Rapid summary

Question:

- **Which groups (especially among likely priority groups) may find it difficult, or may be reluctant, to attend mass venues?**
- **How might vaccine uptake be maximised in hard-to-reach groups?**

Brief summary:

We found very little research evidence to answer these questions. Thirteen sources were broadly relevant to the two questions. The sources were a mix of surveys, qualitative and descriptive case studies. No sources contained UK data.

The evidence identified the following populations as hard-to-reach:

- People living in rural communities[1,5,7,10]
- Migrants, nomadic groups (including travellers), and people who are homeless or live on the streets[1,5,6,9]
- Those facing language/cultural barriers/ethnic minorities[1,2,3,4,5,7,10,12,13]
- Housebound individuals with mobility issues/disabilities[1,4,5,11]
- Elderly people living alone[1,6,8]
- Undocumented populations[1]
- Lesbian, gay, bisexual, and transgender (LGBT) individuals (may not seek healthcare)[1]
- People with learning difficulties[1]/disabilities
- People on low incomes[4]/poverty

The overwhelming message across the evidence was ensuring population groups receive appropriate information, sensitive to their needs.[2,3,4,5,7,11,12,13] Easily accessible and familiar sites for mass vaccination within their community can be beneficial.[2,3,4,5,6,9,10,13] Utilising trusted community sources were also associated with increased rates of vaccination.[2,4,5,13] In addition, provision of transport to mass vaccination sites[4,5,7,] or mobile clinics[4] can increase uptake among many hard-to-reach groups.

We identified additional strategies specific to some of the hard-to-reach groups. We did not identify any such evidence related to undocumented populations, lesbian, gay, bisexual, and transgender (LGBT) individuals, people with learning difficulties.

Those facing language/cultural barriers/ethnic minorities

Most identified evidence looked at increasing vaccination rates among ethnic minorities.[2,3,4,5,7,12,13] Effective interventions include culturally and linguistically tailored communications[2,3,12] that may include picture messaging[7] or having translators at vaccination clinics.[5] Identifying community champions (individuals or organisations) can help centralised activities cascade down to the community-level

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and make campaigns more acceptable.[2,3,5] Community-based educational campaigns with a variety of teaching strategies should be used.[4] Involving stakeholders can help make communication materials more acceptable to target audiences.[5] Increasing community knowledge via factual and consistent messaging through press releases and media roundtable events, Twitter and distribution of fact sheets and flyers has been used[3]. Points of dispensing site intake forms can be utilised to monitor uptake and identify health inequalities early.[3]

Elderly
Consideration could be given to holding separate clinics in familiar locations, organising rides to clinics, or if resources allow, offering home vaccinations.[5,6,8]

Homeless
People who are homeless or live on the streets can be reached by holding community-based clinics at food lines, shelters or other places where they regularly gather.[5,6,9]

Rural communities
Delivering vaccinations within remote and isolated communities can increase uptake,[5] as can the provision of transport to vaccination sites.[7] Consideration could be given to providing vaccinations at work places, during lunch or break times.[10]

Disabled
Strategies to improve access among disabled persons include disseminating information at multiple venues and mobile units or home visits.[4,5,] Consideration could be given to holding separate clinics in familiar locations.[6] Receiving adequate information, as opposed to too much or too little, was associated with increased vaccination rates among US.[11]

Immigrants
Specific recommendations included; avoid asking about immigration status.[13] Work with immigrants, refugees, and their service providers to guide outreach programmes with efforts to protect vulnerable populations from social stigma and discrimination. Encourage use of bilingual, bicultural community health workers, develop low-literacy and culturally appropriate health education materials, and use all forms of media. Messages should be delivered through existing trusted, effective channels.[13]

Method

A search of databases and grey literature screening (details available on request) identified 13 sources relevant to these two questions. The title/abstract of potentially

relevant sources were screened independently by two reviewers. At full text, sources were screened by a single reviewer, with 20% of papers being checked for consistency. Data extraction was undertaken by a single reviewer, then checked by a second reviewer. No critical appraisal of the included sources was undertaken. Only sources from OECD countries were included.

Table 1 below includes links to some potentially relevant and useful resources. Note: they are mainly concerned with routine vaccination, which is outside the scope of this rapid summary.

Table 2 includes details and a summary of the content of the sources used.

Limitations

This summary may be useful to identify key points on the topic however, the included research has not been assessed for quality and comes from a wide range of published material.

The search focused on vaccinations in pandemic, epidemic or disease outbreak contexts. There may be more evidence from studies looking at routine vaccination campaigns.

Table 1. Useful resources:

What	Link
European Centre for Disease, Prevention and Control. **Translation is not enough – Cultural adaptation of health communication materials**. 2016.	https://www.ecdc.europa.eu/en/publications-data/translation-not-enough-cultural-adaptation-health-communication-materials This guide introduces a five-step, stakeholder-based approach to adapting health communication materials. It describes how countries can take any health communication material (produced in English or other languages) and create adapted products which reflect national or local realities, needs and assets without losing the scientific correctness, core concepts and messages of the original version
European Centre for Disease, Prevention and Control. **Communication toolkit on immunisation: How to increase immunisation uptake.** 2016.	https://www.ecdc.europa.eu/en/publications-data/communication-toolkit-immunisation-how-increase-immunisation-uptake This ECDC communication toolkit aims to support EU/EEA countries in their communication initiatives to increase immunisation uptake, in particular childhood vaccination. It provides template materials that health authorities can adapt to develop their own communication initiatives, in line with national, regional or local strategies and needs
European Centre for Disease, Prevention and Control. **Communication on immunisation – building trust.** 2012	https://www.ecdc.europa.eu/en/publications-data/communication-immunisation-building-trust The guide has been developed to assist those involved in planning and implementing health communication activities to promote immunisation. It builds on existing research and good practice developed by international organisations, with real-life examples of media coverage and communication campaigns for specific vaccines. It emphasises trust and transparency
National Institute for Health and Care Excellence. **Flu vaccination: increasing uptake. Expert testimony NICE guideline NG103. Expert paper 3: homeless outreach**. 2018.	https://www.nice.org.uk/guidance/ng103/evidence/expert-paper-3-homeless-outreach-pdf-6532123791 This expert paper discusses barriers to increasing uptake among homeless people. NICE may request expert opinions where there is no evidence to inform guidance.
National Institute for Health Care Excellence. **Flu vaccination: increasing uptake. Systematic review. NICE guideline NG103: Increasing flu vaccination uptake in clinical risk groups (aged 6 months to 64 years).** 2018	https://www.nice.org.uk/guidance/ng103/evidence/3-increasing-flu-vaccination-uptake-in-clinical-risk-groups-pdf-6532083616 This evidence review supports NICE Guideline NG103 and examined interventions that can be delivered in the community to increase the uptake of influenza vaccination in clinical risk groups (as defined in the Green Book, Chapter 19 as eligible for free vaccination).

What	Link
National Institute for Health Care Excellence. **Immunisations: reducing differences in uptake in under 19s.** 2017	https://www.nice.org.uk/guidance/ph21 This guideline covers increasing immunisation uptake among children and young people aged under 19 years in groups and settings where immunisation coverage is low. It aims to improve access to immunisation services and increase timely immunisation of children and young people. It also aims to ensure babies born to mothers infected with hepatitis B are immunised.
The Royal College of General Practitioners. **Guidance on delivering mass vaccination during COVID-19**. 2020	Guidance on delivering mass vaccination during COVID-19 This document has been produced to assist in understanding the practicalities and challenges of delivering mass vaccination programmes in a context when COVID-19 remains in general circulation. It sets out key areas that will need to be considered, offers possible solutions and highlights areas where risk assessments are required, particularly where these may differ from normal practice. This document focuses on the needs of general practice but may also be of relevance to other vaccinators, local directors of public health, and colleagues operating in international contexts. The guidance is intended to be generic, and applicable to various potential vaccines which may need to be delivered to a large population in a short time frame. This document should be read in conjunction with other relevant guidance from the RCGP, national organisations (such as NHS England, Public Health England and equivalent bodies across the devolved nations), and other medical bodies (such as the Royal College of Nursing and Royal Pharmaceutical Society and the BMA).
The Royal College of Nursing (RCN). **Immunisation services and Large-scale vaccination delivery during COVID-19.** 2020	Immunisation services and Large-scale vaccination delivery during COVID-19 Vaccination is an essential clinical service that should continue during the COVID-19 pandemic. The RCN guidance outlining the key principles for maintaining the national immunisation schedule has been incorporated into the information in this resource. It is recommended that large scale vaccination plans are developed locally and with engagement with multi-professional colleagues across the system; primary care, general practice, pharmacy, community services, care homes, school health and potentially linked to acute services for example A&E and outpatients. The local population needs, infrastructure availability, service capacity and demand all need careful consideration.
Royal Society for Public Health. **Moving the Needle: Promoting vaccination uptake across the life course**. 2019	Moving the Needle: Promoting vaccination uptake across the life course This report aims to contribute to the conversation about fear and misinformation about vaccines by exploring vaccination in the UK, investigating the role of and barriers to vaccination throughout life. Vaccines continue to be

What	Link
	important for health long past childhood, and vaccinations in later life are likely to become increasingly significant as the UK population ages.

Table 2. Summaries of sources:

Reference	Relevant findings	Limitations/considerations
1. Ozawa S et al. Defining hard-to-reach populations for vaccination. *Vaccine*. 2019;37(37):5525-5534. Available here. . Review Multiple countries	The proposed definitions of hard-to reach populations and hard-to-vaccinate populations as informed by the literature are as follows: Hard-to-reach populations are those who face supply-side barriers to vaccination due to geography by distance or terrain, transient or nomadic movement, healthcare provider discrimination, lack of healthcare provider recommendations, inadequate vaccination systems, war and conflict, home births or other home-bound mobility limitations, or legal restrictions. Hard-to-vaccinate populations are those who are reachable but difficult to vaccinate because of demand-side barriers such as distrust, religious beliefs, lack of awareness, poverty or low socioeconomic status, lack of time, or gender-based discrimination.	
2. European Centre for Disease Prevention and Control. A literature review on community and institutional emergency preparedness synergies. Stockholm: ECDC; 2017 Available here. Review; multiple countries	The review notes the following: • Involving organisations serving linguistically and culturally isolated minority groups in communication strategies may help by tailoring initiatives to be culturally relevant, rather than just translating standard messages into different languages. • 2009 H1N1 influenza pandemic (USA): To get out vital information and improve the access of vaccines to a range of community groups, health agencies worked with local authorities to plan culturally appropriate information and secure familiar places for vaccination clinics to take place. • Identifying community champions (individuals or organisations) can help centralised activities cascade down to the community-level.	
3. Alonzo et al. Pandemics and health equity: Lessons learned from the H1N1 response in Los Angeles County. Journal of Public Health Management and Practice. 2011.17 (1) 20-7. 10.1097/PHH.0b013e3181ff2ad7 Available here.	Describes a vaccination campaign in Los Angeles during the H1N1 pandemic and presents a partnership strategy, developed during the response to improve outreach and build trust and engagement with African Americans in LA county. Aspects of the strategy included: • Ensuring points of dispensing sites (PODs) selected to reach diverse, high-risk populations. Located in multiple sites where there were concentrations of underserved populations or in easily accessible, recognised venues to improve access.	Very little detail of the strategy, including which sites were utilised, content of the educational activities. Specific details about the African American community may not be directly generalisable.

Descriptive case study
Los Angeles county, USA
	• Widespread public education activities via a speakers' bureau, press releases and media roundtable events, Twitter and distribution of fact sheets and flyers. Specific materials and approaches developed to reach several ethnic groups.
	• Data from POD intake forms indicated African Americans were under-represented. Consequently,
	• In light of this, specific health education materials were produced and targeted outreach to African Americans was implemented. These were met with community counter-messages that appeared to carry weight within the community.
	• An African American Outreach and Trust Building Partnership Strategy was developed In response to the counter-messages, Elements included:
	  ○ Expanding outreach and engagement activities conducted in African American communities through community-based organisation with a long history of effective health promotion.
	  ○ Increasing community knowledge of the potential health risks from H1N1, improved communications with factual and consistent messaging about H1N1.
	  ○ Use of trusted community leaders focusing on increasing vaccinations by promoting safety of the vaccine. It also included media messages, billboards and bus advertisements.
	
	The outreach strategy was a success, however authors recognise a national race/ethnicity reporting requirement may enhance the early identification of health inequities in public health emergency response.	

4. DeBurin, D et al. Social Justice in Pandemic Preparedness. Am J Public Health. 2012;102 (4): 586–591. doi:10.2105/AJPH.2011.300483 Available here. Descriptive case study USA	As part of work undertaken by the Minnesota Pandemic Ethics Project, representatives from several vulnerable and underserved communities (including people with disabilities, racial and ethnic minorities and low-income persons) were involved in a public engagement process. The following strategies were identified to improve access among these groups: • Need to bring educational campaigns into individual communities to better inform residents about influenza, pandemic planning, and available community health services • Educational campaigns be offered in multiple languages with a variety of teaching strategies rather than consist merely of distribution of written materials • Information be disseminated in multiple venues—such as neighbourhood hubs—rather than simply be posted to the Internet	Looked at the whole pandemic response, not just increasing uptake of vaccination rates.

	• Educators should be culturally competent and represent diverse groups found in the communities where the educational campaigns would be offered To address issues concerning trust, transportation, mobility, and distance to care, resources should be brought into local communities. Easily accessible sites or mobile units should be used for distribution of resources, and collaborations with trusted community organisations should be developed for providing care.	
5. Pan-Canadian Public Health Network. *Vaccine annex: Canadian Pandemic Influenza Preparedness: Planning Guidance for the Health Sector*. Pan-Canadian Public Health Network; 2017. Available here. Guidance Canada	This Canadian pandemic influenza preparedness planning guidance suggests that Canadian jurisdictions build on their seasonal strategies, using tailored approaches to deal with the unique needs of diverse settings and vulnerable populations. The guidance recommends that an immunization program be able to reach vulnerable people who may be physically or mentally disabled, of low literacy, frail or housebound, homeless or culturally and socially isolated. Useful strategies include translating immunization materials into appropriate languages (including braille for the visually impaired or text-to-speech for the hearing impaired), having translators available at clinics, organising rides to clinics, enlisting younger, multilingual family members to assist in communication, offering home visits if resources permit and reaching homeless people by holding immunizations at food lines, shelters or other places where they gather. As geographic factors can also impact timely accessibility to vaccination, the guidance recommends that jurisdictions be prepared to deliver vaccination in remote and isolated communities. Community leaders could be asked to convey accurate information and champion the vaccine programme. The involvement of stakeholders can help make communication materials more acceptable to target audiences.	Guidance outlining how Canadian jurisdictions will work together to ensure a coordinated and consistent health sector approach.
6. Klaiman, T et al. Local health department public vaccination Clinic success during 2009 pH1N1. *J Public Health Management Practice*, 2013, 19(4), E20–E26 Available here. Realist evaluation	Evaluation of the H1N1 vaccination campaign during 2009 looked at 18 examples of best practice identified through the Model Practices Database in the USA. Given the uncertainty of vaccine supplies, all of the local health departments (LHDs) interviewed felt that clearly defining the priority groups before implementing public clinics was key. Some LHDs strictly interpreted the CDC priority group recommendations, whereas others addressed the community members they felt were most vulnerable. Success in reaching priority	Retrospective study with the potential for recall bias. Generalisability to a Welsh population may be an issue.

USA	groups required access to vulnerable populations. This depended upon strong, previously established partnerships with community organizations. Approximately half of the successful LHDs held separate clinics for particularly vulnerable populations such as individuals with cognitive or physical disabilities, homeless, and senior citizens. These special clinics were usually held at municipal buildings or buildings that were familiar to the population (i.e., shelters, long-term care facilities, senior centres).	
7. Disaster Preparedness and Resilience Branch (DPRBHR SA) Health Viral Respiratory Disease Pandemic Response Plan (including influenza, COVID-19, SARS & MERS) Available here. State response plan Australia	This South Australia state response plan outlines high level approaches to be used in response to a pandemic. The documents identified people living in remote communities and from a culturally and linguistically diverse background as hard to reach groups. Noted that transportation to and from remote settings is variable and infrequent, which has implications for the distribution of vaccines. For people with limited or no ability to understand and communicate in English, the use of pictures in messages is a method of ensuring that a message, although brief, can be understood.	Top line plan with limited detail.
8. Brown JR et al. Barriers to vaccinating the elderly with H1N1 vaccine. *American Journal of the Medical Sciences*. 2011; 342(1), pp.24-6 Available here. USA Cross sectional survey	Survey of 64 people aged 65+ who had not received the H1N1 vaccine. Of those surveyed, 46 (72%) had not received the H1N1 vaccine. Reasons included outright refusal for no reason at all (39%), not knowing the need for the vaccine (20%), fear of side effects (13%) and transportation issues (4%). The authors note that the health department aggressively delivered the H1N1 vaccine at many local sites and promoted it heavily through the media, however the elderly were initially low on the list of eligibility for the vaccine.	Methods and population details limited. Small sample from one US healthcare centre. No discussion of study limitations by the authors. Can identify associations, but not causal links. Self-report measure.
9. Buccieri, K and Gaetz, S. Ethical Vaccine Distribution Planning for Pandemic influenza: Prioritizing Homeless and Hard-to-Reach Populations. Public Health News (2013). 6 (2) 185-196	Evaluates the effectiveness of a programme by Toronto Public Health to immunise 'homeless and underhoused people' with the pH1N1 vaccine via designated clinics in shelters, drop-in centres and community health centres frequented by homeless persons. A convenience sample of 149 individuals homeless during vaccination period completed surveys and interviews. Sample: M=66%; F=31% Trans=3%. Canadian citizens =89%; 7% landed immigrants, 4% refugees. 41% saw themselves as part of a visible minority group. 38% reported receiving H1N1 vaccinations (vs 32% in Ontario and 41% Canadian general population).	Small scale retrospective evaluation using self-report data.

Available here. Descriptive case study Canada	Main factor accounting for levels of vaccination in this population was widespread access to community-based vaccine clinics in places they regularly frequented.	
10. Cassady D, et al. Pandemics and vaccines: perceptions, reactions, and lessons learned from hard-to-reach Latinos and the H1N1 campaign. *Journal of Health Care for the Poor & Underserved*. 2012; 23(3), pp.1106-22. Available here. Qualitative study USA	Focus group study of 90 Spanish-speaking Latino farmworkers (10 groups) conducted in rural California in 2010. Researchers aimed to understand the dynamics that limit influenza and H1N1 vaccinations among this hard to reach Latinos group. Male participants reported experiencing inflexible working conditions that did not allow for time off to get vaccinated. Farm labourers were especially concerned about losing their jobs if they took a day off to be vaccinated. Participants suggested that vaccinations be provided at work, during lunch or break times.	Findings may not be generalisable to a rural Welsh population.
11. Etingen B et al. Health information during the H1N1 influenza pandemic: did the amount received influence infection prevention behaviors? *Journal of Community Health*. 2013;38(3):443-450. Available here. Cross-sectional survey USA	A 2010 survey of 3,113 veterans with spinal cord injuries and disorders. A greater proportion who received adequate versus not enough information received H1N1 vaccination (61.87 vs. 48.49 %, $p<0.0001$). A greater proportion who received adequate versus too much information received H1N1 vaccination (61.87 vs. 42.45%, $p<0.0001$). The most commonly reported information sources were health professionals (56.31%), television (55.67%), and printed materials (31.32%).	Can identify associations, but not causal links. Self-report measures.
12 Hutchins, SS et al. Protection of racial/ethnic minority populations during an influenza pandemic. *American journal of Public Health* 2009. 99:S2;S261-70. Available here.	Implementation of pandemic interventions could be optimised by 1. Culturally competent preparedness and response that address specific needs of racial/ethnic minority populations. 2. Relevant, practical, and culturally and linguistically tailored communications.	No methodology provided for review.

Review USA		
13. Truman, I et al. Pandemic Influenza preparedness and response along immigrants and refugees. *American journal of Public Health* 2009. 99:S2:S278-86 Available here.	Following production of an evidence review, public health scientists and service program managers attended an expert panel convened by the CDC in Atlanta in 2008 which produced the following guidance: • Consider vaccine distribution in easily accessible community centres, as well as using workplaces as supplementary points of distribution. • Ensure that all population subsets, including immigrants and refugees, receive information on the rationale for priority groups as well as on location and timing of vaccine distribution. • Ensure that distribution sites are easily accessible. • Investigate and apply lessons learned from programme models providing benefits without asking about immigration status. • Work with immigrants, refugees, and their service providers to collect essential data that balances the need for information to guide outreach programs with efforts to protect vulnerable populations from social stigma and discrimination. • Encourage use of bilingual, bicultural community health workers, develop low-literacy and culturally appropriate health education materials, and use all forms of media. • Deliver messages through existing trusted, effective channels; including appropriate institutions and sources of authority in those communities. Encourage and require cultural competence among providers serving immigrants and refugees.	No methodology provided for review.