

Intercultural Guidance for Displaced Ukrainians and those Supporting Them

Sara Jones
Natalia Kogut
Irina Kuznetsova



UNIVERSITY OF
BIRMINGHAM

We advance
We activate

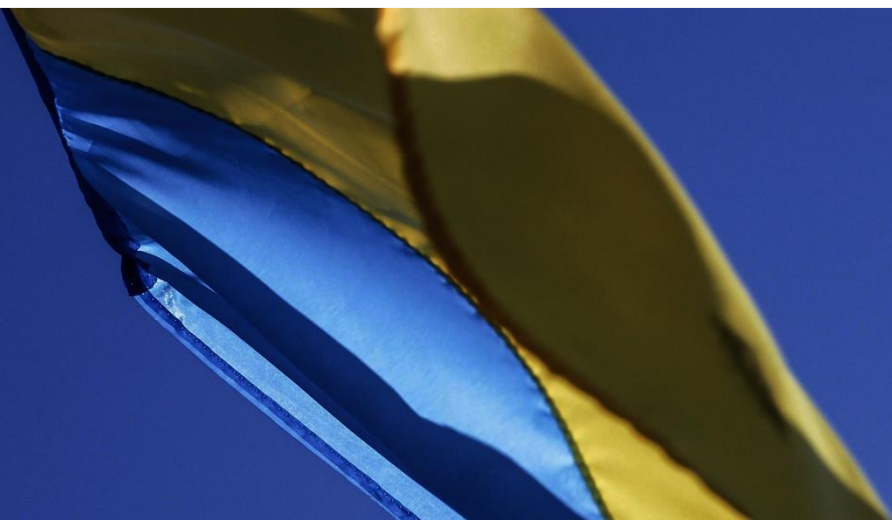
birmingham.ac.uk

We have produced this guidance to support intercultural understanding between displaced Ukrainians living in the UK and those who are supporting them. Intercultural understanding means knowing more about the other culture and way of life, but it also means recognising any preconceptions you might hold about that culture. Addressing those preconceptions can help avoid conflict and ensure positive relationships. Knowing what kind of assumptions might be made about displaced Ukrainians in the UK can also help navigate the challenges of building a life here. We have developed this guidance based on our research with Ukrainian communities and Homes for Ukraine hosts and with their input and advice

War in Ukraine

Ukrainians arriving in the UK through “Homes for Ukraine” have been through the traumatic experience of war and displacement. The current war in Ukraine began in February 2022; however, there is a much longer history of Russian interference and aggression in Ukraine. This includes the war in Eastern Ukraine, which started in 2014, and the annexation of the Crimean Peninsula. Some of those displaced in 2022 will have experienced displacement previously: this may not be the first time they have been forced to flee their home. Almost all Ukrainians will know someone who has been killed in the war, and/or have loved ones still living in Ukraine and in the armed forces. According to statistics provided by the United Nations, there have been 12,605 civilian deaths since the full-scale invasion, but there are likely far more unreported casualties. Russia’s full-scale invasion has reportedly destroyed or damaged 13% of Ukraine’s housing stock, affecting more than 2.5 million households. Multiple displacements, loss of family and friends, and the destruction of property necessarily have a significant impact on mental health.

Ukrainians often feel that the British public has forgotten about the war in Ukraine: those we spoke to described meeting individuals who thought the war was over, or even “fake”. On the other hand, British people are sometimes surprised when Ukrainians return to Ukraine for short periods. They often do so to visit loved ones who are not able to travel; for example, husbands, sons, and fathers who have not been allowed to leave the country and who may have been conscripted. This does not mean any part of Ukraine is “safe”. The impact of the war has been greatest in the Eastern and Central parts of the country; however, Western Ukraine is still subject to missile attacks and has suffered casualties. Ukrainians report that the constant sirens do not allow for any feeling of safety or security.



Who is coming to the UK from Ukraine?

As of 16 December 2024, approximately 218,600 Ukrainians had arrived in the UK via the Ukrainian humanitarian schemes (Ukraine Sponsorship Scheme (“Homes for Ukraine”) and the – now discontinued – Ukraine Family Scheme). The most recent data from the Office for National Statistics (ONS, April 2024) indicates that 70% of the adults arriving are women, and 77% are between the ages of 18 and 49. Those coming to the UK tend to be highly educated, with roughly 80% holding a bachelor's degree or higher: roughly 69% are currently working in the UK. Most of the 7,594 Ukrainians surveyed (78%) stated that they feel a very or somewhat strong personal connection to the UK.¹

This is evidence that the Ukrainians who have come to the UK via the Ukraine Humanitarian Schemes have generally felt very welcome. However, that is not to say they have not encountered discrimination. Research by the University of Birmingham² reports the impact of harmful stereotypes – or “Eastern Europeanism” – on the efforts of displaced Ukrainians to rebuild their lives in the UK in terms of housing, work, healthcare, and education. “Eastern Europeanism” is a form of discrimination that positions Eastern Europe as “backward”, and migrants from the region as low-skilled and uneducated (the stereotype of the Polish cleaner, or the Romanian fruit-picker).³ It is important for those supporting displaced Ukrainians to understand and recognise this phenomenon and its effects, which may be made worse by a hostile perception of refugees and displaced people.

¹ Office for National Statistics: *Visa holders living in the UK under the Ukraine Humanitarian Schemes, follow-up survey: 15 April to 22 April 2024*: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/internationalmigration/bulletins/visaholdersenteringtheukundertheukrainehumanitarianschemes/15aprilto22april2024> . Sample size 7,594.

² Charlotte Galpin et al., *Support for Displaced Ukrainians: The Role of History and Stereotypes*. Available at: <https://postsocialistbritain.bham.ac.uk/outputs/12/>.

³ Ivan Kalmar (2022), *White but not Quite: Central Europe's Illiberal Revolt* (Bristol: Bristol University Press).

What does the “Homes for Ukraine” scheme offer?

The “Homes for Ukraine” scheme is a humanitarian visa route that offers Ukrainians displaced by the war a visa to come to the UK to live, work, study and claim benefits for a restricted period of time (initially 3 years, now 18 months). The UK government announced in February 2024 that displaced Ukrainians would be able to apply for an 18-month extension to their visa within the last 28 days of their existing visa.⁴ In November 2024, the government made explicit that the time Ukrainians have spent in the UK on humanitarian visas will not count towards the Long Residence route to settlement in the UK.⁵

Ukrainians have thus been granted safe passage to come to the UK, but with limited status and currently no clear route to a longer-term right to remain. This creates pressure and uncertainty for Ukrainians and makes it difficult for them to plan. It presents barriers in terms of securing job contracts, tenancy agreements, loans for start-ups, or mortgages. One of our interviewees stressed:

I was refused because it is not possible to extend my visa and after the end of this apprenticeship, they expect that you will work for them for a while. ... we don't have enough visa time, and the more time goes by, the more you can't find a job because... employers don't like it.

After 3 years of war, many Ukrainians have built a life in the UK, have jobs, and children attending school. They may have lost their homes in Ukraine. Many will want to return to Ukraine at the end of the war, but being forced to do so may be experienced as a secondary (or tertiary) displacement from the country they now call home. Of the Ukrainians surveyed by the ONS in April 2024, 88% intended to apply for an extension to their visas. 68% said that they would prefer to remain in the UK, even if it were safe to return to Ukraine. As one of our interviewees said:

Children are settled at school, they have friends. They are happy now. They have already left their friends in Ukraine, and it would be difficult to do it again. My fear is that we may have to start everything again.

⁴ Applications opened early in February 2025: <https://www.gov.uk/government/publications/ukraine-permission-extension-scheme-information/ukraine-permission-extension-scheme-information>

⁵ Government statement on changes to immigration rules: <https://questions-statements.parliament.uk/written-statements/detail/2024-11-26/hcws250>



Ukrainian Culture and History

The April 2024 ONS survey showed that most Ukrainians (95%) are very or fairly satisfied with their current sponsorship arrangement, but for 67% this is not the same sponsor as the individual they were first matched with. 13% of those who have changed sponsor state that their original hosting arrangement ended early and 17% that they experienced difficulties with their first host. Our research indicates that frictions in hosting relationships may be caused by intercultural misunderstandings and unhelpful assumptions about Ukraine's level of development.⁶ Hosts learning a little about Ukrainian culture and history can support positive relationships. Particularly important in the current context is understanding the historical relationship between Ukraine and Russia and the emergence of Ukrainian national identity. This short video gives an overview from a Ukrainian perspective and we would recommend it to hosts: [Living in the UK after Communism: Ukraine - YouTube](https://www.youtube.com/watch?v=rGN0NXhaeWE).⁷

Language is an important part of identity and it has become even more so in the context of the current war. Some Ukrainians speak only Ukrainian (mostly from Western Ukraine), whilst some people speak only Russian (mostly from Eastern Ukraine); some people have command of both languages or use a mixture of the two. Since the full-scale invasion some Ukrainians (including Russian-speakers) have begun to view Russian as the language of the aggressor – being forced to use it may be retraumatising.⁸

⁶ See Galpin et al., *Support for Displaced Ukrainians*.

⁷ Full URL: <https://www.youtube.com/watch?v=rGN0NXhaeWE>

⁸ See Galpin et al., *Support for Displaced Ukrainians*

Ukraine is an ethnically diverse country with significant minority populations, including Crimean Tatars, Romanians, Bulgarians, Hungarians, Armenians, Jews and Poles.

There is also a sizeable Roma community which has a long history of discrimination.⁹ While Britain is home to a significant population from the global majority, with approximately 18 % coming from non-white ethnic groups,¹⁰ international migration is a relatively recent phenomenon for Ukraine.

There has been significant progress around LGBTQ+ rights in Ukraine in recent years, including in social and cultural attitudes. However, same-sex marriage remains illegal and same-sex couples cannot adopt. In 2024, Ukraine was ranked 40th out of 49 European countries for LGBTQ+ rights (Britain ranks 15th in the same assessment).¹¹ Racism, homophobia and transphobia are present in both countries and should be confronted wherever they are found. However, hosts and guests may need to recognise that they are starting from a different set of social and cultural norms, attitudes, and understandings.

Housing – Hosting and “Moving On”

Friction between “Homes for Ukraine” hosts and guests can happen because of everyday differences between the two cultures: some of which we list below. Being aware of these differences can help hosts and guests understand each other. Hosts and Ukrainians that we have spoken to strongly recommend setting expectations in advance (e.g., through a set of written house rules that the two parties agree). Ukrainians should familiarise themselves with differences in ways of life between the UK and Ukraine and engage in setting the “house rules” with their hosts prior to arrival.

Hosts would also advise anyone thinking of offering sanctuary to speak with others who have participated in the scheme to better prepare them. Hosts should be conscious of the fact that their guests have fled a war and may be struggling with their mental health, that they will need private space, but also use of common areas (kitchen, living room, bathrooms). Many hosts spoke very positively about their experiences and warmly about their current and former guests. However, they also noted that it was a significant and often time-consuming commitment – and one that may be extremely stressful for all parties if the relationship breaks down.

⁹ <https://minorityrights.org/app/uploads/2024/01/mrq-rep-ukraine-en-apr19.pdf>

¹⁰ <https://www.ethnicity-facts-figures.service.gov.uk/>

¹¹ <https://rainbowmap.ilga-europe.org/countries/ukraine/>



Many displaced Ukrainians are now finding themselves in a position to move into privately-rented accommodation (45%). However, this is not an easy process and

Ukrainians and their hosts should be aware that it may take some time. Many hosts will have lived in their own homes for decades and might not be aware of significant changes to the UK housing market in that period. It might take as much as six months for Ukrainians to find suitable private accommodation and they are likely to need support in doing so. As one of our interviewees remarked:

It was difficult to rent an apartment, because you must either have a guarantor or pay for six months in one payment and it was difficult.

In the April 2024 ONS survey, 50% of Ukrainians seeking private accommodation faced challenges in accessing the private rental market. These are especially financial difficulties, such as income (42%), inability to find deposits (26%), lack of guarantor or references (49%), or difficulty proving banking or employment history (21%). Birmingham City Council's "move on" fund is addressing many of these issues. The fund provides up to £4,000 (depending on the number of family members) for deposits, first month's rental payment, and essential household costs and goods.¹² Other councils have introduced other support measures for Ukrainians. For example, Sandwell Metropolitan Borough Council and Cherwell District Council have introduced a 50% council tax discount for Ukrainians moving from their host

¹²https://www.birmingham.gov.uk/info/50276/ukraine_sponsorship_scheme_homes_for_ukraine/2663/homes_for_ukraine_%E2%80%93_move_on_funding

accommodation into their own home.¹³ Wandsworth Borough Council is offering advance rent payments and deposits and for the Council to act as guarantor.¹⁴

Beyond financial issues, a worrying 34% of Ukrainians surveyed by the ONS in April 2024 identified bias or discrimination on the part of landlords and letting agencies. Ukrainians have reported to us that landlords are not willing to choose Ukrainians as tenants (even where they are working in good jobs) and that letting agents artificially inflate costs for Ukrainians; for example, by demanding 6 months of rent in advance.

If hosts decide that they want to end the hosting arrangement, they should try to give their guests as much notice as possible (the government recommends at least two months' notice to the guests and to the council)¹⁵ and be ready to help them navigate the difficult housing market: sudden ending of a hosting arrangement may result in homelessness for the guests.

Work and Benefits

As noted above, those arriving to the UK through the Ukrainian humanitarian schemes are a highly educated population and most have taken up employment in the UK. Ukrainians frequently express a real desire to work, contribute, and be seen as productive. Often this is contrasted with a negative perception of accepting state benefits, which are also less generous in Ukraine.¹⁶

However, according to the April 2024 ONS data, 66% of those displaced by the war and employed in the UK are not working in the same sector as they were in Ukraine. The largest number work in hospitality (20%), manufacturing (12%) and information technology (10%). 50% of those looking for work report difficulties: particularly, level of English (50%), not finding a job that matches existing skills (40%), not finding a job close to home (34%), and not having qualifications recognised (31%). While the

¹³ See: <https://www.sandwell.gov.uk/council-tax/council-tax-%E2%80%93-homes-ukraine-scheme>; <https://www.cherwell.gov.uk/info/25/council-tax/1153/council-tax-discount-homes-for-ukraine-scheme>.

¹⁴ <https://www.wandsworth.gov.uk/news/news-march-2024/improved-housing-support-for-ukrainian-refugees/>.

¹⁵ <https://www.gov.uk/guidance/ending-your-hosting-arrangements-and-helping-your-guest-with-their-next-steps-homes-for-ukraine>.

¹⁶ See Sara Jones and Natalia Kogut, "Mismatched Expectations: Eastern Europeanism, the Slow Memory of the Cold War, and Life in the UK for Displaced Ukrainians", *Memory Studies* (forthcoming): <https://research.birmingham.ac.uk/en/publications/mismatched-expectations-eastern-europeanism-the-slow-memory-of-th>.

larger portion of Ukrainians working in the UK do agree that their skills, knowledge and qualifications are being used in their current role, approximately 1/3 partially or strongly disagree with that statement. Despite high levels of reported job satisfaction (71%), 61% of those surveyed would like to find a new job.

This is evidence that Ukrainians are often required to “downskill” to find work in the UK; that is, to accept a job below their skill and education level.¹⁷ Research shows that this is something also experienced by other groups of migrants from Europe’s East (but not those from Western European countries).¹⁸ Ukrainians may therefore need additional help to write CVs, cover letters, and apply for jobs in a way that is “recognisable” to British employers. Some tips include:

- Ukrainians should seek advice from those with experience in the UK employment market around the style and format of their CV and cover letter. These differ significantly from what is standard in Ukraine. Job Centers and specialist advisers may be able to help.
- Ensure that qualifications are written with their UK equivalent. You can find out how qualifications translate here: <https://www.gov.uk/guidance/conversion-of-academic-and-vocational-qualifications-homes-for-ukraine>. Some professional qualifications are not transferable.
- References from a previous employer based in the UK are crucial to get employment in most high-skilled positions. This may mean taking a job in a different sector to build UK experience.

Ukrainians and those supporting them should be aware of the barriers that discrimination against migrants, especially migrants from Europe’s East can play in finding a job and in the workplace. Alongside the evidence of downskilling, a report on the experiences of Ukrainians in EU member states indicates that 10% consider discrimination a barrier to finding employment.¹⁹ One of our interviewees suggested a similar experience in the UK:

¹⁷ Sara Jones and Natalia Kogut, *Effectiveness of Support for Displaced Ukrainians*. Available at: <https://research.birmingham.ac.uk/en/publications/effectiveness-of-support-for-displaced-ukrainians> and Galpin et al., *Support for Displaced Ukrainians*.

¹⁸ Ron Johnston, Nabil Khattab, and David Manley (2015) “East versus West? Overqualification and earnings among the UK’s European migrants”, *Journal of Ethnic and Migration Studies* 41(2): 196-218.

¹⁹ European Union Agency for Fundamental Rights, *Barriers to Employment of Displaced Ukrainians*. Available at: <https://fra.europa.eu/en/publication/2023/barriers-employment-displaced-ukrainians>, p. 9.



When I started working more with clients there with such objections, they do not always have respect for people there, for immigrants, for representatives of Eastern Europe, when it is Poland, Romania, Ukraine, the Czech Republic, and so on.

Childcare is a key issue for many displaced Ukrainians (the majority of whom are women, and many of whom are arriving with children and without their male partner). Ukrainians should familiarize themselves with their entitlement to childcare-related benefits (e.g., 30 free hours and tax-free childcare).²⁰

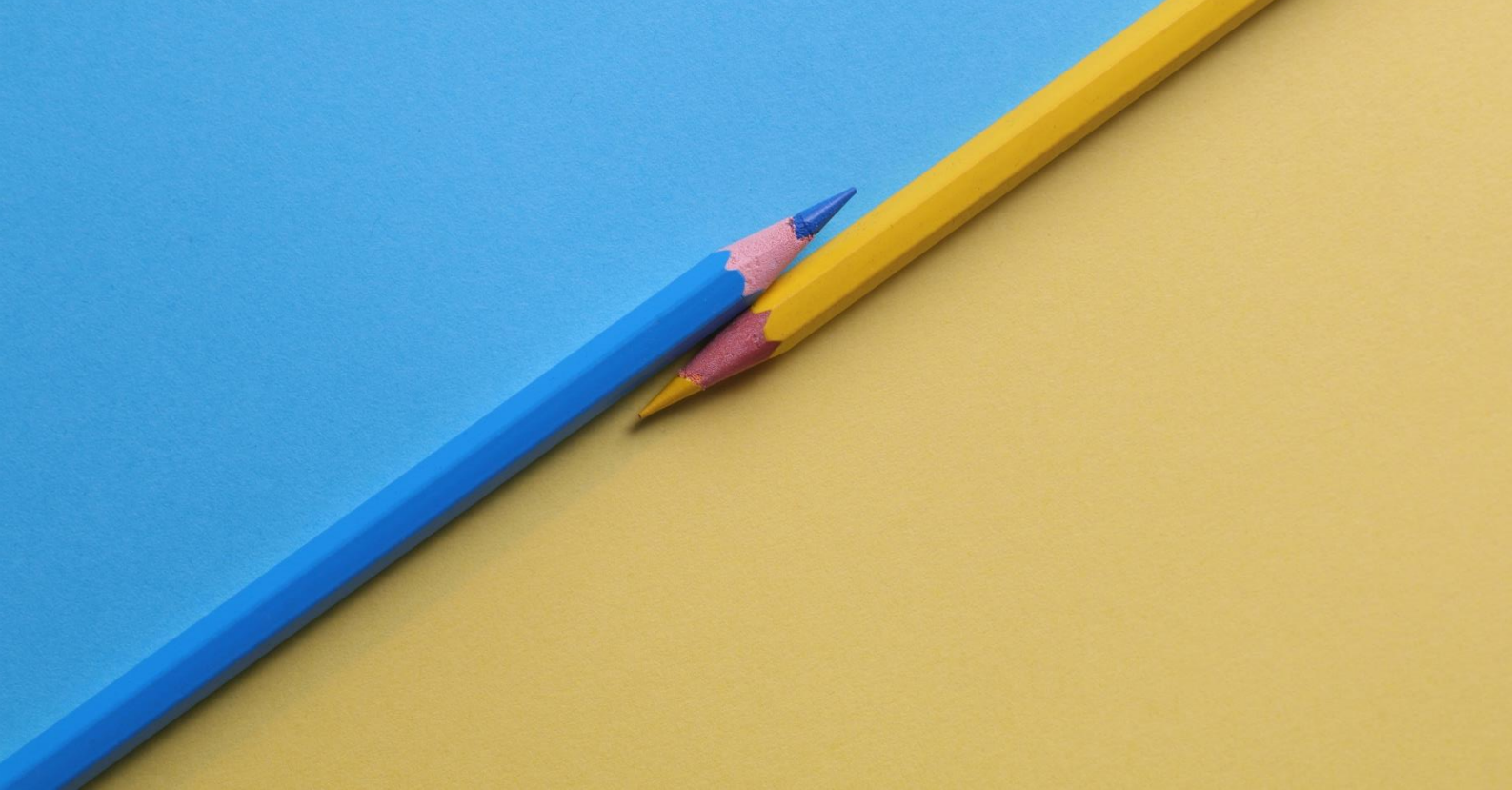
There are also key differences in workplace cultures in the UK and Ukraine. For example, Ukrainians tend to speak more directly, which may be interpreted as confrontational or rude by British counterparts. Dress codes in Ukrainian workplaces tend to be more formal.

Education

Of those Ukrainians with dependent children, 51% make use of primary school, 44% secondary school and 12% further education. There are some differences in school education in the UK compared to Ukraine. In the UK, while parents do have some choice in where to send their children, popular schools are often oversubscribed, and schools allocate places according to their published entry criteria. With some variation (e.g., for faith or selective schools), priority is given to “looked-after” children (adopted, fostered or in care), children with siblings in the school, and those living closest to the school. This means catchment areas can vary year-on-year. When children do not get a place in their local school, they may be allocated a place some distance from their house. Hosts may need to provide significant assistance to their guests in finding suitable school places. From one of our interviewees:

So, we applied for schools as soon as we arrived, we received a message that the application was being processed. There was no answer at all for a month, and now we have received a letter saying that there is no place in any of the schools we have chosen. And we chose eight schools.

²⁰ <https://www.gov.uk/check-eligible-free-childcare-if-youre-working>; <https://www.gov.uk/get-tax-free-childcare>.



In the UK there is a strong emphasis on school attendance, including fines for parents of children whose attendance is poor. In Ukraine, there is more emphasis on knowledge acquisition and more tests and exams to check what the child has learnt. Behaviour is controlled more closely in Ukraine and there are more interactions with parents than in the UK.

Ukrainians we have spoken to report incidences of bullying, both verbal and physical, in schools. This is sometimes connected to the children's Ukrainian ethnicity, or to the war in Ukraine. Parents report frustration at the limited response from schools and an unwillingness on the part of teachers to talk to students about the war and the experience of displacement. Cultural differences also mean that Ukrainian children are less likely to report negative behaviour of other students towards them. A separate concern is how the culture and history of Ukraine are taught and often conflated with Russian culture and history. The University of Birmingham is producing separate guidance for teachers and school administrators around these issues.



Health Care

According to the ONS April 2024 survey, most Ukrainians in the UK have accessed health care since their arrival, such as the GP (81%), hospital (52%), and dentist (43%). However, only 10% had accessed mental health services, such as counselling, with most (76%) stating that they have not needed to access that support. 75% were very or fairly satisfied with the GP service they receive, 82% with the hospital and 64% with the dentist. However, 64% of those surveyed stated that they had returned to Ukraine to receive medical or dental treatment. Differences in standards of care in the UK and Ukraine is one of the most commonly occurring themes in our research. One of our interviewees stated:

We have always scolded the system in Ukraine, we thought that everything was, I don't know, not perfect, but everything is somehow known in comparison. Here my main fear is to be faced with the need to get into a medical facility to receive any help.





In Ukraine, many Ukrainians have access to affordable private healthcare, to which the NHS does not compare favourably. Ukrainians are not accustomed to long waiting times and are used to being able to request (and pay for) affordable diagnostic checks (blood, X-rays etc.) and prescriptions. A separate problem is that diagnoses and prescriptions given by doctors in Ukraine are often not recognised by British doctors, meaning that the diagnostic process has to start from scratch.

The mental health of those displaced due to the conflict is very vulnerable and it can be challenging for Ukrainians to access counselling and therapy via the NHS. Mental health was stigmatized over the Soviet period, which creates further barriers to access, especially for older generations. The language barrier poses additional problems and Ukrainian therapists are struggling to get licenses to practise their profession in the UK. Below there are some contacts for urgent mental health concerns.

Everyday Frustrations

There are many everyday differences in the UK compared to those in Ukraine; some of them are viewed positively and are accepted cheerfully, others are viewed negatively. Being aware of the latter can assist in navigating the process of settling in.

- Electric, gas and water usage: in Ukraine fixed payment per person is more common than the use of meters;
- Often services can only be accessed by phone: language barriers make this additionally challenging;
- Information, including from state authorities or hospitals, is sent by post rather than email, and delays in receiving them can have significant consequences;
- It is very hard to get proof of address for the first time in the UK, but it is (generally) required for opening a bank account and applying for benefits.
- Ukrainians are used to face-to-face consultations in shops, local authorities, medical institutions etc. without prior appointment. The lack of this in the UK is sometimes seen by Ukrainians as poor service.
- Car Insurance premiums are elevated for migrant populations (sometimes twice the amount charged to an equivalent UK driver). This may not have any basis in the skill or experience of the driver, but rather that they are driving on a non-EU driving license.



What's next?

We hope that you found the information in this guide helpful. As hosts who participated in our listening events stressed, being a host means not only providing shelter but also helping a person or even a family to feel settled in the UK, navigate new communities and cities, and often deal with bureaucracy. It is not straightforward and may require your time and effort. Still, many hosts and guests we talked with shared that they became friends and, even after moving out, they continue to maintain their relationships, as this young family who has been hosted by a retired widower remarked:

He warmly welcomed us when we arrived. (...) After we found a home and moved in, we now live without a sponsor, but we often visit him. He is like a member of our family who tries to help.

We hope that your journey will be as rewarding and successful. Thank you so much for supporting displaced communities.

Further Support and Advice

Refugee and Migrant Centre offer help related to settlement in the UK (legal advice, pathways to work, Homes for Ukraine): <https://rmcentre.org.uk/get-help/>

Opora is a registered UK charity helping Ukrainians in the UK to rebuild their lives: <https://opora.uk/>

Sunflower Sisters for Ukraine supports especially women and their children fleeing the war: <https://sunflowersistersforukraine.org/>

Barnardo's have set up a free Ukrainian Support Helpline, which is staffed by English, Ukrainian and Russian speakers. To get help and advice on a range of topics, call 0800 148 8586, Monday to Friday (10am to 8pm) and Saturday (10am to 3pm).

Association of Ukrainians in Great Britain (AUGB) is the largest representative body for Ukrainians and those of Ukrainian descent in the UK: <https://www.augb.co.uk/>

In most parts of the UK, local community organisations have played a crucial role in supporting displaced Ukrainians. In Birmingham, this has included:

- Birmingham for Ukraine: <https://www.birminghamforukraine.org/>
- Bosnia House: <https://bosniauknetwork.org/>
- Centrala: <https://centrala-space.org.uk/communities/ukrainian-support-project/>
- Kryla: <https://kryla.uk/>
- Moseley for Ukraine: <https://www.moseleyforukraine.org/>
- North Birmingham for Ukraine: <https://nb4u.co.uk/>
- European Welfare Association: www.ewacic.com

Several organisations provide advice for all refugees and people seeking asylum:

- **Red Cross:** <https://www.redcross.org.uk/get-help/get-help-as-a-refugee>
- **Refugee Council:** <https://www.refugeecouncil.org.uk/our-work/>
- **The No Accommodation Network:** <https://nacom.org.uk/>
- **World Jewish Relief:** <https://www.worldjewishrelief.org/what-we-do/refugee-employment/>
- **Refugees at Home:** <https://refugeesathome.org/>
- **Migrant Help:** <https://www.migranthelpuk.org/>



Guests can get advice and support to apply for benefits and find work from **Citizens Advice** who can put them in touch with their local advisors:

<https://www.citizensadvice.org.uk/>

For urgent mental health concerns, the following free listening services offer confidential advice from trained volunteers. You can talk about anything that's troubling you, no matter how difficult:

- Call 116 123 to talk to Samaritans, or email: jo@samaritans.org for a reply within 24 hours.
- Text "SHOUT" to 85258 to contact the Shout Crisis Text Line, or text "YM" if you're under 19
- If you're under 19, you can also call 0800 1111 to talk to Childline. The number will not appear on your phone bill.

You might also consult guidance that has been produced by others:

- **Government guides for sponsors:**
<https://www.gov.uk/government/collections/homes-for-ukraine-sponsor-guides>
- **Homes for Ukraine resources for sponsors:**
<https://homesforukraine.org.uk/become-a-host-useful-information/>
- **Open University free course on Ukrainian language and culture:**
<https://www.open.edu/openlearn/languages/introduction-ukrainian-language-and-culture/content-section-overview?active-tab=description-tab>

Acknowledgements

This research underpinning this guidance was funded by: the Arts and Humanities Research Council (AHRC) as part of the project *Post-Socialist Britain: Memory, Representation and Political Identity amongst German, Polish and Ukrainian Immigrants in the UK* (AH/V001779/1); and the University of Birmingham QR Policy Support Fund for the project *Futures of Ukraine: Youth, Mobility, and Post-War Reconstruction*. Follow-on funding was provided by the University of Birmingham AHRC Impact Acceleration Account under the project *Support for Displaced Ukrainians: Culture, Work and Education*.

We are grateful to our project partners at Birmingham City Council and Centrala for their support with the drafting of this guidance and to all of the Ukrainians and hosts who participated in the listening events that underpin the work presented here.



UNIVERSITY OF
BIRMINGHAM

DOI: <https://doi.org/10.25500/EDATA.BHAM.00004390>

© 2025. The work is openly licensed via [CC-BY-NC 4.0](#)