

LONDON
SCHOOL of
HYGIENE
& TROPICAL
MEDICINE



LSHTM Research Online

Bell, Sadie; Edelstein, Michael; Zatoński, Mateusz; Ramsay, Mary; Mounier-Jack, Sandra; (2019) 'I don't think anybody explained to me how it works': qualitative study exploring vaccination and primary health service access and uptake amongst Polish and Romanian communities in England. *BMJ open*, 9 (7). e028228. ISSN 2044-6055 DOI: <https://doi.org/10.1136/bmjopen-2018-028228>

Downloaded from: <http://researchonline.lshtm.ac.uk/4653927/>

DOI: <https://doi.org/10.1136/bmjopen-2018-028228>

Usage Guidelines:

Please refer to usage guidelines at <https://researchonline.lshtm.ac.uk/policies.html> or alternatively contact researchonline@lshtm.ac.uk.

Available under license: Creative Commons Attribution Non-commercial
<http://creativecommons.org/licenses/by-nc/3.0/>

<https://researchonline.lshtm.ac.uk>

BMJ Open 'I don't think anybody explained to me how it works': qualitative study exploring vaccination and primary health service access and uptake amongst Polish and Romanian communities in England

Sadie Bell,¹ Michael Edelstein,² Mateusz Zatoński,³ Mary Ramsay,² Sandra Mounier-Jack¹

To cite: Bell S, Edelstein M, Zatoński M, *et al.* 'I don't think anybody explained to me how it works': qualitative study exploring vaccination and primary health service access and uptake amongst Polish and Romanian communities in England. *BMJ Open* 2019;**9**:e028228. doi:10.1136/bmjopen-2018-028228

► Prepublication history and additional material for this paper are available online. To view please visit the journal (<http://dx.doi.org/10.1136/bmjopen-2018-028228>).

Received 29 November 2018
Revised 2 April 2019
Accepted 10 June 2019



© Author(s) (or their employer(s)) 2019. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

For numbered affiliations see end of article.

Correspondence to

Dr Sadie Bell;
sadie.bell@lshtm.ac.uk

ABSTRACT

Objectives This study explored vaccination attitudes and behaviours among Polish and Romanian communities, and related access to primary healthcare services.

Design A qualitative study using in-depth semistructured interviews with Polish and Romanian community members (CMs) and healthcare workers (HCWs) involved in vaccination in areas with large Polish and Romanian communities. CMs discussed their vaccination attitudes and their experiences of accessing vaccinations in England. HCWs shared their experiences of vaccinating Polish and Romanian communities.

Setting Recruitment focused on three geographical areas in England with large Polish and Romanian populations (in London, Lincolnshire and Berkshire).

Participants 20 Polish and 10 Romanian CMs, and 20 HCWs. Most CMs were mothers or pregnant women and were recruited from London or Lincolnshire. HCWs included practice nurses, health visitors and school nurses recruited from the targeted geographical areas.

Results Although most CMs reported vaccinating according to the UK schedule, obstacles to vaccination were highlighted. CMs experienced difficulties navigating and trusting the English primary healthcare system, and challenges in accessing credible vaccination information in Polish and Romanian. CM vaccination expectations, largely built on knowledge and experiences from Poland and Romania, were often unmet. This was driven by differences in vaccination scheduling and service provision in England, such as nurses delivering vaccines instead of doctors. CMs reported lower acceptance of the influenza vaccine, largely due to perceptions around the importance and efficacy of this vaccine. HCWs reported challenges translating and understanding vaccination histories, overcoming verbal communication barriers and ensuring vaccination schedule completeness among families travelling between England and Poland or Romania.

Conclusions This study identified vaccination uptake and delivery issues and recommendations for improvement. HCWs should discuss health service expectations, highlight differences in vaccination scheduling and delivery between

Strengths and limitations of this study

- As the first study to explore vaccination attitudes and behaviours among Polish and Romanian communities in England, this research has highlighted key factors affecting vaccination uptake among these communities and how these can be addressed.
- Conducting interviews with community members and health workers allowed for the exploration of barriers to both vaccination uptake and delivery.
- Due to challenges in recruiting community members, the study was advertised via social media and our recruitment expanded beyond our targeted geographical areas. Several comments received via social media on Romanian pages appeared to reflect a mistrust in taking part in research and some anti-vaccination sentiments.
- The study may not have captured vaccination behaviours that are particularly reflective of recent migrants. Our community member participants were generally well linked with health services and had good English language skills. Users of social media may also not be particularly representative.

countries, and promote greater understanding of the English primary healthcare system in order to encourage vaccination in these communities.

INTRODUCTION

Protecting populations against vaccine-preventable diseases require immunisation programmes to achieve high vaccination coverage. The measles outbreaks that affected over 20 000 people and resulted in 35 fatalities in Europe between 2016 and 2017^{1 2} are a reminder of the consequences of failing to achieve this. To optimise vaccination coverage and protect populations against

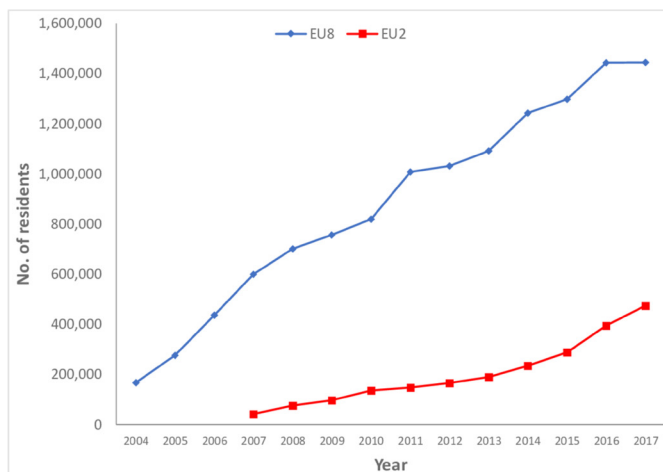


Figure 1 Estimated number of EU8 and EU2 born residents in the UK, 2004 to 2017. Data extracted from the Office for National Statistics.⁶ Data for each year are from January to December. EU, European Union.

vaccine-preventable diseases, it is essential for healthcare workers (HCWs) and vaccination programme managers to understand and address barriers to vaccine uptake within specific populations. Migration is a recognised risk factor for undervaccination,³ with factors such as cultural and language barriers, and unfamiliarity with destination country health systems, hindering vaccination access.^{3 4} This potentially leaves migrant populations vulnerable to vaccine-preventable diseases.⁵

Since the expansion of the European Union (EU) to include the EU8 countries (Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia) in 2004, and EU2 countries (Romania and Bulgaria) in 2007, the Eastern European (EE) born population in the UK has consistently increased⁶ (figure 1). In 2017, Polish and Romanian were the most common non-British nationalities in the UK.⁶

Despite the sizeable Polish and Romanian population in the UK, there is limited evidence about vaccination uptake in these communities.⁷ In England, as well as other European countries, a barrier to health research involving EE communities is the lack of a systematic way to identify such individuals in health-related datasets. Where vaccination uptake has been explored by ethnicity, a concept often linked to migrant status,⁸ this has largely included broad ethnic categories (eg, 'white other') and not specific nationalities or countries of birth.^{9–12} One traveller study specifically explored vaccination uptake among Romanians that also identify as Roma,¹³ a distinct ethnic and cultural group that have experienced extensive discrimination, persecution and marginalisation across Europe. This traveller study highlighted that among Roma participants language and literacy were particular barriers to accessing vaccines and health services.¹³

To our knowledge, no research has specifically focused on vaccine-related attitudes and behaviours among Polish and Romanian communities in England. This is despite differences in vaccination schedules^{2 14} (table 1),

vaccination coverage¹⁵ (table 2) and vaccine confidence between countries.¹⁶ Notable differences in scheduling include the lack of health system funding for influenza and rotavirus vaccination in Poland and Romania, in comparison to the UK (table 1). Also, in contrast to the UK and Romania, 11 childhood vaccinations in Poland are mandatory, with vaccination refusal leading to monetary fines (table 1). There are also differences in vaccination coverage, which is notably much lower in Romania, compared with the UK and Poland (table 2). Coverage with two doses of measles vaccine is particularly low in the UK (88%), and dangerously low in Romania (75%) (table 2).

This study explored vaccination attitudes and behaviours among Polish and Romanian community members (CMs) in England, and related access to primary healthcare (PHC).

METHODS

Theoretical framework

The Social Ecological Model (SEM) was adopted as a theoretical framework to underpin this study and guide the identification of factors affecting vaccination uptake, and areas for focusing policy and practice recommendations.¹⁷ The SEM acknowledges that health behaviours, such as vaccination uptake, are shaped by multiple factors at the following levels: intrapersonal/individual (eg, knowledge, attitudes), interpersonal (eg, family, friends), institutional (eg, workplaces), community (eg, neighbourhoods, community groups, local organisations) and policy (eg, laws, national or local policies).¹⁷ The SEM has previously been used in the context of vaccination behaviours.^{18–20} Using the SEM helped to identify areas in which to target improvement efforts.

Recruitment and data collection

We conducted in-depth semistructured interviews with Polish and Romanian CMs and HCWs involved in the provision and delivery of vaccinations in areas with high Polish and Romanian populations. Recruitment focused on three geographical areas (Boston, Lincolnshire; Slough, Berkshire; Brent, London), with different levels of vaccination coverage and large EE populations.^{6 21} We aimed to interview approximately 20 Polish and 20 Romanian CMs, and 20 healthcare providers. This number of participants was considered achievable, given practical considerations, and adequate to gain insight into the topic.

CMs were identified through community venues (including schools, nurseries and churches), and advertisements in Polish newspapers, EE shops and via Twitter and Facebook pages. Eligible Polish and Romanian CMs included parents and grandparents and men and women belonging to the target groups for influenza vaccine (pregnant women, adults aged 65+years and people with specified long term conditions such as diabetes or heart disease). CMs were compensated with a £10 gift voucher.

Table 1 Comparison of childhood and adult vaccination schedules in Poland, Romania and the UK^{2 14}

	UK	Poland	Romania
<i>Tuberculosis (TB) (BCG)</i>	Infants in areas of the country with TB incidence $\geq 40/100\ 000$. For infants with a parent or grandparent born in a high incidence country.	Mandatory, administered within 24 hours after birth.	Within 2–7 days after birth.
<i>Rotavirus</i>	2 and 3 months.	Not funded by the National Health System. Recommended at 6 weeks and 2, 3, 4, 5 and 6 months.	Not funded by the National Health System
<i>Diphtheria</i>	2, 3 and 4 months and 3 and 14 years.	Mandatory at 2, 4 and 5–6 and 16 months and 6, 14 and 19 years.	2, 4 and 11 months and 6 and 14 years.
<i>Tetanus</i>	2, 3 and 4 months and 3 and 14 years.	Mandatory at 2, 4 and 5–6 and 16 months and 6, 14 and 19 years.	2, 4 and 11 months and 6 and 14 years.
<i>Pertussis</i>	2, 3 and 4 months, 3 years and for pregnant women.	Mandatory at 2, 4 and 5–6 and 16 months and 6 and 14 years.	2, 4 and 11 months and 6 years.
<i>Poliomyelitis</i>	2, 3 and 4 months and 3 and 14 years.	Mandatory at 4 and 5–6 and 16 months and 6 years.	2, 4 and 11 months and 6 years.
<i>Haemophilus influenzae type b infection</i>	2, 3, 4 and 12 months.	Mandatory at 2, 4 and 5–6 and 16 months.	2, 4 and 11 months.
<i>Hepatitis B</i>	Infants born to hepatitis B infected mothers at birth, 4 weeks and 12 months old. General population at 2, 3 and 4 months.	Mandatory, administered within 24 hours after birth and at 2 and 7 months.	2–7 days after birth and at 2, 4 and 11 months.
<i>Pneumococcal disease</i>	2, 4 and 12 months (PCV) and for adults aged 65+ years (PPV).	Mandatory at 2, 4 and 13 months. Recommended but not funded by the National Health System for adults aged 50+ years.	2, 4 and 11 months.
<i>Meningococcal disease</i>	MenB at 2, 4 and 12 months. MenC at 12 months. Men ACWY at 14 years old.	Not funded by the National Health System. Recommended at 2–6 months and 7 months to 19 years.	Not included in recommended vaccinations
<i>Measles</i>	12 months and 3 years. Opportunistically offered to unvaccinated or partially vaccinated children aged between 10 and 16 years.	Mandatory at 13 months and 10 years. Catch-up programme offered to unvaccinated or partially vaccinated children aged between 11 and 19 years.	12 months and 5 years.
<i>Mumps</i>	12 months and 3 years. Opportunistically offered to unvaccinated or partially vaccinated children aged between 10 and 16 years.	Mandatory at 13 months and 10 years. Catch-up programme offered to unvaccinated or partially vaccinated children aged between 11 and 19 years.	12 months and 5 years.
<i>Rubella</i>	12 months and 3 years. Opportunistically offered to unvaccinated or partially vaccinated children aged between 10 and 16 years.	Mandatory at 13 months and 10 years. Catch-up programme offered to unvaccinated or partially vaccinated children aged between 11 and 19 years.	12 months and 5 years.
<i>Human papillomavirus infection</i>	Girls aged 12–14 years.	Girls aged 11–13 years.	Not funded by the National Health System. Recommended for girls aged 11–14 years.
<i>Influenza</i>	Children aged 2–8 years. Pregnant women during influenza season. Annually for adults aged 65+ years.	Not funded by the National Health System but recommended from 6 months to 18 years and for adults aged 55+ years.	Not funded by the National Health System but recommended for adults aged 65+ years.
<i>Herpes zoster (shingles)</i>	Adults aged 70+ years.	Not included in recommended vaccinations	Not included in recommended vaccinations

Men ACWY, meningococcal group A, C, W-135 and Y conjugate; MenB, meningococcal B vaccine; MenC, meningococcal C vaccine; PCV, pneumococcal conjugate vaccine; PPV, pneumococcal polysaccharide vaccine.

We identified HCWs via general practices and community providers. Potential participants were given an information sheet, fully detailing the study objectives and explaining all aspects of participation, including the right to withdraw from the research.

Participants were interviewed in person or via telephone. CMs were offered the option of being

interviewed in English, Polish or Romanian. Interviews were audio recorded and reflective notes were taken during interviews. Face-to-face interviews were conducted with CMs in community venues (eg, libraries and quiet coffee shops) in a location convenient for the participant. Face-to-face interviews with HCWs were performed in workplaces, in quiet environments away from clinical

Table 2 WHO-UNICEF estimates of vaccination coverage (%) in Poland, Romania and the UK in 2017¹⁵

	Vaccine												
	BCG	DTP1	DTP3	HepB3	HepB_BD	Hib3	IPV1	MCV1	MCV2	PCV3	Pol3	RCV1	RotaC
Poland	93	99	98	95	93	98	*	96	93	*	92	96	†
Romania	97	93	82	92	93	82	*	86	75	*	82	86	†
UK	*	98	94	*	*	94	*	92	88	92	94	92	90

*No estimate for vaccination coverage.

†Vaccination not funded by the Health System.

DTP1, Diphtheria-tetanus-pertussis vaccine 1st dose; DTP3, Diphtheria-tetanus-pertussis vaccine 3rd dose; HepB3, Hepatitis B vaccine 3rd dose; HepB_BD, Hepatitis B Birth dose; Hib3, Haemophilus influenzae type b 3rd dose; IPV1, Inactivated polio vaccine 1st dose; MCV1, Measles-containing vaccine 1st dose; MCV2, Measles-containing vaccine 2nd dose; Pol3, Polio-containing vaccine 3rd dose; PCV3, Pneumococcal conjugate vaccine 3rd dose; RCV1, Rubella-containing vaccine 1st dose; RotaC, Rotavirus vaccine.

areas. Most interviews with CMs lasted 30–60 min, and approximately 20–40 min with HCWs.

CMs were asked about their vaccination and related PHC experiences. HCWs were interviewed about vaccination service delivery to Polish and Romanian service users. CMs and HCWs were solicited for service improvement suggestions. Interview topic guides were developed for this study with community involvement.

Public involvement

A Polish community group was involved in the development of study documents, including the topic guides, and was asked to provide feedback on recruitment strategies. This involvement aimed to increase the relevance and usefulness of the study and help to promote study recruitment.

Data analysis

Interviews were transcribed verbatim and analysed thematically using the stages outlined by Braun and Clarke²²: data familiarisation, coding and theme identification and refinement. To enhance the rigour of the analysis, coding approaches and data interpretations were discussed between SB, MZ and SM-J.

Interviews were coded using initial codes generated from the interview topic guide and levels of the SEM. Use

of the SEM helped to identify where to focus policy and practice recommendations.¹⁷

Research team and reflexivity

This research was led by SB, a postdoctoral researcher at the London School of Hygiene & Tropical Medicine (LSHTM). The researchers had no connection with the research participants prior to commencing the study. SB had a clinical background, having worked as a nurse in haematology and oncology. The team had academic research (SB, MZ, ME, MR, SM-J) and clinical or public health backgrounds (SB, ME and MR). SB, SM-J and MZ were based at LSHTM at the time of the study, and ME and MR at Public Health England (PHE). SB, ME, MR and SM-J conducted this study as part of the Health Protection Research Unit in Immunisation, a collaboration between LSHTM and PHE.

FINDINGS

Participants

Twenty Polish and 10 Romanian CMs and 20 HCWs were interviewed (table 3). Three interviews were conducted in Polish by MZ and the remaining interviews were performed by SB in English (n: 27). Detailed CM characteristics are

Table 3 Healthcare worker and community member participants

Healthcare workers		
Region	No of interviews conducted	Roles of interviewees
Slough, Berkshire	6	Specialist health visitors, specialist nurses focused on health inequalities and practice nurses
Brent, London	5	Practice nurses
Boston, Lincolnshire	7	School nurses, practice nurses and a general practice administrator
Hillingdon, London	1	Health visitor
Other	1	Vaccination advisor
Community members		
		No of interviews conducted
Polish participants		20
Romanian participants		10

outlined in online supplementary table 1. Most CMs were mothers or pregnant women (n: 27). In addition, two Romanian fathers and one Polish woman eligible for the influenza vaccine participated. The average time spent living in the UK was 11 years for Polish CMs and 9 years for Romanian CMs. CMs were recruited via social media (n: 22), a Polish newspaper (n: 2), a community group (n: 1), a children's club (n: 1) and through word of mouth (n: 4). The use of social media meant that recruitment was not geographically restricted, most CMs were recruited from London or Lincolnshire.

One HCW was recruited from an area not originally targeted for recruitment (table 3) because of strong experience in working with EE communities. In addition to National Health Service (NHS) HCWs, we also recruited a vaccination advisor (HCW#17) who led an online Romanian vaccination forum organised by medical professionals.

Despite advertising the study extensively, there were challenges in recruiting CMs and recruitment expanded beyond our targeted geographical areas. We had intended to recruit more Romanian CMs, to match the number of Polish participants; however, this was not possible during the timeframe of the study due to challenges with recruitment. The study received some negative responses when advertised via social media on Romanian pages that appeared to reflect a mistrust in taking part in research, antivaccination attitudes^{23 24} and concerns around living in England following the Brexit vote.²⁵

No repeat interviews were performed, and no participants withdrew from the study.

Factors affecting vaccine uptake, delivery and PHC access

CMs mostly reported accepting vaccines according to the UK schedule, although the influenza vaccine was more often declined (online supplementary table S1). CMs reported struggling with the vaccination decision-making process, which involved the evaluation of perceived potential benefits and risks.

We present factors affecting vaccine uptake and delivery as identified by CMs and HCWs under seven main themes: (1) challenges to navigating the health system, (2) transnational use of health services, (3) language and literacy, (4) expectations of vaccination delivery, (5) vaccine acceptance, (6) vaccine accessibility and (7) trust. These themes span each level of the SEM. Wider barriers to service access were also highlighted in relation to PHC, which has potential implications for vaccination delivery as vaccines are mainly administered in this setting. There were no noticeable differences in the themes that emerged between the interviews conducted in Polish and English.

Challenges to navigating the health system

CMs reported institutional level difficulties in navigating the health system. Several CMs reported challenges in registering with general practices due to uncertainties around entitlement to care and difficulties in producing

proof of address as requested by some practices. Interpersonal relationships were a source of support in navigating the health system, with several CMs reporting their involvement in helping Polish and Romanian family members and friends to register with general practitioner (GP) practices.

CMs perceived the English PHC system as markedly different to systems in Poland and Romania. CMs explained that in Poland and Romania service users would more often directly access specialist pay-for-services, bypassing GPs. At an intrapersonal level, PHC in England was frequently viewed as a hindering process instituted to restrict access to secondary care and cut costs.

...in Poland a GP is a GP and they accept the fact that they are GPs....so if they cannot deal with something, they will very easily refer you somewhere else.... If you feel dizzy or you've got a headache, they will send you to a neurologist. It's not a problem. Here, trying to get a referral somewhere is just like God help you. (CM#10—Polish mother, Cornwall)

The most critical reports of primary care were made by CMs that had experienced particularly long delays in accessing treatment in England and had quickly accessed treatment on presentation to services in Poland and Romania.

Transnational use of health services

CMs often reported ongoing use of health services in Poland and Romania; in some instances, this was done to avoid relying on PHC in England to gain direct access to secondary care. CM families were also reported to travel to Poland or Romania prior to or in the weeks following the birth of a newborn, to see family and receive health-care. Some families vaccinated their children during these visits due to the timing of their travel.

Vaccinating children in more than one country could cause disruption of the UK immunisation schedule. At an institutional level, HCWs faced challenges in determining which vaccines had been administered to the child, with many returning to England with undocumented vaccination histories. Polish participants also suggested that some families prefer to access certain vaccinations in Poland, an intrapersonal level decision that was influenced by cost, a policy level influence, in some instances.

.... there were some vaccinations we did in Poland because it was cheaper, like chicken pox for [our daughter] I think it was £100 here or something like that. I think we paid half in Poland.... we managed to get it when we were on holiday.' (CM#18—Polish mother; Lincolnshire)

Language and literacy

Communication barriers during PHC consultations were reported by both HCWs and CMs. The latter particularly struggled with HCW use of medical terminology and jargon, and the inability of health services to provide

information in languages other than English. These factors fall within the institutional level of the SEM. To overcome language barriers, several HCWs reported using online translation tools to aide communication. HCWs considered that more 'formal' modes of communication such as telephone or face-to-face interpreting services were difficult to organise, felt impersonal and created greater uncertainties around messages becoming lost in translation.

Similarly, HCWs struggled to translate vaccination histories. This was a time-consuming process and one, as HCWs suggested, which would be better completed by an alternative service prior to attendance at the practice. Some HCWs reported relying on colleagues with Polish or Romanian language skills, including multilingual receptionists, to translate documents. In some instances, practices had developed vaccine 'crib sheets', providing the names of vaccinations in Polish and Romanian, to help during consultations.

Most CMs reported that they were not offered, or directed towards, vaccination and broader health information in their native language. CMs and HCWs recommended that vaccination information be made available in different languages, but there was recognition that cost could be a barrier. An additional challenge in working with Roma Romanian communities was overcoming literacy barriers. With those groups, HCWs found that face-to-face verbal communication, involving interpreters, was the best approach.

Expectations of vaccination delivery

Without a prior understanding of vaccination delivery in England, CMs based their expectations on intrapersonal knowledge and experiences in Poland and Romania. This meant their expectations were often unmet because of policy and institutional level differences in vaccination programmes (table 1), HCW roles and interactions in vaccination appointments.

Comparison of vaccination programmes in the UK, Poland and Romania

Both CMs and HCWs noted that existing variations in vaccines and scheduling between national programmes led to uncertainties. For example, confusion arose for hepatitis B vaccine, which has been widely available in Europe but was only recently introduced routinely in the UK,²⁶ and BCG vaccination that is not universally offered in the UK.²⁷ Polish parents reported unease at not receiving the BCG vaccination for their children, as Poland is not classed by PHE as having a high TB prevalence.²⁸

The number of childhood vaccinations administered within a short space of time was also reported as a concern by parents. Some CMs argued that in Poland and Romania some vaccines could be available with a choice of formulations, such as measles, mumps and rubella (MMR) either freely as three separate jabs or for a fee in one jab, while the NHS only administered the combined three-dose

MMR vaccine. Similarly, choice was also provided in Poland and Romania between vaccine brands, although at a cost when administered by private providers. Branded vaccinations were reportedly portrayed as better.

...the GP [In Romania] told us, 'just use this one.' I think [the GP] might have told us, 'If you want,' 'you know, I can give you this standard free of charge one. If you want your real one, you just go to the pharmacy, buy it, bring it, we'll do it, off you go'. (CM#4—Romanian father, Maidenhead)

Difference in consent for vaccines in schools was highlighted between England and Romania by one HCW. It was reported that providing written consent in England could be off putting to parents not used to this particularly formalised approach, which made vaccinations appear riskier.

Vaccine administration

Polish participants discussed that in Poland vaccines are administered by doctors, while in England this role is performed by nurses. Some Polish participants were concerned that nurses in England might not be qualified for this role. Polish mothers also highlighted concerns that children were not given a physical examination before vaccine administration. Instead, it was reported that the onus on whether vaccinations should be given was placed on the parent, who was asked whether their child was healthy.

I do not like it, for example, that children are not tested (checked) before vaccination. [The decision to give the vaccination] depends on the parent's opinion whether the child is healthy or not, but it is sometimes difficult to really judge whether a child is healthy, if he or she goes with a cold, or I do not know, with something. (CM#12—Polish mother, Wellingborough)

One Polish parent also reported that children attending vaccination services in Poland would wait in a separate area to symptomatic patients. The absence of segregated areas between healthy and sick patients in GP practices in England was found to be alarming.

Vaccine acceptance

Although most CMs regarded vaccines as essential for protection against disease, certain vaccines created greater concern or were considered less important than others. Several participants voiced higher apprehension around 'newer' vaccines that were considered not to have been in use for enough time to be considered safe. Both MMR and the influenza vaccines were either considered unimportant or generated particular concerns. The hesitancy related to MMR was linked to the Wakefield controversy,²⁹ but was reported not to be at any greater level than in the general population. Influenza was the dominant vaccine that CMs reported refusing (online supplementary table S1). Refusals were mainly based on

the perception that this vaccine is unnecessary or not as important as other vaccines. Influenza was considered less serious compared with other vaccine-preventable diseases.

It did not appear that messages surrounding the larger societal benefits of influenza vaccination had been received. Several CMs also reported concerns that having the influenza vaccine could cause influenza-like side effects.

Accessibility of vaccines

Appointment booking and appointment length

CMs reported that it was straightforward and easy to book vaccination appointments at GP practices; however, dissatisfaction was often noted around the time allocated. Similarly, HCWs considered it generally difficult to provide vaccine information, administer vaccines and document vaccine delivery within the time allotted (approximately 10–15 min), and this was made even more challenging because of communication barriers.

The time restriction on appointments made some CMs feel rushed and not listened to, potentially leaving them with questions and vaccine concerns that were not addressed. Interviewees reported that this could generate tensions.

Vaccination reminders

Although vaccination acceptance was high, HCW reported that attendance dwindled for EE children after vaccinations at 8 and 12 weeks.

CMs reported not always receiving vaccination reminders. There was a lack of consistency in the approaches used by practices in delivering vaccination recalls and the onus appeared to be primarily on the parents to book and remember appointments. Given the frequent travel of Polish and Romanian families to their home countries, appointments were easily missed.

Trust

‘Social’ trust in institutions and ‘interpersonal’ trust in individuals, terms used by Mechanic and Schlesinger,³⁰ can be applied to underpin confidence in vaccines, vaccine delivery and health services. CMs discussed trust in relation to health authorities, the pharmaceutical industry and HCWs. Trust in healthcare was partially shaped by different expectations of health services and a lack of understanding of how the English PHC system works. Some CMs were particularly sceptical about the quality of healthcare in England:

I have more confidence in the doctor in Poland. Doctors in Poland are trained doctors. They study medicine for several years....Here, I have the impression that a doctor....they have everything on the computer. He’s typing in a computer that you come, have a cold, a fever, and [it] jumps out [from the computer], what he has to give me. (CM#12—Polish mother, Wellingborough)

Lack of trust in PHC was a driving factor for people opting to access emergency services in England and for seeking care in Poland and Romania or private Polish doctors in England.

To promote trust in health services, it was considered crucial for HCWs to explain the system to service users. With some communities, HCWs reported that engagement was more effective using outreach strategies (eg, door knocking, approaching community groups) rather than trying to encourage health service attendance.

To develop trust in vaccines, it was considered important for CMs to be able to access credible information. CMs reported challenges in accessing and sourcing trustworthy vaccination information, amidst a barrage of well-written unregulated sources that appear using Google searches, through parent forums, and on social media. These fall within the SEM as community level influences. Although as noted some CMs were not confident in HCWs, most CMs trusted HCWs advice on vaccines and the literature sources produced by the NHS on vaccinations influence at an institutional level, which was considered more credible than other sources.

DISCUSSION

We found that vaccination attitudes and behaviours among CMs were influenced by multiple interconnected factors. These included language barriers, perceptions about vaccine safety and importance, and expectations around vaccination services and PHC.

Overall, the reported influence of language barriers, population transiency, negative perceptions of healthcare professionals, poor understanding of healthcare entitlements, work-life demands and lack of integration on PHC experience were consistent with the literature.^{31–39} Previous research also highlights that migrants may prefer to access health services in their country of origin due to negative perceptions of the English PHC system³⁵ and greater confidence familiarity and confidence in their country of origin’s doctors.^{37 40}

We found that vaccination and healthcare experiences in Poland and Romania shaped expectations of services in England. Differences in service provision in England, such as vaccine delivery by nurses, were met with uncertainty and anxiety. The variations in vaccination schedules across countries which caused concern among our participants are likely to affect migrant populations in other countries.

Influenza vaccination was commonly refused due to perceptions around its importance and efficacy. It is not clear whether influenza vaccination refusal is more prominent among Polish and Romanian communities. This warrants further exploration, particularly as confidence in vaccines has been decreasing in many European countries, most notably in Poland.¹⁶

We have identified key recommendations intended to improve vaccination and health service access by Polish and Romanian communities (table 4), many of which

Table 4 Key recommendations linked to study findings and levels of the Social Ecological Model

Theme	Subtheme	Level of Social Ecological Model	Key recommendations
Navigating the health system	–	Intrapersonal, interpersonal, institutional	<ul style="list-style-type: none"> ▶ HCWs to explain how the health system works in England⁴¹ and clarify expectations, notably for new migrants who register at general practices. ▶ Outreach vaccination approaches for those that do not access healthcare.
Transnational use of health services	–	Intrapersonal, interpersonal	<ul style="list-style-type: none"> ▶ Discuss future travel to avoid missing or delaying vaccines⁴² ▶ HCWs to ask new residents about their vaccine history and record it and offer vaccinations to people unable to provide evidence of vaccination.^{4 42–44}
Language and literacy	–	Intrapersonal, institutional	<ul style="list-style-type: none"> ▶ Vaccination and broader health literature made available in translated forms.⁴ ▶ Information provided using pictograms or pictures to help overcome literacy barriers. ▶ Outreach vaccination approaches, involving an interpreter, to reach groups that face language and literacy barriers. ▶ Improved access to interpreting and translation services⁴
Expectations of vaccination delivery	Comparison of vaccination programmes Consent Administration of vaccine	Intrapersonal: interpersonal, institutional, community,	<ul style="list-style-type: none"> ▶ Differences in vaccination schedules and consent to be highlighted and discussed by HCWs. ▶ HCWs to encourage open communication around vaccines and vaccination delivery, particularly with those that are unfamiliar with the English health system.
Acceptance of vaccines	Perceived safety of MMR Importance of influenza vaccine	Intrapersonal, interpersonal, community	<ul style="list-style-type: none"> ▶ Views and expectations of all service users should be used to shape services.
Accessibility of vaccines	Appointment booking and length Vaccination reminders	Institutional Institutional	<ul style="list-style-type: none"> ▶ Longer appointment slots when there are language barriers. ▶ Vaccination reminders given during health visitor appointments and general practice visits. ▶ Vaccination reminders in Polish and Romanian.
Trust	Trust in healthcare workers Trust in vaccinations and pharmaceutical industry	Institutional Institutional	<ul style="list-style-type: none"> ▶ HCWs and CMs to discuss service expectations and acknowledge differences in systems. ▶ Direction to credible vaccination sources. ▶ Encourage discussion around vaccine concerns.

CM, community member; HCW, healthcare worker; MMR, measles, mumps and rubella.

would be transferable to other European countries where these communities have also settled. While some of these recommendations incur additional staff time and costs, they should be placed in the broader context of ensuring high uptake and reducing the likelihood of disease outbreaks in these communities.

CONCLUSION

Overall, CMs reported accepting vaccination; however, several barriers to uptake were identified. These included difficulties in navigating and trusting the English health system, language barriers and challenges in accessing credible vaccine information in translated forms. Concerns around vaccine importance and efficacy were raised by CMs for influenza vaccine, which led to lower acceptance.

HCWs reported difficulties in translating and understanding vaccination histories, ensuring vaccination schedule completeness among families frequently travelling between England and Poland or Romania, and overcoming verbal communication barriers.

In a context where external and internal migration has been growing in England and across Europe, and several measles outbreaks have occurred over the past few years, it is important that HCWs promote an open dialogue with service users to discuss vaccination and health service expectations. Crucially, providers are recommended to routinely obtain and record vaccination histories, explain differences in vaccination delivery and scheduling, and consider vaccine schedule travel disruptions.

Author affiliations

¹Department of Global Health and Development, Faculty of Public Health and Policy, London School of Hygiene and Tropical Medicine, London, UK

²Department of Immunisation, Hepatitis and Blood Safety, Public Health England, London, UK

³European Observatory of Health Inequalities, Kalisz, Poland

Acknowledgements The authors would like to thank the research participants and members of the public involvement group. They thank Vanessa Saliba for providing helpful feedback and sharing her expertise during the project.

Funding The research was funded by the National Institute for Health Research Health Protection Research Unit in Immunisation at the London School of Hygiene & Tropical Medicine in partnership with Public Health England.

Disclaimer The views expressed are those of the author(s) and not necessarily those of the NHS, the NIHR, the Department of Health or Public Health England.

Competing interests None declared.

Patient consent for publication Not required.

Ethics approval The study received ethical approval from the London School of Hygiene and Tropical Medicine Observational Research Ethics Committee (Ref: 12124), the Health Research Authority (Project ID: 224734), and from Research and Development departments in the recruitment areas. Written informed consent was obtained from all study participants.

Provenance and peer review Not commissioned; externally peer reviewed.

Data sharing statement No additional data are available.

Open access This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>.

REFERENCES

- WHO Regional Office for Europe. Europe observes a 4-fold increase in measles cases in 2017 compared to previous year. 2018 <http://www.euro.who.int/en/media-centre/sections/press-releases/2018/europe-observes-a-4-fold-increase-in-measles-cases-in-2017-compared-to-previous-year> (cited 19th Jun 2018).
- WHO. WHO vaccine-preventable diseases: monitoring system. 2017 global summary. 2018 http://apps.who.int/immunization_monitoring/globalsummary/schedules (cited 19th Jun 2018).
- ECDC. *Review of outbreaks and barriers to MMR vaccination coverage among hard-to-reach populations in Europe*. Stockholm: ECDC, 2013.
- De Vito E. *A review of evidence on equitable delivery, access and utilization of immunization services for migrants and refugees in the WHO European Region*. Copenhagen: WHO Regional Office for Europe (Health Evidence Network (HEN) synthesis report 53), 2017.
- Williams GA, Bacci S, Shadwick R, et al. Measles among migrants in the European Union and the European Economic Area. *Scand J Public Health* 2016;44:6–13.
- ONS. *Population of the UK by country of birth and nationality: 2017*, 2018.
- Wagner KS, van Wijgerden JC, Andrews N, et al. Childhood vaccination coverage by ethnicity within London between 2006/2007 and 2010/2011. *Arch Dis Child* 2014;99:348–53.
- Bhopal R. Glossary of terms relating to ethnicity and race: for reflection and debate. *J Epidemiol Community Health* 2004;58:441–5.
- Baker MR, Bandaranayake R, Schweiger MS. Differences in rate of uptake of immunisation among ethnic groups. *Br Med J* 1984;288:1075–8.
- Baker D, Garrow A, Shiels C. Inequalities in immunisation and breast feeding in an ethnically diverse urban area: cross-sectional study in Manchester, UK. *J Epidemiol Community Health* 2011;65:346–52.
- Bowyer HL, Forster AS, Marlow LA, et al. Predicting human papillomavirus vaccination behaviour among adolescent girls in England: results from a prospective survey. *J Fam Plann Reprod Health Care* 2014;40:14–22.
- Forster AS, Rockliffe L, Chorley AJ, et al. Ethnicity-specific factors influencing childhood immunisation decisions among Black and Asian Minority Ethnic groups in the UK: a systematic review of qualitative research. *J Epidemiol Community Health* 2017;71:544–9.
- Jackson C, Bedford H, Cheater FM, et al. Needles, Jabs and Jags: a qualitative exploration of barriers and facilitators to child and adult immunisation uptake among Gypsies, Travellers and Roma. *BMC Public Health* 2017;17:254.
- ECDC. Vaccine schedules in all countries of the European Union. 2018 <https://vaccine-schedule.ecdc.europa.eu> (cited 19th Jun 2018).
- WHO. Official country reported coverage estimates. 2018 http://www.who.int/immunization/monitoring_surveillance/data/en/ (cited 19th Jun 2018).
- Larson HJ. *State of vaccine confidence in the EU 2018*. Luxembourg: Publications Office of the European Union, 2016.
- McLeroy KR, Bibeau D, Steckler A, et al. An ecological perspective on health promotion programs. *Health Educ Q* 1988;15:351–77.
- Jackson C, Dyson L, Bedford H, et al. Understanding uptake of Immunisations in Travelling and Gypsy communities (UNITING): a qualitative interview study. *Health Technol Assess* 2016;20:1–176.
- Kumar S, Quinn SC, Kim KH, et al. The social ecological model as a framework for determinants of 2009 H1N1 influenza vaccine uptake in the United States. *Health Educ Behav* 2012;39:229–43.
- Boerner F, Keelan J, Winton L, et al. Understanding the interplay of factors informing vaccination behavior in three Canadian provinces. *Hum Vaccin Immunother* 2013;9:1477–84.
- ONS. Population in the UK by country of birth and nationality. 2018 <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/internationalmigration/datasets/populationoftheunitedkingdombycountryofbirthandnationality> (cited 26th Jun 2018).
- Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* 2006;3:77–101.
- Craciun C, Baban A. "Who will take the blame?": understanding the reasons why Romanian mothers decline HPV vaccination for their daughters. *Vaccine* 2012;30:6789–93.
- Pența MA, Băban A. Dangerous agent or saviour? HPV vaccine representations on online discussion forums in Romania. *Int J Behav Med* 2014;21:20–8.
- King R. 'What have I done to deserve this?' The aftershocks of Brexit for London's EU migrants. 2017 <http://blogs.lse.ac.uk/brexit/2017/04/10/what-have-i-done-to-serve-this-the-aftershocks-of-brexit-for-londons-eu-migrants/> (Accessed 10 Apr 2017).
- Torjesen I. UK adds hepatitis B to infant vaccination schedule. *BMJ* 2017;358:j3357.
- PHE. *The complete routine immunisation schedule*, 2018.
- PHE. *World Health Organization (WHO) estimates of tuberculosis incidence by country, 2016*, 2018.
- Wakefield AJ, Murch SH, Anthony A, et al. Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children. *Lancet* 1998;351:637–41.
- Mechanic D, Schlesinger M. The impact of managed care on patients' trust in medical care and their physicians. *JAMA* 1996;275:1693.
- Jackowska M, von Wagner C, Wardle J, et al. Cervical screening among migrant women: a qualitative study of Polish, Slovak and Romanian women in London, UK. *J Fam Plann Reprod Health Care* 2012;38:229–38.
- Todorova I, Baban A, Alexandrova-Karamanova A, et al. Inequalities in cervical cancer screening in Eastern Europe: perspectives from Bulgaria and Romania. *Int J Public Health* 2009;54:222–32.
- Andreeva VA, Pokhrel P. Breast cancer screening utilization among Eastern European immigrant women worldwide: a systematic literature review and a focus on psychosocial barriers. *Psychooncology* 2013;22:2664–75.
- Bray JK, Gorman DR, Dundas K, et al. Obstetric care of new European migrants in Scotland: an audit of antenatal care, obstetric outcomes and communication. *Scott Med J* 2010;55:26–31.
- Madden H, Harris J, Blickem C, et al. "Always paracetamol, they give them paracetamol for everything": a qualitative study examining Eastern European migrants' experiences of the UK health service. *BMC Health Serv Res* 2017;17:604.
- Dorota O. 'If I Get Ill, it's onto the Plane, and off to Poland.' Use of health care services by Polish Migrants in London. *Central and Eastern European Migration Review* 2013;2:98–114.
- Sime D. 'I think that Polish doctors are better': newly arrived migrant children and their parents' experiences and views of health services in Scotland. *Health Place* 2014;30:86–93.
- Gorman DR, Porteous LA. Influences on Polish migrants' breast screening uptake in Lothian, Scotland. *Public Health* 2018;158:86–92.
- Lindenmeyer A, Redwood S, Griffith L, et al. Experiences of primary care professionals providing healthcare to recently arrived migrants: a qualitative study. *BMJ Open* 2016;6:e012561.
- Migge B, Gilmartin M. Migrants and healthcare: investigating patient mobility among migrants in Ireland. *Health Place* 2011;17:1144–9.
- Crawshaw AF, Kirkbride H. Public Health England's migrant health guide: an online resource for primary care practitioners. *Public Health* 2018;158:198–202.
- PHE. Immunisation: migrant health guide 2017. 2018 <https://www.gov.uk/guidance/immunisation-migrant-health-guide>
- National Institute for Health and Care Excellence. *Immunisations: reducing differences in uptake in under 19s*: NICE, 2009.
- Commission, E. *Handbook for health professionals. Health assessment of refugees and migrants in the EU/EEA*. Brussels: European Commission, 2015.