides a holistic approach to enable the barriers to and enablers of behaviour to be explored (Fig. A2.2) *(1)*. This model provided the theoretical framework for this study and guided data collection and analysis. Ethical approval for the study was obtained at both the national level and from the WHO Research Ethics Review Committee.

Fig. A2.2 The modified COM-B framework



Sources: Adapted from *(1)* and *(2)*.

Research questions

The research questions (Annex 1) were designed to identify the following elements:

1. Perceived health-related service needs and expectations of refugees from Ukraine living in different parts of Poland, including those related to prevention, treatment, care and previous health-seeking behaviours;
2. Barriers to and drivers of access to and utilization of healthcare services for refugees from Ukraine living in different parts of Poland, and in different types of accommodation, both for themselves and their children. This included their:
    - capacity to seek healthcare, including awareness of the services available, and knowledge of prevention and treatment needs (e.g. vaccinations, treatment for chronic and acute diseases, and health checks for refugees)
    - motivation, and motivational barriers and drivers to seek healthcare, including perceptions regarding treatment needs (e.g. vaccinations, treatment for chronic and acute diseases, and health checks for refugees)
    - perceived opportunities to access health services in Poland, including possible positive experiences, lessons learned and possible negative experiences (e.g. stigma or discrimination)
    - perceived social support for accessing and using health services (including perceived cultural and social norms), and potential support from family, friends, community groups, local health authorities and health facilities, health workers, community leaders, other refugees, etc.
3. Other behavioural and cultural factors impacting health service uptake.

Study participants

Inclusion criteria for the study were participants being aged 18 years or older, who had left Ukraine due to the war, and who had stayed in Poland for at least 2 weeks. By applying purposive maximum variation sampling, respondents were selected to ensure that they included a representative sample of people by sex who were living in different geographical locations.

Sampling criteria were:

- age (18–49 years versus 50 years and over)
- geographical location.

Participants were recruited by Statistics Poland interviewers who surveyed refugees. During the interviews, the interviewers encouraged respondents to participate in the in-depth interviews, outlining the purpose and explaining the scope of the study.

Statistics Poland conducted 30 in-depth interviews between 25 January and 7 February 2024 with those who expressed an interest in participating in the study. Each interview lasted approximately 30 minutes.

The characteristics of the 30 people from Ukraine who participated in the study are shown in Table A2.1.

Table A2.1 Behavioural insights interview: respondent characteristics

Characteristics	Number of people
Total number	**30**
Voivodship	
Dolnośląskie	1
Kujawsko-pomorskie	2
Lubelskie	3
Lubuskie	1
Małopolskie	3
Mazowieckie	3
Opolskie	2
Podkarpackie	2
Podlaskie	1
Pomorskie	3
Śląskie	3
Warmińsko-mazurskie	1
Wielkopolskie	3
Zachodniopomorskie	2
Age, years	
18–49	24
50+	6
Sex	
Female	26
Male	4

Source: Statistics Poland.

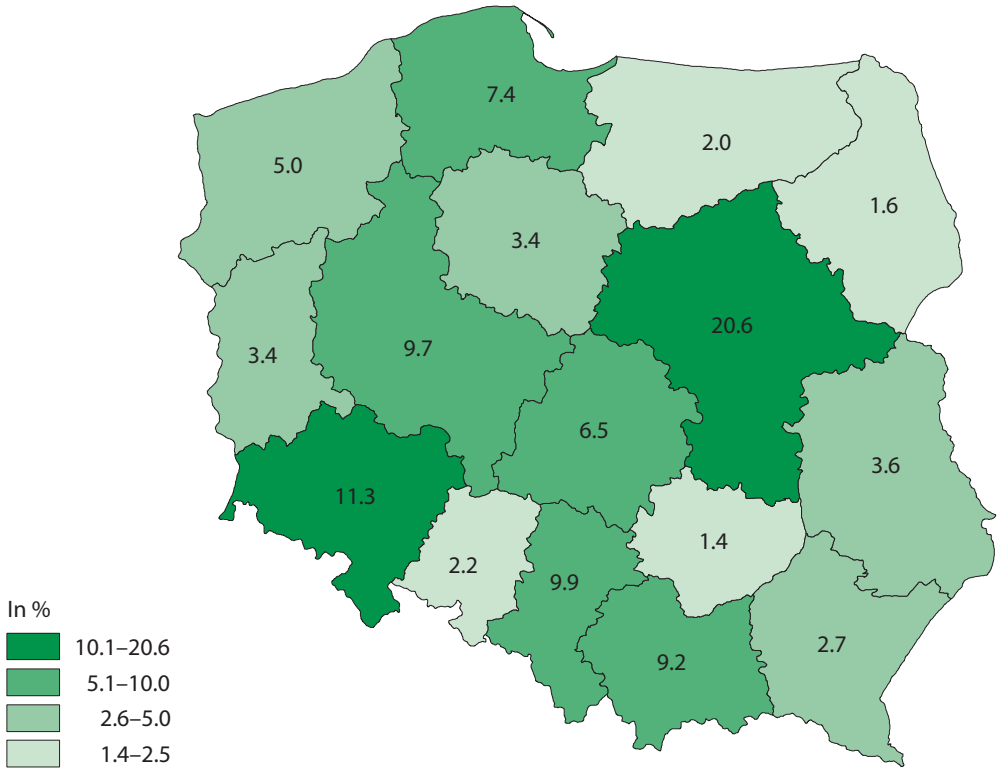
References

1. Habersaat KB, Jackson C. Understanding vaccine acceptance and demand – and ways to increase them. Bundesgesundheitsbl 2020;63(1):32–39 (https://doi.org/10.1007/s00103-019-03063-0, last accessed 14 April 2025).
2. Michie S, Atkins L, West R. The Behaviour Change Wheel. A guide to designing interventions. London: Silverback Publishing; 2014.

Annex 3. Refugee characteristics and demographics: additional information

Fig. A3.1 illustrates the spatial distribution of refugees from Ukraine who were in Poland in 2023 by voivodship. The highest percentage of refugees was recorded in the Mazowieckie voivodship. The highest concentrations of refugee populations were found in the largest urban centres.

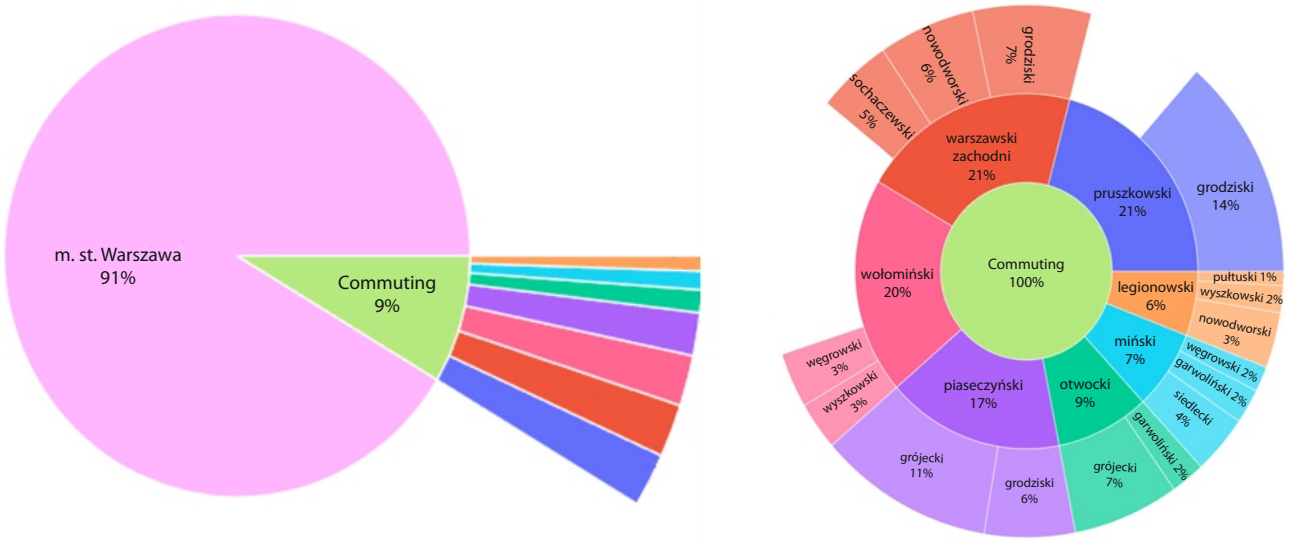
Fig. A3.1 Refugees from Ukraine in Poland by voivodship (NUTS2) in 2023



Note: Information regarding the use of NUTS2 (Nomenclature of Units for Territorial Statistics level 2) is available in *(6)*.
Source: Statistics Poland.

Incorporating more than just survey and administrative data allows for a detailed view of the spatial distribution and movement patterns of refugees. For instance, during the survey period, the estimated number of refugees from Ukraine in Warsaw was 108,000 people. Over 10,000 of these refugees were commuting between Warsaw and neighbouring counties, or were located within close proximity (up to 100 km) of the city. The largest proportion of such trips was recorded from Pruszków county (12%), which is directly adjacent to the capital city, while 41% were trips from counties more than 30 km away. This granular data provides valuable insights into the mobility and settlement patterns of refugees, which are crucial for effective planning and resource allocation.

Fig. A3.2 Refugees commuting from Warsaw to neighbouring counties (Local Administrative Units) in 2023



Source: Statistics Poland.

Fig. A3.3 Place of origin of refugees from Ukraine by oblast in 2023 (thousands)

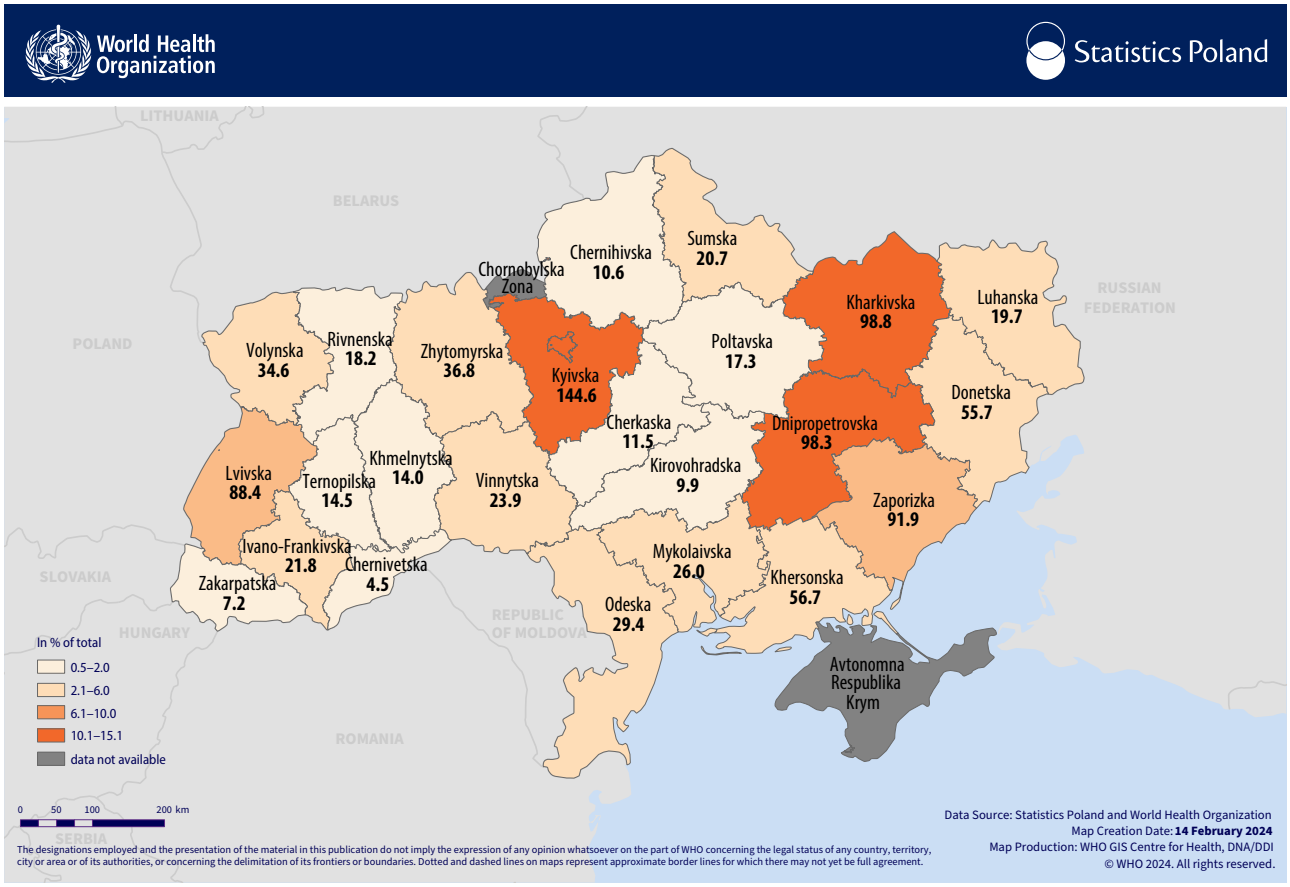


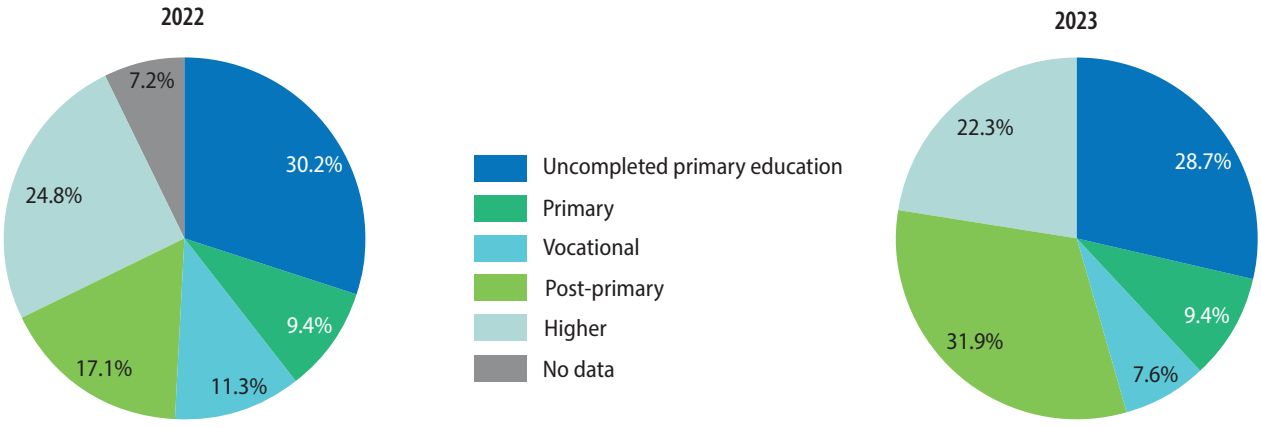
Fig. A3.3 shows the number of refugees from each Ukrainian region who were in Poland in 2023. People from all regions of Ukraine, apart from Crimea, are represented among those who sought shelter. Similar to the situation in 2022, of the refugees who were still in Poland in 2023, the majority had to travel a long way to get to Poland (74.0% of refugees in Poland had lived more than 500 km from a border crossing, slightly more than the 71.7% in 2022). In 2023, 15.2% of refugees lived between 101 and 500 km from the Polish–Ukrainian border crossing point (in 2022 the proportion was approximately 20%) (Fig. A3.4).

Fig. A3.4 Distance of original residence in Ukraine to border crossing point

Source: Statistics Poland.

The 2023 survey showed that, of those who had arrived in Poland as a consequence of the ongoing war, almost one in four were university educated, with 31.9% and 7.6% of the refugees having completed secondary and vocational education, respectively (the figures in 2022 were 17.1% and 11.3%, respectively) (Fig. A3.5). Children under the age of 14 years (i.e. those who had not yet completed primary-level education), accounted for almost one third of the refugees included in the survey.

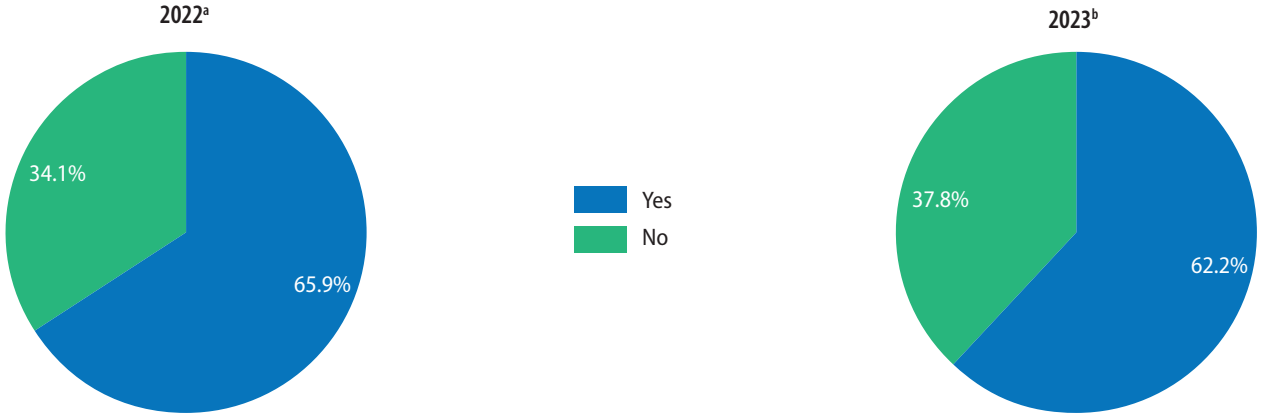
Fig. A3.5 Education status of refugees from Ukraine



Source: Statistics Poland.

In the 2023 survey, almost two out of three respondents (62.2%) declared that they had found employment in Poland; in the previous year's survey, 65.9% had expressed their intention to find employment in Poland (Fig. A3.6).

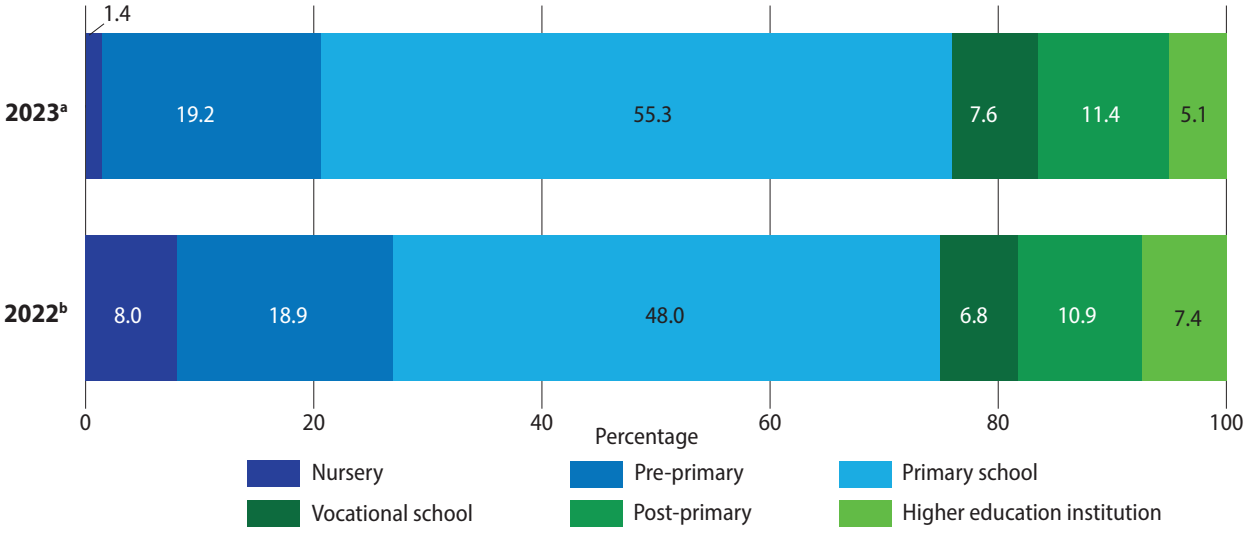
Fig. A3.6 Work in Poland



[a] Refers to people who expressed an intention to work in Poland.
[b] Refers to people who have worked in Poland.
Source: Statistics Poland.

Of those who expressed a wish to pursue education opportunities in Poland, more than one half needed primary school education and one in five needed kindergarten education (Fig. A3.7).

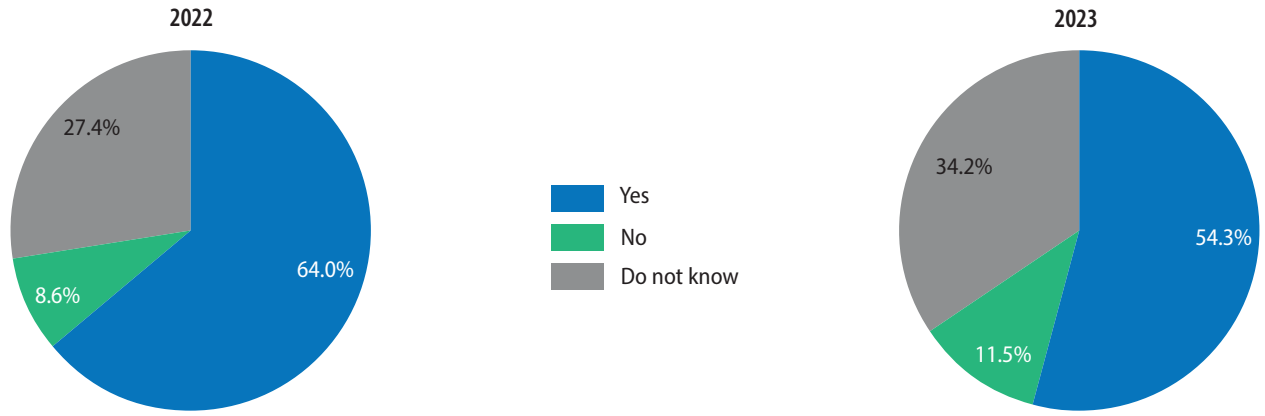
Fig. A3.7 Forms of education accessed by refugees in Poland



[a] Refers to people who had benefited from education in Poland.
[b] Refers to people who expressed an intention to benefit from various forms of education.
Source: Statistics Poland.

In the 2023 survey, fewer respondents said they would like to return to Ukraine after the end of the war than in the 2022 survey (Fig. A3.8). There was also an increase in the percentage of refugees who were undecided about whether they would return to Ukraine. A higher proportion of refugees from Ukraine declared that they did not intend to leave Poland.

Fig. A3.8 Intention to return to Ukraine after the end of military operations



Source: Statistics Poland.

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Annex 4. Behavioural insights: additional information

Behavioural insights research was conducted to gain actionable insights into the healthcare needs and gaps experienced by refugees from Ukraine in Poland, as well as the barriers and facilitators influencing their access to and use of health services.

The qualitative study aimed to complement quantitative findings by providing a deeper understanding of the needs, access to and use of health services among refugees from Ukraine. Through in-depth, semi-structured interviews with refugees, researchers sought to uncover their experiences and perspectives, to inform stakeholders on how to better tailor and deliver support to meet their health needs. This approach aimed to capture rich qualitative data to complement the quantitative survey findings and provide a more holistic understanding of the refugees' experiences.

Understanding the behaviours, perceptions, and social and cultural norms of refugees from Ukraine in Poland is crucial for the development of effective and culturally sensitive healthcare responses. This knowledge can inform the creation of appropriate services, targeted communication strategies, and tailored interventions that address the unique health needs of refugees from Ukraine and overcome barriers to care.

From the behavioural point of view, the interviews revealed a heterogeneous refugee community, with diverse demographic and social characteristics influencing attitudes towards healthcare. Some refugees formed multiplex communities, sharing living spaces, employers and other commonalities, which potentially influenced their healthcare experiences and satisfaction levels.

The majority reported positive experiences with Polish medical care, particularly regarding the quality of free surgical care and the kindness of medical workers. Many refugees who had used the Polish healthcare system, especially for emergencies, reported being very impressed by the quality of medical care. However, there were negative experiences that primarily stemmed from delays in emergency room attendance (e.g. for bleeding, fractures, toothaches and high fevers in children), and long waiting lists for specialist consultations and surgical procedures.

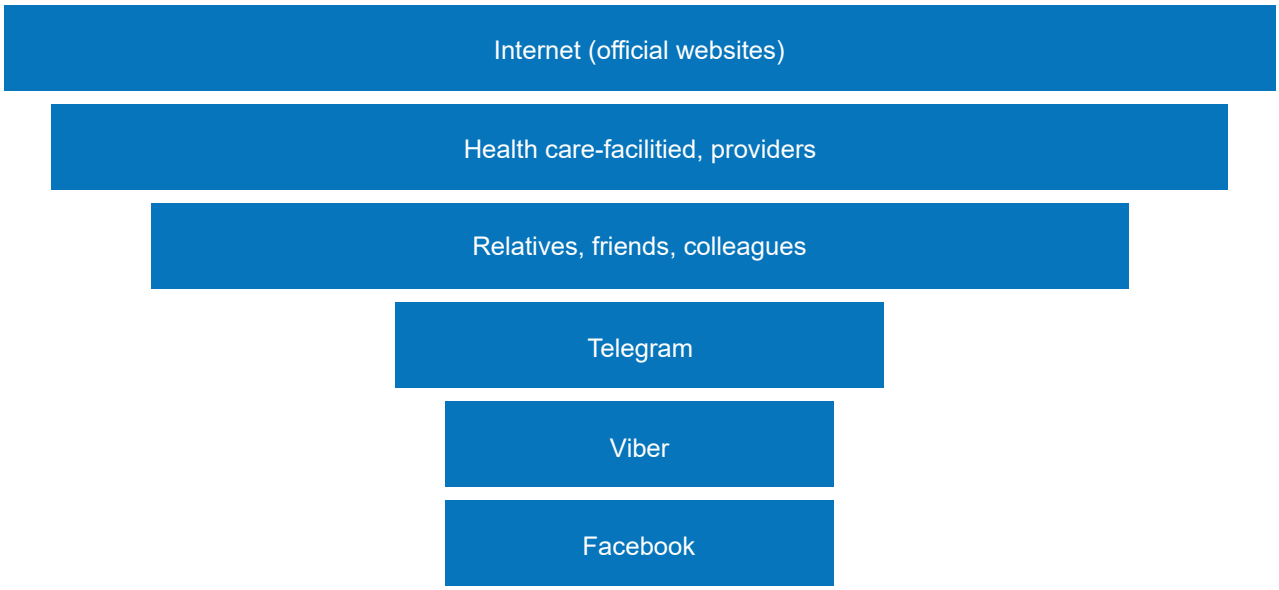
The lengthy waiting times for consultations with specialists (surgeons, endocrinologists, ophthalmologists and dentists) and for surgical procedures, which often spanned weeks or even months, were felt to possibly exacerbate chronic conditions or result in delayed treatment for urgent cases (such as broken limbs, high fever in children and cases of bleeding). Additionally, some respondents experienced multiple referrals before finding a specialist who could address their specific needs, further prolonging the time taken for them to receive appropriate care. Long waiting times for diagnostic test results and subsequent appointments with doctors to discuss findings were also identified as a challenge.

Positive experiences with high-quality care and compassionate healthcare workers significantly increased trust in individual doctors, and contributed to broader trust in the Polish healthcare

system. Respondents often reported feeling safe and confident seeking health services in Poland when needed, and expressed trust in health workers. Although a small proportion of respondents reported negative experiences and feelings of distrust, this remained a minority view. This positive perception of the healthcare system underscores its importance for refugees, as a significant proportion of refugees prioritized seeking healthcare and services.

Respondents reported that they relied on multiples sources of information as the primary means of learning about the Polish health system, including healthcare providers, official websites, personal networks (personal experiences shared by relatives, friends and colleagues) and social media (Facebook, Telegram and Viber) (Fig. A4.1). Respondents expressed trust in these sources. They signalled that the most trusted source of information was fellow refugees' experiences, which they shared in person or through social media.

Fig. A4.1 Sources of information used by refugees



Source: Statistics Poland.

Respondents expressed satisfaction with their use of official websites. This may present an opportunity for refinement since other refugees expressed a gap between the information on official websites and practical application, continuing to experience challenges in navigating healthcare systems despite an abundance of online resources.

The study identified groups of refugees from Ukraine with important levels of social vulnerability who required special attention. These were families with young children, people with special needs and chronic diseases, and also people who found it difficult to adapt to new conditions for varying reasons such as their age, low computer and/or medical literacy, or lower social status.

Key findings on refugee health needs

- **Access to health system:** Refugees reported that their understanding of the Polish healthcare system and access to necessary services had improved over time. They acknowledged

that many healthcare challenges they faced were shared by Polish citizens.

- **Pre-existing health conditions:** Respondents reported having pre-existing health conditions, either their own or those of family members (e.g. children, parents).
- **Satisfaction with specialist care:** Those needing specialist or highly qualified care (e.g. for anaemia, cancer treatment, surgeries, transplants etc.) expressed satisfaction with the quality and accessibility of free services.
- **Dissatisfaction with urgent care access at the emergency room:** Respondents needing urgent care or timely treatment (e.g. bleeding, fractures, infectious diseases, toothaches etc.) were dissatisfied with long waiting times and limited access to emergency room treatment.
- **Information needs:** Many respondents desired more information about specialist and emergency care and vaccination schedules. They primarily relied on official websites, healthcare facilities and personal networks for information.
- **Mental health services:** Some respondents were aware of mental health support services and were offered counselling, but the majority had declined these services.

Main barriers to refugees from Ukraine accessing medical services in Poland

- **Language barriers:** Particularly impactful for older individuals, language barriers hindered effective communication and access to healthcare.
- **Long waiting times:** Extended waiting times for appointments and prescription medications, sometimes lasting weeks or even months, posed significant challenges regarding access to necessary healthcare services.
- **Lack of clarity regarding costs:** Confusion regarding the availability of free versus paid-for services and medications created uncertainty and potential barriers to care.
- **Information gaps:** Additional information about specific services – such as night clinics, emergency care procedures and the nuances of the Polish healthcare system compared with the Ukrainian system – hindered the ability of refugees to navigate and utilize healthcare effectively. This included insufficient guidance on vaccinations for both children and adults, due to misconceptions about the differences between the Polish and Ukrainian vaccination systems, and how to proceed in specific cases.
- **Operating hours:** While the majority of refugees expressed convenient times and locations of health services, some noted that the operating hours of health facilities often conflicted with work schedules or childcare responsibilities, particularly for families with children and working individuals, limiting their access to care.
- **Convenient physical access:** Respondents generally found physical access to healthcare facilities to be convenient.

Main drivers for accessing health services in Poland

- **High value placed on health insurance:** Refugees with both National Health Fund and private health insurance valued their coverage highly for enabling them to access comprehensive health services.
- **Positive provider experiences:** Many healthcare providers demonstrated a willingness to accommodate and effectively communicate with patients from Ukraine.
- **Overcoming language barriers:** A significant proportion of respondents had overcome language barriers, enabling direct communication with doctors and access to necessary advice.
- **Seeking Ukrainian-speaking doctors:** Many respondents sought consultations with Ukrainian doctors practicing in Poland or remotely from Ukraine.
- **Benefits for urgent and chronic conditions:** Refugees with urgent conditions or disabilities particularly benefited from the Polish healthcare system, receiving free access to operations and treatments.

Behaviours and attitudes

- Differences between the Ukrainian and Polish healthcare systems – particularly regarding the prescription for medications, antibiotics, diagnostic procedures and medical tests – were a source of some concern.
- Some respondents reported returning to Ukraine for health services, including for urgent needs and to purchase medicines that were only available by prescription in Poland.
- The majority of refugees reported achieving proficiency in Polish after an extended stay, facilitating effective communication in everyday life.
- The most trusted sources of information about the health system were healthcare facilities and providers, official websites and relatives, friends and colleagues sharing their experiences.
- A large number of refugees were employed and obtained health insurance policies for themselves and family members, gaining access to fast and high-quality medical services.
- A proportion of refugees (those who usually used free services and who did not indicate that they had found work) had not adapted to the healthcare system and needed better information about how to access medical care in Poland (some respondents did not know about the availability of a night medical office, the free services available or the faster receipt of medical services in case of referral to emergency care).
- The respondents estimated that the prices of medicines in Poland were approximately the same as in Ukraine.

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Annex 5. Data sources

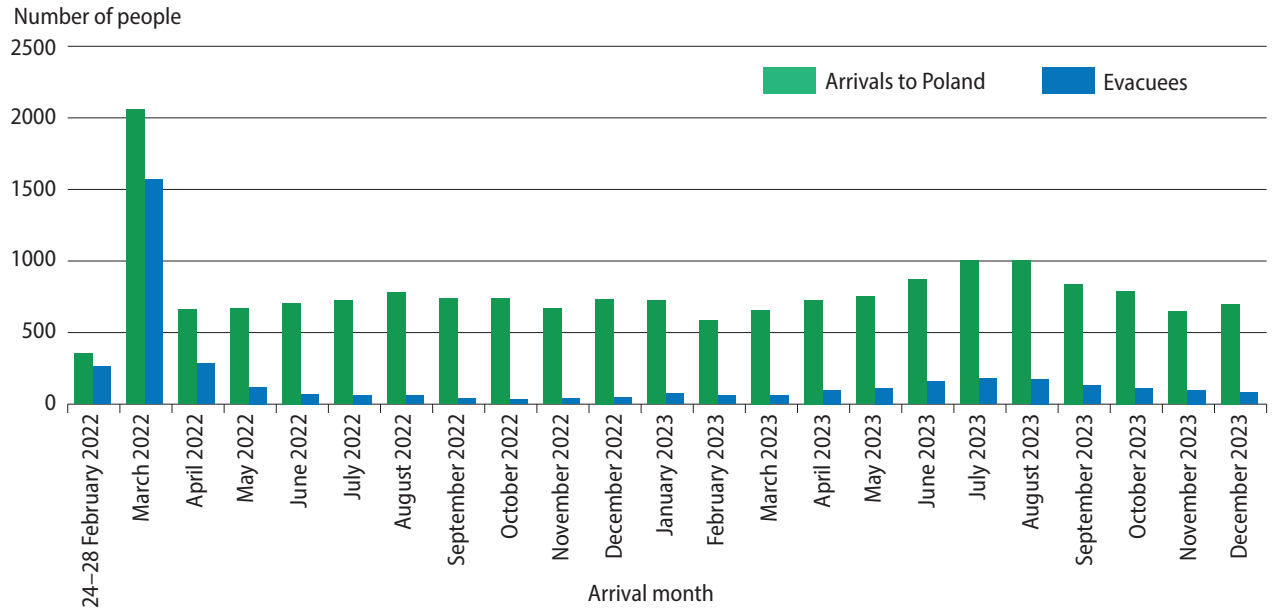
The primary sources of information in the survey of refugees were:

- data from the survey
- information obtained from behavioural insights interviews
- daily and monthly data from an administrative data source – the Border Guard Headquarters (Poland) – for border traffic at the Polish–Ukrainian border
- the Common Electronic System of Population Register (PESEL). [1]

Between 24 February 2022 and 31 December 2023, more than 18.1 million people entered Poland across the Polish–Ukrainian border, of which approximately 3.9 million were evacuees. According to the definition used by Border Guard Headquarters (Poland), evacuees are people who have left the territory of Ukraine due to the military operations, entered Poland from the territory of Ukraine, have been cleared by the Polish Border Guard under border checks (without out-of-system clearance), applied for or declared their intention to apply for international protection in Poland, and declared their intention to stay in the territory of Poland.

Not every person who has entered Poland from Ukraine since 24 February 2022 is a person leaving the territory of Ukraine due to hostilities. There are also people who have come to Poland for other purpose, such as professional work, business, education (students) and humanitarian aid (Fig. A5.1).

Fig. A5.1 Arrivals of Ukrainians crossing the Polish–Ukrainian border



Source: Border Guard Headquarters (Poland) *(1)*.

1 On the basis of the Act of 12 March 2022 on assistance to citizens of Ukraine in connection with the armed conflict on the territory of the country (Journal of Laws of 2022, item 583), refugees from Ukraine who applied were given a PESEL number. As of 31 December 2023, more than 1.7 million numbers have been assigned to refugees from Ukraine. The PESEL register contains, inter alia, date of birth, sex and nationality.

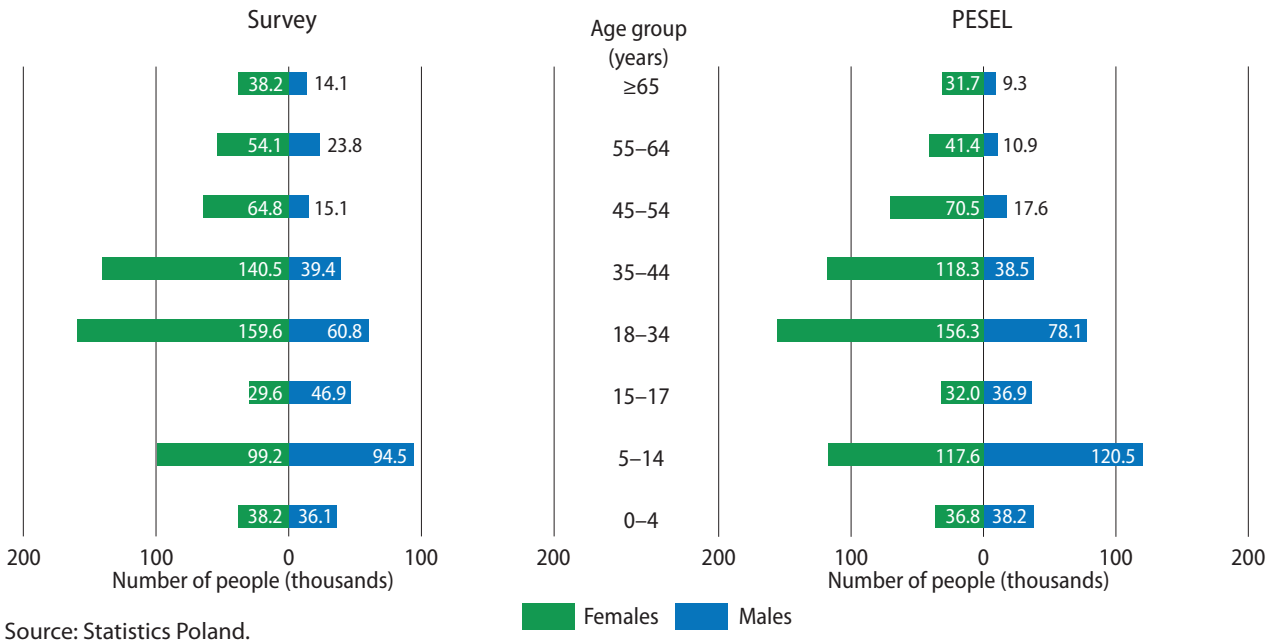
Fig. A5.2 shows the proportion of evacuees from Ukraine who arrived in Poland via Polish–Ukrainian border crossings between 24 February and 31 December 2023 by citizenship. The data refer to all people cleared by the Border Guard during this period who, according to the definition used by Border Guard Headquarters (Poland), had the status of "evacuee", regardless of how long they stayed in the territory of Poland.

Fig. A5.2 Evacuees from Ukraine who arrived in Poland through the Polish–Ukrainian border by citizenship

Source: Border Guard Headquarters (Poland) *(1)*.

After the sudden and massive inflow of refugees across the Polish–Ukrainian border between 24 February and mid-March 2022, border traffic normalized and did not exceed the values recorded at the same time of year in 2019 (before the decrease caused by restrictions on border traffic related to the coronavirus disease pandemic). In March 2022, the number of non-Polish citizens entering Poland via the Polish–Ukrainian border (2.0 million) was more than six times higher than the number leaving Poland (0.3 million). Between 24 February and 10 March 2022, there was a noticeable increase in the number of border crossings by people arriving in Poland: on 6 and 7 March the Border Guard recorded 141,000 crossings. After this period, the number started to decrease, with 22,000 border crossings recorded on 31 March 2022. There was little fluctuation in the number of evacuees arriving in 2023. The scale of border traffic of both arrivals to Poland and evacuees from Ukraine in 2023 did not reach the level that was observed in March 2022.

Fig. A5.3 Number of refugees by sex and age group: 2023 survey and PESEL register data in 2023



Source: Statistics Poland.

Fig. A5.3 shows a comparison of the 2023 survey and PESEL registry data by sex and specific age group. Requests for a PESEL number are voluntary; not all refugees have taken advantage of PESEL registration, even though obtaining a PESEL number enables them to benefit from public services, including free access to healthcare, social assistance benefits, or the payment of taxes and contributions.

References

1. Statistical data on the situation on the border with Ukraine [online database]. Warsaw: Poland's Data Portal; 2024 (https://dane.gov.pl/en/dataset/2705,dane-statystyczne-dotyczace-sytuacji-na-granicy-z-Ukraina/resource/53958/table?page=1&per_page=20&q=&sor, last accessed 14 April 2025).

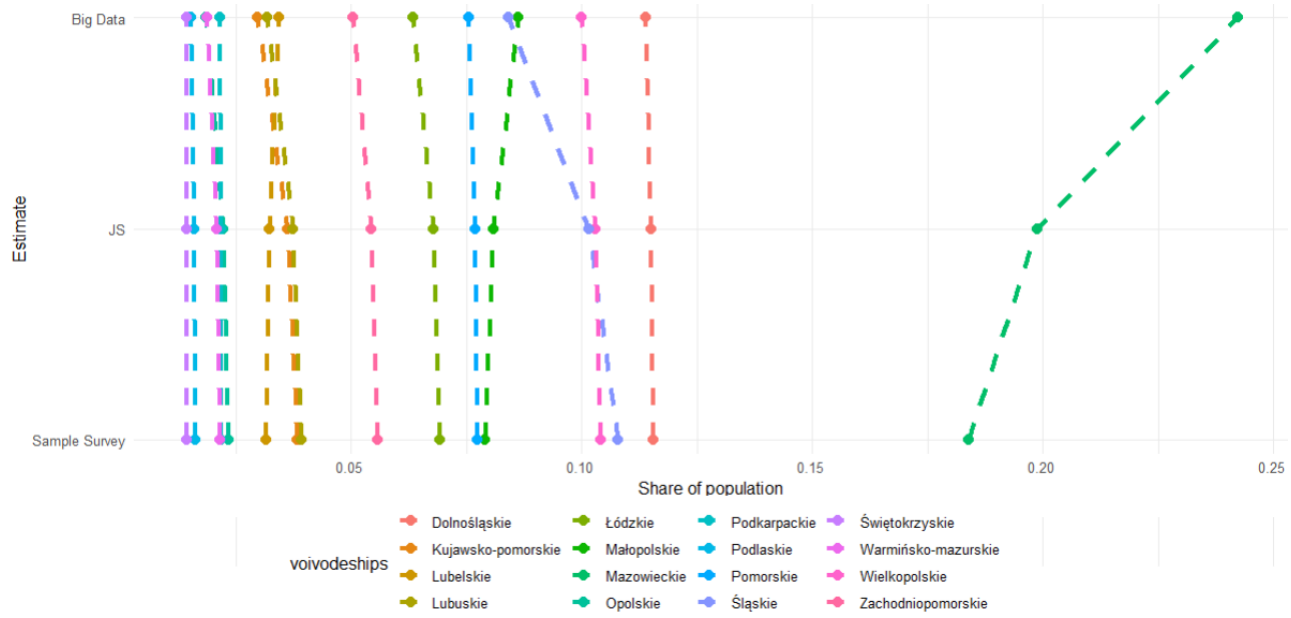
Annex 6. Data integration and innovations

The integration of big data and statistical data presents both opportunities and challenges for the academic community and official statistics. Big data sources provide vast amounts of real-time information, yet they also introduce significant challenges regarding data quality, privacy concerns and methodological complexities. Big data can be prone to sample selection biases and coverage errors, as it may not represent the entire population or specific demographic groups. Traditional statistical methods and models often prove inadequate for analysing big data. Consequently, official statistics must develop advanced analytical techniques, machine learning algorithms and predictive models to extract meaningful insights from big data while maintaining statistical validity and reliability. This necessitates the adaptation of existing methods and the development of new methodologies tailored to the unique characteristics of big data.

When integrating estimates from multiple data sources, various methods of differing complexity can be employed. In this report, a James-Stein type estimator was utilized, which is a shrinkage estimator that uses only the estimates of interest without additional variable information. This estimator is chosen for its simplicity and interpretability, making it widely accessible. The James-Stein estimator provides a practical solution for combining information from multiple sources while addressing potential biases and errors inherent in each source.

For the purposes of this report, vectors of estimates from the sample survey and vectors of estimates from MNO data were combined. The James-Stein estimator is a linear combination of both vectors, utilizing the precision of the estimates and the number of estimates. The following figure presents the results of combining population estimates from the sample survey and vectors of estimates from MNO data with respect to different regions (Fig. A6.1).

Fig. A6.1 James-Stein estimator for combining survey sample and big data



Source: Statistics Poland.

By shrinking the estimates towards a common target, the James-Stein estimator effectively balances the information provided by each source, leading to more reliable and robust estimates.

Recently, researchers have proposed alternative methods that are more complex than the James-Stein estimator. Nevertheless, the principle of shrinkage remains fundamental to these methods. With the availability of additional datasets or greater granularity of currently used mobile phone data, more advanced methods such as Bayesian approach or methods incorporating auxiliary variables will be employed.

Annex 7. Tabular data

This report presents an analysis of the health status and healthcare access of refugees from Ukraine, based on data collected through the 2023 Health of Refugees from Ukraine survey in Poland. To provide a comprehensive understanding, the analysis includes a comparison with findings from the 2022 survey and an examination of behavioral insights research conducted in both years. The detailed tabular data underpinning these analyses are presented in this annex, allowing for a deeper exploration of the survey results.

Table A7.1 Number of refugees from Ukraine in Poland by sex and age group

Age group (years)	Year	Females	Males
		No. (thousands)	
0–4	2022	72.0	65.7
	2023	38.2	36.1
5–14	2022	192.6	183.5
	2023	99.2	94.5
15–17	2022	51.1	54.0
	2023	29.6	46.9
18–34	2022	262.0	48.0
	2023	159.6	60.8
35–44	2022	201.8	31.9
	2023	140.5	39.4
45–54	2022	109.9	16.8
	2023	64.8	15.1
55–64	2022	97.8	28.9
	2023	54.1	23.8
≥65	2022	74.2	31.7
	2023	38.2	14.1

Table A7.2 Sex of refugees from Ukraine in Poland by age group

Age group (years)	Females		Males	
	2022	2023	2022	2023
	Percentage			
0–4	52.3	51.5	47.7	48.5
5–14	51.2	51.2	48.8	48.8
15–17	48.6	38.7	51.4	61.3
18–34	84.5	72.4	15.5	27.6
35–44	86.4	78.1	13.6	21.9
45–54	86.7	81.1	13.3	18.9
55–64	77.2	69.4	22.8	30.6
≥65	70.0	73.1	30.0	26.9

Table A7.3 Number of refugees from Ukraine in Poland in 2023 by month of arrival

Month of arrival	Total	
	No. (thousands)	Percentage
24 February–31 March 2022	545.8	57.2
April–June 2022	207.0	21.7
July–September 2022	120.1	12.6
October–December 2022	38.0	4.0
January–March 2023	13.9	1.5
April–June 2023	5.3	0.6
July–September 2023	16.9	1.8
October–November 2023	7.8	0.8

Table A7.5 Reported health status[a] of refugees from Ukraine by age group

Healthcare need	2022			2023		
	0–17	18–64	≥65 years	0–17	18–64	≥65 years
	No. (thousands)					
Acute illnesses	152.6	82.9	13.1	163.3	99.8	12.0
Physical traumatic conditions	–	–	–	22.9	10.0	0.2
Chronic illnesses in total	25.3	128.5	65.3	13.1	80.6	29.8
Cardiovascular diseases	4.1	53.1	42.8	1.9	34.6	17.0
Pulmonary diseases	4.5	9.5	9.7	1.9	5.5	3.5
Diabetes	2.9	19.4	13.8	0.8	8.4	7.4
Renal/kidney diseases	2.1	9.0	5.4	0.4	8.1	1.5
Cancer	1.7	15.0	7.2	0.3	8.5	3.9
Other chronic	12.7	52.9	15.9	8.5	31.1	12.2
Infectious diseases, COVID-19[b]	3.0	10.6	2.3	29.5	36.4	2.6
Mental health	4.8	17.0	3.8	7.0	19.3	3.2
Sexual and reproductive health	–	8.8	–	0.2	5.8	–
Dental services	38.7	57.9	6.5	32.7	56.3	6.0
Other	14.5	33.9	7.7	9.2	30.9	4.7

[a] Refers to people needing healthcare in the 30 days prior to the survey. Respondents could give more than one answer.
[b] In 2022, infectious diseases (hepatitis, HIV, tuberculosis) were a subcategory under chronic diseases; COVID-19 was a separate category. In 2023, infectious disease was defined as a category that included influenza, COVID-19 and other chronic infectious diseases (hepatitis, HIV, tuberculosis).

Table A7.6 Refugees' health conditions and care sought[a]

Health conditions/care sought	2022	2023	2022	2023
	No. (thousands)		Percentage	
Acute illnesses	248.5	275.1	43.9	58.4
Chronic illnesses	219.1	123.5	38.7	26.2
Dental services	103.1	95.0	18.2	20.2
Infectious diseases, COVID-19[b]	15.9	68.4	2.8	14.5
Physical traumatic conditions	–	33.1	–	7.0
Mental health	25.6	29.6	4.5	6.3
Sexual and reproductive health	8.8	6.0	1.5	1.3
Orthopaedic problems[c]	7.0	9.3	1.2	2.0
Ophthalmological problems[c]	5.3	3.8	0.9	0.8
Neurological problems[c]	6.9	3.5	1.2	0.7
Allergological problems[c]	2.0	3.0	0.4	0.6
Endocrinological problems[c]	5.3	1.5	0.9	0.3
Other	29.6	23.6	5.2	5.0

[a] Refers to people needing healthcare in the 30 days prior to the survey. Respondents could give more than one answer.
[b] In 2022, infectious diseases (hepatitis, HIV, tuberculosis) were a subcategory under chronic diseases; COVID-19 was a separate category. In 2023, infectious disease was defined as a category that included influenza, COVID-19 and other chronic infectious diseases (hepatitis, HIV, tuberculosis).
[c] Most frequent responses from the "other" category.

Table A7.7 Refugees' health conditions and care sought for chronic illness[a]

Health conditions/care sought	2022	2023	2022	2023
	No. (thousands)		Percentage	
Cardiovascular diseases	100.0	53.5	17.7	11.4
Diabetes	36.0	16.7	6.4	3.5
Cancer	23.9	12.7	4.2	2.7
Pulmonary diseases	23.7	10.9	4.2	2.3
Renal/kidney diseases	16.5	9.9	2.9	2.1
Endocrinological problems[b]	7.1	4.9	1.3	1.0
Neurological problems[b]	4.3	2.9	0.8	0.6
Other chronic diseases	70.1	43.9	12.4	9.3

[a] Refers to people needing healthcare in the 30 days prior to the survey. Respondents could give more than one answer.
[b] Most frequent responses from the "other chronic diseases" category.

Table A7.8 Need for healthcare in the 30 days prior to the survey

Need for healthcare	2022	2023
	Percentage	
No	62.6	50.7
Yes	37.2	49.3
No answer	0.2	–

Table A7.9 Need for healthcare by age group

Need for healthcare	Yes		No		Yes		No	
	2022	2023	2022	2023	2022	2023	2022	2023
	No. (thousands)				Percentage			
Total	566.5	466.8	952.9	479.7	37.3	49.3	62.7	50.7
0–17	224.7	199.5	393.0	141.2	36.4	58.6	63.6	41.4
18–64	266.1	227.3	529.9	326.6	33.4	41.0	66.6	59.0
≥65 years	75.6	40.0	30.0	11.8	71.6	77.2	28.4	22.8

Table A7.10 Access to healthcare[a]

Access to healthcare	2022	2023
	Percentage	
Access	92.9	97.1
Lack of access	2.4	2.9
No answer	4.7	–

[a] Refers to people needing healthcare in the 30 days prior to the survey.

Table A7.11 Barriers to accessing healthcare[a]

Barrier	2022	2023
	Percentage	
Long waiting times[b]	6.2	75.3
Required prescriptions, cost of medication	–	31.6
Cost of services	33.1	18.7
Information barrier	49.9	14.0
Logistics to attend facilities	14.0	10.5
Unavailability of medical care or treatment	6.0	4.2
Other	14.4	3.1
No answer	3.2	–

[a] Refers to people needing healthcare in the 30 days prior to the survey. Respondents could give more than one answer.
[b] In 2022 survey, this was the most frequent responses from the "other" category; in 2023 survey it was a separate category.

Table A7.12 Barriers to accessing healthcare[a] by type of refugee accommodation

Barrier	Permanent residence	Temporary accommodation
	Percentage	
Information barrier	14.0	13.2
Cost of services	18.5	35.9
Required prescriptions, costs of medication	31.3	56.8
Logistics to attend facilities	10.3	20.8
Long waiting times	75.3	69.8
Unavailability of medical care or treatment	4.2	8.5
Other	3.1	1.3

[a] Refers to people needing healthcare in the 30 days prior to the survey. Respondents could give more than one answer.

Table A7.13 Declared vaccination status of children aged 1–4 years

Vaccination status	MMR		DTP		Polio	
	2022	2023	2022	2023	2022	2023
	Percentage					
Vaccinated	78.0	87.1	78.6	86.4	73.0	86.3
Unvaccinated	14.8	7.3	14.0	7.8	15.1	7.5
Don't know	4.8	5.6	5.0	5.8	9.6	6.2
No answer	2.4	–	2.4	–	2.4	–

DTP: diphtheria, tetanus, pertussis/whooping cough; MMR: measles, mumps, rubella; Polio: poliomyelitis.

Table A7.14 Declared COVID-19 vaccination status of adult refugees from Ukraine

Vaccination status	2022	2023
	Percentage	
Unvaccinated	39.9	48.7
Vaccinated	54.9	49.5
No answer	5.2	1.8

Table A7.15 Declared number of COVID-19 vaccine doses received by adult refugees from Ukraine

Number of doses received	2022	2023
	Percentage	
2 doses	80.6	83.0
1 dose	10.6	7.7
3 doses	8.8	9.3

Table A7.16 Declared COVID-19 vaccination status of refugees from Ukraine by age group

Vaccination status	5–17		18–54		≥55 years	
	2022	2023	2022	2023	2022	2023
	Percentage					
Vaccinated	7.8	2.5	56.2	50.2	51.3	46.8
Unvaccinated	87.9	93.6	38.6	48.7	43.7	48.8
No answer	4.3	3.9	5.2	1.1	4.9	4.3

Table A7.17 Responses to "Is there anyone in your household currently so upset and anxious that it affects the person's daily functioning?"

Responses	2022	2023
	Percentage	
Yes	10.2	10.2
No	74.3	87.0
No answer	15.4	2.8

Table A7.18 Persons having problems with daily functioning due to mental health problems by age group

Age group (years)	Persons having problems with daily functioning		No answer	
	2022	2023	2022	2023
	Percentage			
Total	10.2	10.2	15.4	2.8
0–4	4.2	3.7	10.1	1.9
5–14	6.8	8.8	13.9	3.2
15–17	10.5	9.0	20.0	2.8
18–34	7.8	7.4	17.5	3.0
35–44	10.5	11.4	14.7	2.5
45–54	14.4	14.7	15.1	2.3
55–64	19.4	11.3	19.3	2.7
≥65	20.7	25.4	14.6	3.3

Table A7.19 Persons having problems with daily functioning due to mental health problems by type of refugee accommodation

Persons having problems with daily functioning	Permanent residence	Temporary accommodation
	Percentage	
Yes	10.1	19.3
No	87.2	77.6
No answer	2.8	3.2

Table A7.20 Share of refugees' income/savings spent on healthcare costs[a]

Proportion of income/savings	2022	2023
	Percentage	
Less than 10%	39.1	58.0
Between 10 and 25%	23.9	29.2
More than 25%	25.0	12.9
No answer	12.0	–

[a] Refers to people needing healthcare in the 30 days prior to the survey.

Table A7.21 Type of healthcare services accessed in 2023[a]

Type of care accessed	Percentage
Free medical care	90.4
Medical care paid in cash	16.0
Medical care paid by card	9.7

[a] Refers to people needing healthcare in the 30 days prior to the survey. Respondents could give more than one answer.

Table A7.22 Need of acquiring medicine in 2023[a]

Need of acquiring medicine	Percentage
Yes	80.1
No	12.3
No answer	7.5

a Refers to people needing healthcare in the 30 days prior to the survey.

Table A7.23 Type of free and paid healthcare services accessed in 2023

Type of healthcare service	Free medical care	Paid medical care
	Percentage	
Dental services	66.2	33.8
Mental health	73.7	26.3
Sexual and reproductive health	78.9	21.1
Chronic illnesses	86.6	13.4
Infectious diseases, COVID-19	91.5	8.5
Acute illnesses	92.3	7.7
Physical traumatic conditions	94.3	5.7
Other	82.1	17.9

Table A7.24 Share of income/savings spent on healthcare costs by type of refugee accommodation[a]

Proportion of income/savings	Permanent residence	Temporary accommodation
	Percentage	
Less than 10%	58.2	38.3
Between 10 and 25%	29.1	37.3
More than 25%	12.7	24.5

[a] Refers to people needing healthcare in the 30 days prior to the survey.

Table A7.25 Share of spending on medical services as percentages[a]

Voivodship	Survey data		Big data	
	Paid	Free	Paid	Free
	Percentage			
Dolnośląskie	10.7	89.3	23.4	76.6
Kujawsko-pomorskie	15.8	84.2	21.0	79.0
Lubelskie	23.0	77.0	25.3	74.7
Lubuskie	17.5	82.5	18.8	81.3
Łódzkie	16.0	84.0	21.7	78.3
Małopolskie	24.4	75.6	27.0	73.0
Mazowieckie	19.7	80.3	22.0	78.0
Opolskie	8.1	91.9	8.7	91.3
Podkarpackie	15.4	84.6	16.1	83.9
Podlaskie	14.2	85.8	19.1	80.9
Pomorskie	17.2	82.8	23.6	76.4
Śląskie	25.4	74.6	27.0	73.0
Świętokrzyskie	22.1	77.9	24.0	76.0
Warmińsko-mazurskie	11.9	88.1	13.6	86.4
Wielkopolskie	9.4	90.6	13.2	86.8
Zachodniopomorskie	22.0	78.0	22.2	77.8

[a] Survey data estimates derived from administrative data weights (March 2023) and updated MNO data weights (December 2023).

Table A7.26 Refugees from Ukraine in Poland by voivodship (NUTS2) in 2023

Voivodship	Percentage
Dolnośląskie	11.3
Kujawsko-pomorskie	3.4
Lubelskie	3.6
Lubuskie	3.4
Łódzkie	6.5
Małopolskie	9.2
Mazowieckie	20.6
Opolskie	2.2
Podkarpackie	2.7
Podlaskie	1.6
Pomorskie	7.4
Śląskie	9.9
Świętokrzyskie	1.4
Warmińsko-mazurskie	2.0
Wielkopolskie	9.7
Zachodniopomorskie	5.0

Table A7.27 Place of origin of refugees from Ukraine by oblast in 2023

Oblast	No. (thousands)	Percentage
Cherkaska	11.5	1.2
Chernihivska	10.6	1.1
Chernivetska	4.5	0.5
Dnipropetrovska	98.3	10.3
Donetska	55.7	5.8
Ivano-Frankivska	21.8	2.3
Kharkivska	98.8	10.3
Khersonska	56.7	5.9
Khmelnytska	14.0	1.5
Kirovohradska	9.9	1.0
Kyivska	144.6	15.1
Luhanska	19.7	2.1
Lvivska	88.4	9.3
Mykolaivska	26.0	2.7
Odeska	29.4	3.1
Poltavska	17.3	1.8

Table A7.27 Place of origin of refugees from Ukraine by oblast in 2023 (cont.)

Oblast	No. (thousands)	Percentage
Rivnenska	18.2	1.9
Sumska	20.7	2.2
Ternopilska	14.5	1.5
Vinnytska	23.9	2.5
Volynska	34.6	3.6
Zakarpatska	7.2	0.8
Zaporizka	91.9	9.6
Zhytomyrska	36.8	3.9

Table A7.28 Distance of original residence in Ukraine to border crossing point

Distance	2022	2023
	Percentage	
Up to 100 km	9.1	10.7
From 101 to 500 km	19.2	15.2
From 501 to 1,000 km	36.8	31.4
1,001 km and over	34.9	42.6

Table A7.29 Education status of refugees from Ukraine

Education status	2022	2023
	Percentage	
Uncompleted primary education	30.2	28.7
Primary	9.4	9.4
Vocational	11.3	7.6
Post-primary	17.1	31.9
Higher	24.8	22.3
No data	7.2	–

Table A7.30 Work in Poland

Work in Poland	2022[a]	2023[b]
	Percentage	
Yes	65.9	62.2
No	34.1	37.8

[a] Refers to people who expressed an intention to work in Poland.
[b] Refers to people who have worked in Poland.

Table A7.31 Forms of education accessed by refugees in Poland

Work in Poland	2022[a]	2023[b]
	Percentage	
Nursery	8.0	1.4
Pre-primary	18.9	19.2
Primary school	48.0	55.3
Vocational school	6.8	7.6
Post-primary	10.9	11.4
Higher education institution	7.4	5.1

[a] Refers to people who expressed an intention to benefit from various forms of education.
[b] Refers to people who had benefited from education in Poland.

Table A7.32 Intention to return to Ukraine after the end of military operations

Intention to return to Ukraine	2022	2023
	Percentage	
Yes	64.0	54.3
No	8.6	11.5
Do not know	27.4	34.2

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World Health Organization
Regional Office for Europe

UN City, Marmorvej 51,
DK-2100, Copenhagen Ø, Denmark
Tel.: +45 45 33 70 00
Fax: +45 45 33 70 01
Email: eurocontact@who.int Website:
https://www.who.int/europe

9789289062381