Integration of refugees and migrants in immunisation policies, planning, and service delivery – Global perspective

Prof. Sally Hargreaves
s.hargreaves@sgul.ac.uk

The GloVaxMi-Health Initiative

Transforming policy and practice to advance life-course immunisation and vaccine equity in migrant populations

UNIVERSITI MALAYA

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Lancet Migration
Global collaboration to advance migration health

CITY ST GEORGE'S UNIVERSITY OF LONDON

Lead Agencies

World Health Organization

IOM UN MIGRATION

Experts

Community Partners

- ✓ Uganda: Kirsty Le Doare, Darlington Faijue
- ✓ Morocco: Mohammad Khalis, Oumnia Bouaddi

Early Career Researchers

More inclusive policies and best practice during the COVID-19 pandemic

In Turkmenistan, the national COVID-19 vaccination plan includes refugees and stateless people, and undocumented stateless people have been included in invitations for vaccination since March 2021

Lebanon also includes stateless people in its national COVID-19 vaccination plan and, after advocacy efforts, has added a statelessness option to enable stateless people to register on its online platform

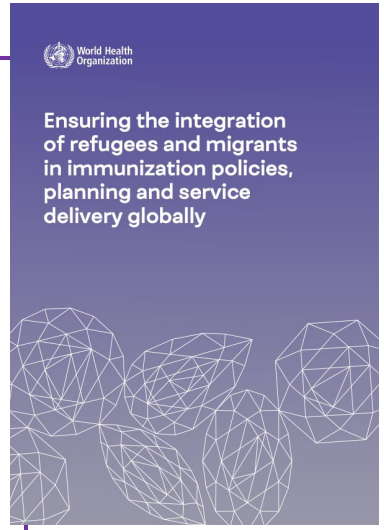
In Kuwait, all members of the population have access to medical services linked to COVID-19 in principle, including individuals who are not regularized and/or do not hold an identification card

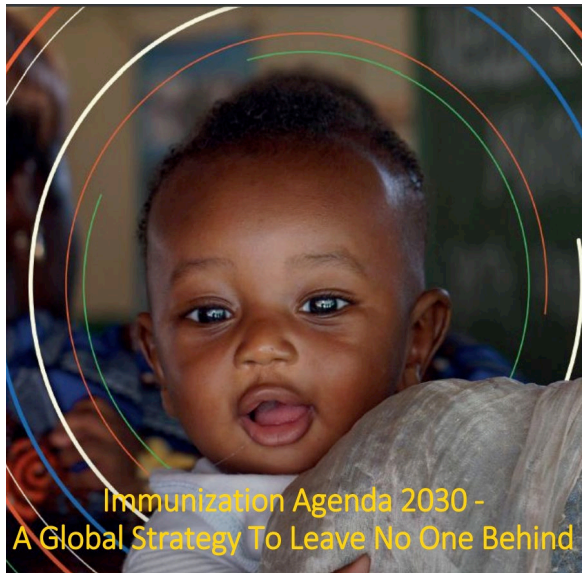
In Peru, authorities have opened the vaccination registry for migrants, regardless of their status

In Colombia, the Government has facilitated a policy shift to ensure the regularization of undocumented migrants from Venezuela and is providing the COVID-19 vaccine to them

Jordan was one of the first countries to provide free-of-charge and equitable access to COVID-19 vaccines for Iraqi and Syrian refugees

Dutch and Spanish Governments have guaranteed irregular migrants equal access to the vaccination as for





IA2030

“ …a world where everyone, everywhere, at every age, fully benefits from vaccines to improve health and well-being. ”

Vaccination coverage in migrants

Global evidence
IOM study of 12,526 refugees (36 nationalities) assessed in the WHO Eastern Mediterranean region **(Lebanon, Jordan, Egypt) on route to the UK**

Adults were significantly less likely than children to be in line with the UK immunisation schedule for polio and measles

Age group	Refugees in Cohort (n)	Refugee Immunised in Accordance with UK Technical Instructions (at least one dose; n=5798)	Refugee Immunised in Accordance with UK Immunisation Schedule (n=764)
Polio			
Child (<10 years)	2195	1936 (88.2%)	706 (32·2%)
Adolescent (10–19 years)	1438	1190 (82.8%)	2 (0·1%)
Adult (>19 years)	3237	2672 (82.5%)	**2 (0·1%)**
Measles			
Child (<10 years)	2195	1738 (79.2%)	1118 (50·9%)
Adolescent (10–19 years)	1438	1181 (82.1%)	445 (31·9%)
Adult (>19 years)	3237	2637 (81.5%)	**775 (23·9%)**

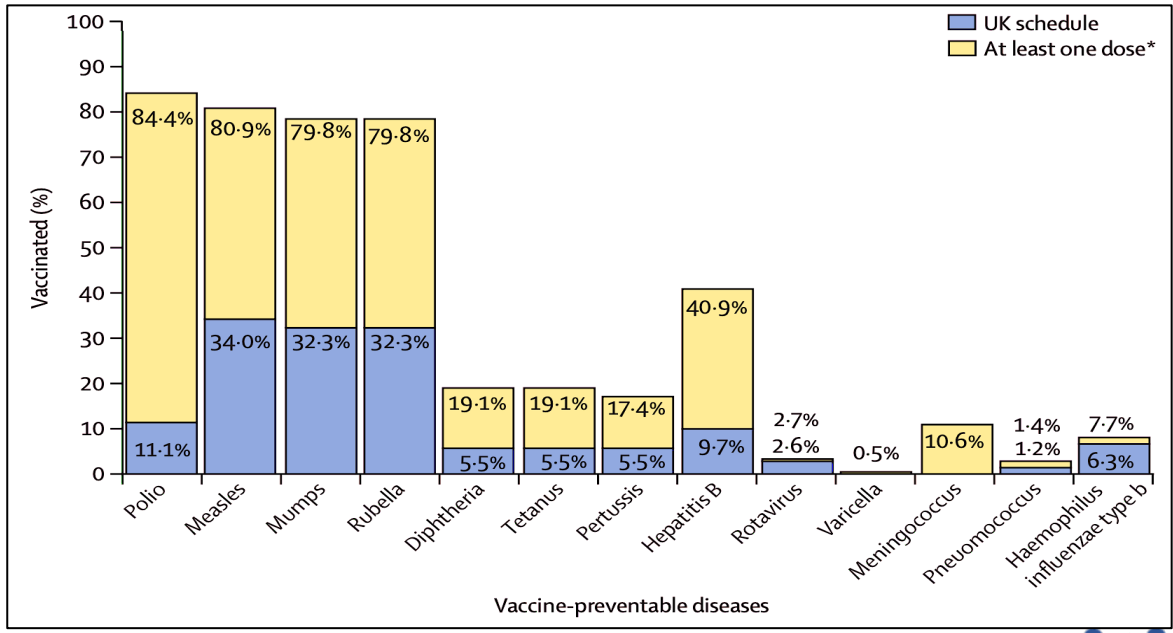
THE LANCET
Public Health

Immunisation status of UK-bound refugees between January, 2018, and October, 2019: a retrospective, population-based cross-sectional study

Anna Deal, MPhil [a,b] · Sally E Hayward, MSc [a,b] · Alison F Crawshaw, MPhil [a] · Lucy P Goldsmith, PhD [a] · Charles Hui, MD [c] · Warren Dalal, MSW [d] · et al. Show more

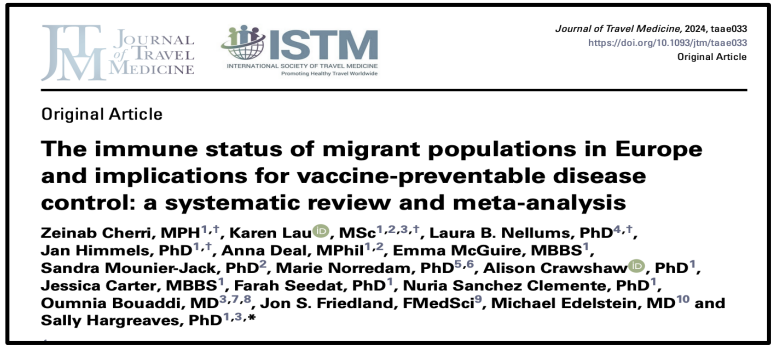
Few refugees were fully aligned with the UK vaccine schedule:

- Only 34% vaccinated for measles
- Polio: 11%
- Diphtheria and tetanus: 5%



Vaccination coverage in migrants

European evidence


Journal of Travel Medicine, 2024, taae033
https://doi.org/10.1093/jtm/taae033
Original Article

Original Article

The immune status of migrant populations in Europe and implications for vaccine-preventable disease control: a systematic review and meta-analysis

Zeinab Cherri, MPH[1,†], Karen Lau, MSc[1,2,3,†], Laura B. Nellums, PhD[4,†], Jan Himmels, PhD[1,†], Anna Deal, MPhil[1,2], Emma McGuire, MBBS[1], Sandra Mounier-Jack, PhD[2], Marie Norredam, PhD[5,6], Alison Crawshaw, PhD[1], Jessica Carter, MBBS[1], Farah Seedat, PhD[1], Nuria Sanchez Clemente, PhD[1], Oumnia Bouaddi, MD[3,7,8], Jon S. Friedland, FMedSci[9], Michael Edelstein, MD[10] and Sally Hargreaves, PhD[1,3,*]

- 39 serology studies (N= 75 089 adult and child migrants, 14 European countries)
- Pooled immunity levels were below Herd Immunity Threshold (HIT) targets for mumps, measles, and diphtheria

VPD/Vaccine	% (95% CI) coverage in migrants	Herd immunity thresholds (HIT)
Diphtheria	**57% [43.1-71.7]**	**83-86%**
Measles	**83.7% [79.2–88.2]**	**93-95%**
Mumps	**67.1% [50.6–83.6]**	**88-93%**
Rubella	**85.6% [83.1–88.1]**	83-94%

Evidence on the inclusion of migrants in immunisation policies

LMICs: Middle East and North Africa

- **19 studies** identified via grey literature, MoH websites, and expert checks in 16 MENA countries (50% of studies from Bahrain, UAE, Saudi Arabia, Oman, Qatar)

Vaccination coverage and access among children and adult migrants and refugees in the Middle East and North African region: a systematic review and meta-analysis

Oumnia Bouaddi,[a,b,c,d,j] Farah Seedat,[e,j] Hassan Edries Hasaan Mohammed,[c,d,f] Stella Evangelidou,[c] Anna Deal,[e] Ana Requena-Méndez,[c,g,h,k] Mohamed Khalis,[a,b,d,i,k] and Sally Hargreaves,[e,k,*] on behalf of the Middle East and North Africa Migrant Health Working Group

Age group	Vaccines	Migrant groups	Countries
Children	All vaccines in the National Immunisation Programmes	Migrant children; children of migrants	7/16: Egypt, Jordan, Palestine, Tunisia, Algeria, and Morocco
Adolescents	Only certain vaccines; e.g MMR, OPV (high-risk areas), DTP)	Adolescent migrants from high-risk areas	4/16: Jordan, Tunisia, Egypt
Adults	Only certain vaccines; e.g. tetanus, polio	Child-bearing mothers (tetanus); adult migrants from high-risk areas (Polio)	2/16: Egypt,
	Polio, MMR 1, MMR 2, and Meningococcal (mandated)	Adults seeking work/residence	5/16: UAE, Qatar, Saudi Arabia, Oman, Bahrain

UK guidelines on vaccination for migrants

Key catch-up vaccines for adults and adolescents:

3 doses Td/IPV

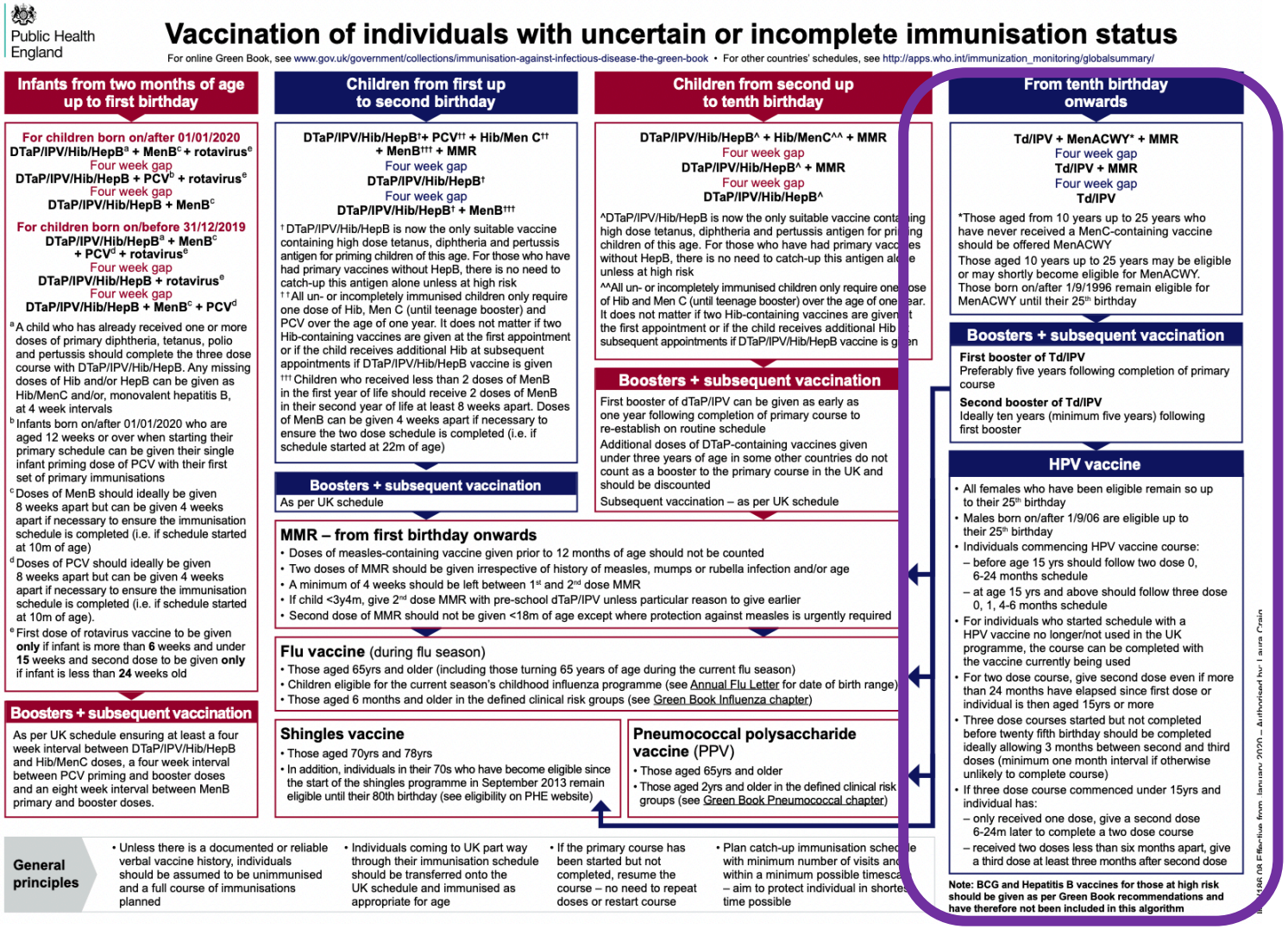
2 doses MMR

1 dose MenACWY (10-25 years)

HPV (15-25 years old)

High-risk groups: Hep B, BCG

All migrants in the UK have access to primary care and therefore vaccination regardless of immigration status



Public Health England

Vaccination of individuals with uncertain or incomplete immunisation status

For online Green Book, see www.gov.uk/government/collections/immunisation-against-infectious-disease-the-green-book • For other countries' schedules, see http://apps.who.int/immunization_monitoring/globalsummary/

Infants from two months of age up to first birthday

For children born on/after 01/01/2020

DTaP/IPV/Hib/HepB[a] + MenB[c] + rotavirus[e]

Four week gap

DTaP/IPV/Hib/HepB + PCV[b] + rotavirus[e]

Four week gap

DTaP/IPV/Hib/HepB + MenB[c]

For children born on/before 31/12/2019

DTaP/IPV/Hib/HepB[a] + MenB[c] + PCV[d] + rotavirus[e]

Four week gap

DTaP/IPV/Hib/HepB + rotavirus[e]

Four week gap

DTaP/IPV/Hib/HepB + MenB[c] + PCV[d]

[a] A child who has already received one or more doses of primary diphtheria, tetanus, polio and pertussis should complete the three dose course with DTaP/IPV/Hib/HepB. Any missing doses of Hib and/or HepB can be given as Hib/MenC and/or, monovalent hepatitis B, at 4 week intervals

[b] Infants born on/after 01/01/2020 who are aged 12 weeks or over when starting their primary schedule can be given their single infant priming dose of PCV with their first set of primary immunisations

[c] Doses of MenB should ideally be given 8 weeks apart but can be given 4 weeks apart if necessary to ensure the immunisation schedule is completed (i.e. if schedule started at 10m of age)

[d] Doses of PCV should ideally be given 8 weeks apart but can be given 4 weeks apart if necessary to ensure the immunisation schedule is completed (i.e. if schedule started at 10m of age).

[e] First dose of rotavirus vaccine to be given **only** if infant is more than **6** weeks and under **15** weeks and second dose to be given **only** if infant is less than **24** weeks old

Boosters + subsequent vaccination

As per UK schedule ensuring at least a four week interval between DTaP/IPV/Hib/HepB and Hib/MenC doses, a four week interval between PCV priming and booster doses and an eight week interval between MenB primary and booster doses.

Children from first up to second birthday

DTaP/IPV/Hib/HepB[†]+ PCV[††] + Hib/Men C[††] + MenB[†††] + MMR

Four week gap

DTaP/IPV/Hib/HepB[†]

Four week gap

DTaP/IPV/Hib/HepB[†] + MenB[†††]

[†] DTaP/IPV/Hib/HepB is now the only suitable vaccine containing high dose tetanus, diphtheria and pertussis antigen for priming children of this age. For those who have had primary vaccines without HepB, there is no need to catch-up this antigen alone unless at high risk

[††] All un- or incompletely immunised children only require one dose of Hib, Men C (until teenage booster) and PCV over the age of one year. It does not matter if two Hib-containing vaccines are given at the first appointment or if the child receives additional Hib at subsequent appointments if DTaP/IPV/Hib/HepB vaccine is given

[†††] Children who received less than 2 doses of MenB in the first year of life should receive 2 doses of MenB in their second year of life at least 8 weeks apart. Doses of MenB can be given 4 weeks apart if necessary to ensure the two dose schedule is completed (i.e. if schedule started at 22m of age)

Boosters + subsequent vaccination

As per UK schedule

Children from second up to tenth birthday

DTaP/IPV/Hib/HepB^ + Hib/MenC^^ + MMR

Four week gap

DTaP/IPV/Hib/HepB^ + MMR

Four week gap

DTaP/IPV/Hib/HepB^

^DTaP/IPV/Hib/HepB is now the only suitable vaccine containing high dose tetanus, diphtheria and pertussis antigen for priming children of this age. For those who have had primary vaccines without HepB, there is no need to catch-up this antigen alone unless at high risk

^^All un- or incompletely immunised children only require one dose of Hib and Men C (until teenage booster) over the age of one year. It does not matter if two Hib-containing vaccines are given at the first appointment or if the child receives additional Hib at subsequent appointments if DTaP/IPV/Hib/HepB vaccine is given

Boosters + subsequent vaccination

First booster of dTaP/IPV can be given as early as one year following completion of primary course to re-establish on routine schedule

Additional doses of DTaP-containing vaccines given under three years of age in some other countries do not count as a booster to the primary course in the UK and should be discounted

Subsequent vaccination – as per UK schedule

From tenth birthday onwards

Td/IPV + MenACWY* + MMR

Four week gap

Td/IPV + MMR

Four week gap

Td/IPV

*Those aged from 10 years up to 25 years who have never received a MenC-containing vaccine should be offered MenACWY

Those aged 10 years up to 25 years may be eligible or may shortly become eligible for MenACWY. Those born on/after 1/9/1996 remain eligible for MenACWY until their 25th birthday

Boosters + subsequent vaccination

First booster of Td/IPV
Preferably five years following completion of primary course

Second booster of Td/IPV
Ideally ten years (minimum five years) following first booster

HPV vaccine

- All females who have been eligible remain so up to their 25th birthday
- Males born on/after 1/9/06 are eligible up to their 25th birthday
- Individuals commencing HPV vaccine course:
  - before age 15 yrs should follow two dose 0, 6-24 months schedule
  - at age 15 yrs and above should follow three dose 0, 1, 4-6 months schedule
- For individuals who started schedule with a HPV vaccine no longer/not used in the UK programme, the course can be completed with the vaccine currently being used
- For two dose course, give second dose even if more than 24 months have elapsed since first dose or individual is then aged 15yrs or more
- Three dose courses started but not completed before twenty fifth birthday should be completed ideally allowing 3 months between second and third doses (minimum one month interval if otherwise unlikely to complete course)
- If three dose course commenced under 15yrs and individual has:
  - only received one dose, give a second dose 6-24m later to complete a two dose course
  - received two doses less than six months apart, give a third dose at least three months after second dose

Note: BCG and Hepatitis B vaccines for those at high risk should be given as per Green Book recommendations and have therefore not been included in this algorithm

MMR – from first birthday onwards

- Doses of measles-containing vaccine given prior to 12 months of age should not be counted
- Two doses of MMR should be given irrespective of history of measles, mumps or rubella infection and/or age
- A minimum of 4 weeks should be left between 1st and 2nd dose MMR
- If child <3y4m, give 2nd dose MMR with pre-school dTaP/IPV unless particular reason to give earlier
- Second dose of MMR should not be given <18m of age except where protection against measles is urgently required

Flu vaccine (during flu season)

- Those aged 65yrs and older (including those turning 65 years of age during the current flu season)
- Children eligible for the current season's childhood influenza programme (see Annual Flu Letter for date of birth range)
- Those aged 6 months and older in the defined clinical risk groups (see Green Book Influenza chapter)

Shingles vaccine

- Those aged 70yrs and 78yrs
- In addition, individuals in their 70s who have become eligible since the start of the shingles programme in September 2013 remain eligible until their 80th birthday (see eligibility on PHE website)

Pneumococcal polysaccharide vaccine (PPV)

- Those aged 65yrs and older
- Those aged 2yrs and older in the defined clinical risk groups (see Green Book Pneumococcal chapter)

General principles

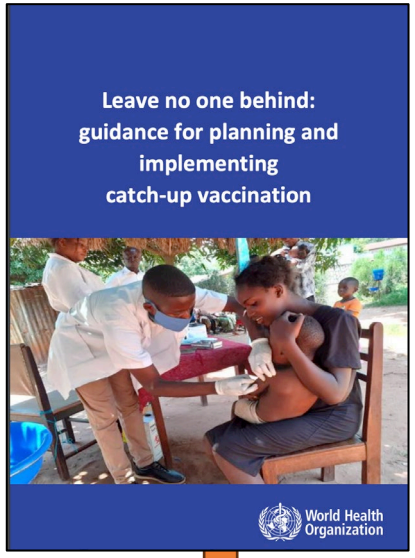
- Unless there is a documented or reliable verbal vaccine history, individuals should be assumed to be unimmunised and a full course of immunisations planned
- Individuals coming to UK part way through their immunisation schedule should be transferred onto the UK schedule and immunised as appropriate for age
- If the primary course has been started but not completed, resume the course – no need to repeat doses or restart course
- Plan catch-up immunisation schedule with minimum number of visits and within a minimum possible timescale – aim to protect individual in shortest time possible

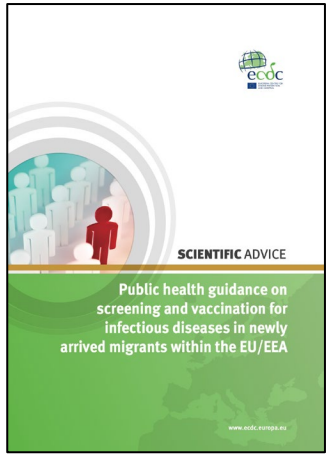
PHE gateway number: 2020186 08 Effective from January 2020 – Authorised by Laura Crain

Catch-up vaccination: What should we be offering arriving migrants?

Catch-up vaccination guidelines and recommendations

- **WHO** recommends catch-up vaccination for mobile groups according to national schedules
- Ensures **missed vaccines/doses/boosters** are administered
- Catch-up initiatives are needed for migrants (of all ages) due to **missed doses in countries of origin**





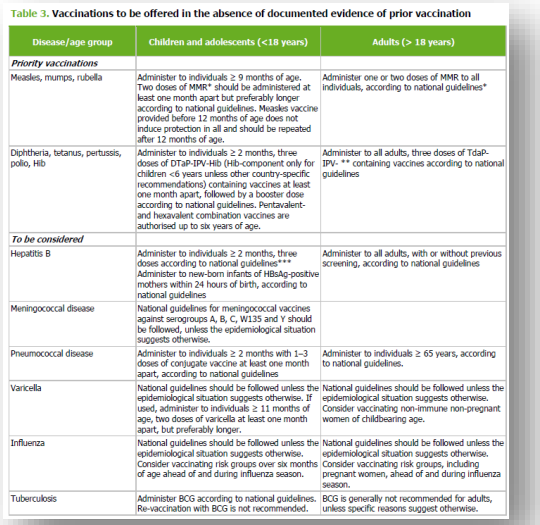


Table 3. Vaccinations to be offered in the absence of documented evidence of prior vaccination

Disease/age group	Children and adolescents (<18 years)	Adults (> 18 years)
Priority vaccinations		
Measles, mumps, rubella	Administer to individuals ≥ 9 months of age. Two doses of MMR* should be administered at least one month apart but preferably longer according to national guidelines. Measles vaccine provided before 12 months of age does not induce protection in all and should be repeated after 12 months of age.	Administer one or two doses of MMR to all individuals, according to national guidelines*
Diphtheria, tetanus, pertussis, polio, Hib	Administer to individuals ≥ 2 months, three doses of DTaP-IPV-Hib (Hib-component only for children <6 years unless other country-specific recommendations) containing vaccines at least one month apart, followed by a booster dose according to national guidelines. Pentavalent- and hexavalent combination vaccines are authorised up to six years of age.	Administer to all adults, three doses of TdaP-IPV- ** containing vaccines according to national guidelines
To be considered		
Hepatitis B	Administer to individuals ≥ 2 months, three doses according to national guidelines*** Administer to new-born infants of HBsAg-positive mothers within 24 hours of birth, according to national guidelines	Administer to all adults, with or without previous screening, according to national guidelines
Meningococcal disease	National guidelines for meningococcal vaccines against serogroups A, B, C, W135 and Y should be followed, unless the epidemiological situation suggests otherwise.	
Pneumococcal disease	Administer to individuals ≥ 2 months with 1–3 doses of conjugate vaccine at least one month apart, according to national guidelines	Administer to individuals ≥ 65 years, according to national guidelines.
Varicella	National guidelines should be followed unless the epidemiological situation suggests otherwise. If used, administer to individuals ≥ 11 months of age, two doses of varicella at least one month apart, but preferably longer.	National guidelines should be followed unless the epidemiological situation suggests otherwise. Consider vaccinating non-immune non-pregnant women of childbearing age.
Influenza	National guidelines should be followed unless the epidemiological situation suggests otherwise. Consider vaccinating risk groups over six months of age ahead of and during influenza season.	National guidelines should be followed unless the epidemiological situation suggests otherwise. Consider vaccinating risk groups, including pregnant women, ahead of and during influenza season.
Tuberculosis	Administer BCG according to national guidelines. Re-vaccination with BCG is not recommended.	BCG is generally not recommended for adults, unless specific reasons suggest otherwise.

ECDC recommends MMR, Diphtheria, tetanus, pertussis, polio to be re-administered all adolescent and adult migrants with uncertain vaccination status

*"**For certain mobile populations (e.g. refugees, asylum seekers, migrant populations), offering catchup vaccination is critical** to ensure they have the opportunity to be caught up to date according to the local recommended immunization schedule."*

System-level barriers

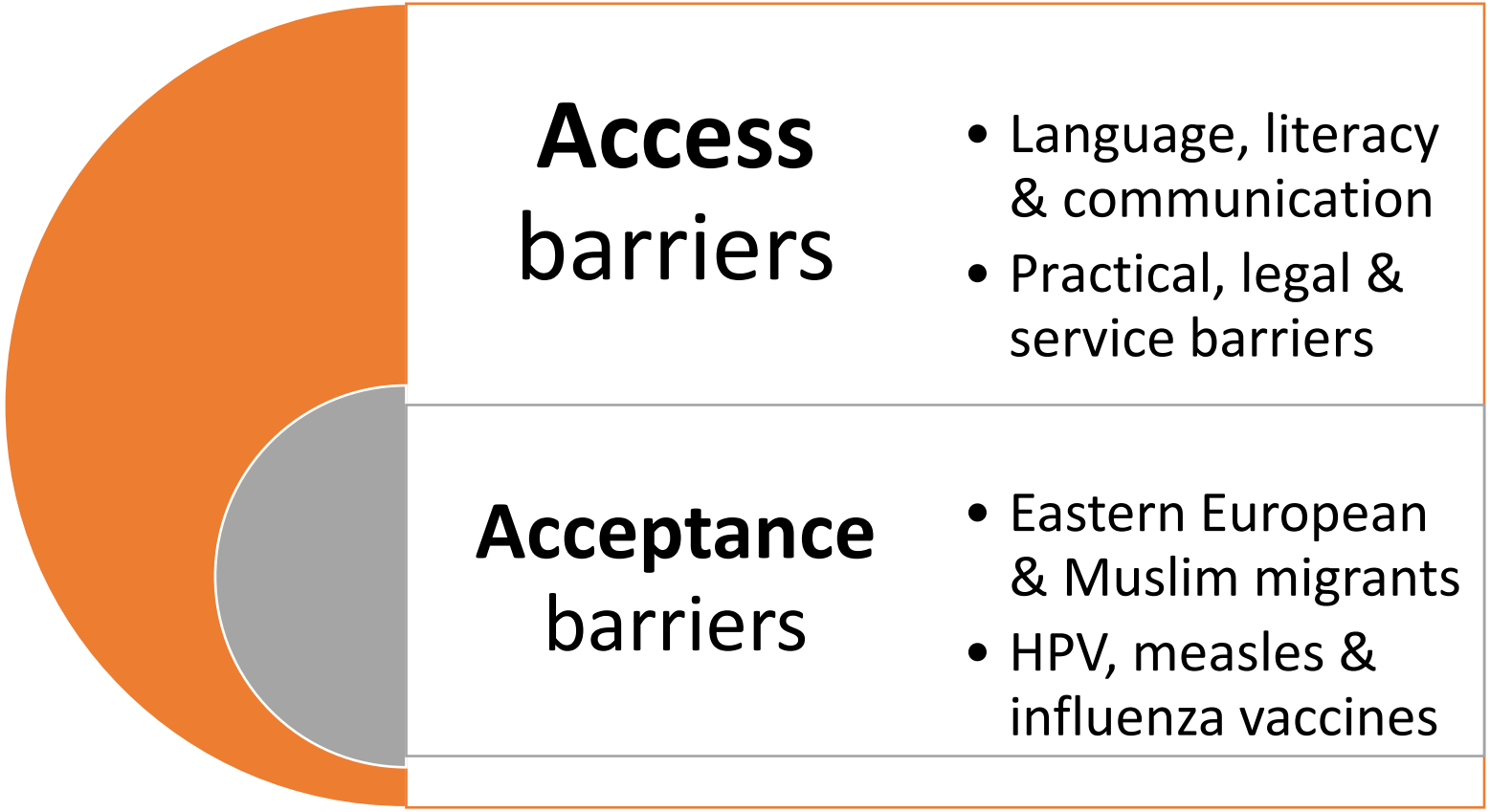
Staff Direct Barriers	Staff Indirect Barriers
Lack of knowledge by staff regarding catch-up vaccines and current guidelines	**Lack of time/resources and competing priorities** to carry out proactive catch-up programmes
Unclear/poorly documented **vaccine records**	**Complex patients,** unable to have time/resource to follow-up on vaccine needs
Limited appointment times, problems with **supplies** of vaccines	Adult/adolescent catch-up vaccination programmes fall **outside of current financial incentive schemes to clinicians are not reimbursed**

BMJ Open

"We don't routinely check vaccination background in adults": a national qualitative study of barriers and facilitators to vaccine delivery and uptake in adult migrants through UK primary care

What are the factors associated with migrants being under-vaccinated in the European context?

Key determinants of **vaccine uptake** in migrants in Europe



Access barriers

- Language, literacy & communication
- Practical, legal & service barriers

Acceptance barriers

- Eastern European & Muslim migrants
- HPV, measles & influenza vaccines

23 determinants of **under-vaccination** ($p<0.05$):

- **Geographical origin >> African or Eastern European**
- **Recent migration**
- **Being an asylum seeker/refugee**

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Defining the determinants of vaccine uptake and undervaccination in migrant
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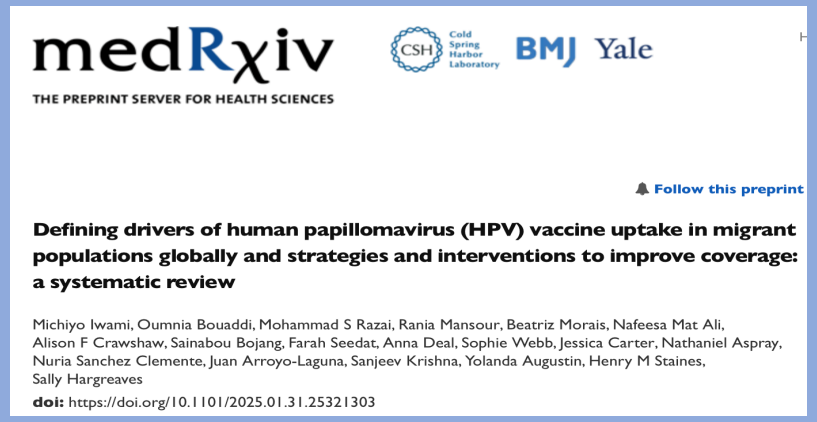

☑ Factors negatively influencing HPV vaccine uptake in migrants that could help us frame interventions:

- Concerns about vaccine safety
- Uncertainty and low levels of knowledge about HPV vaccines/infection
- Inter-generational and family dynamics (influence of the father over the mother's decision making)
- Exposure to negative information
- Cultural beliefs - culturally-rooted misconceptions
- Lack of recommendations from healthcare providers to have HPV

Strategies to strengthen life-course immunisation in migrants

Thinking and Feeling

Perceived disease risk
Vaccine confidence (perceived benefits, safety and trust)

- Involve migrants in tailoring information, resources, and messaging to appropriately reflect migrants' views, values, and basic needs (consider language, literacy, digital/offline/in-person formats, cultural and religious references and values)
- Involve migrants in choosing and delivering appropriate forms of outreach and engagement, e.g. using community champions, religious centres and leaders, & trusted messengers
- Build trust through increased transparency and through specific policies, agendas, compacts and approaches to empower these communities

Social processes

Social norms (support of family and religious leaders)
Health worker recommendation

- Build and maintain partnerships with local community organisations, work with local community assets, and leverage existing networks (e.g. grassroots organisations, places of worship, schools) to design and deliver services and approaches grounded in local knowledge; establish a shared agenda to build trust; provide training and resources; facilitate links with local government, public health and clinical commissioning groups.
- Identify and harness respected and trusted messengers to deliver messages, recommendations to vaccinate, and facilitate dialogue; recognising their time and expertise.

Practical issues

Availability
- Introduce catch-up vaccination targets to ensure funding directed towards availability of routine vaccines for adults and adolescents

Affordability
- Reduced out-of-pocket costs; alternative vaccination settings to reduce need for travel

Ease of access
- Widen access through alternative vaccination settings (e.g. work, home, school, community), out of hours appointments, health workforce training to ensure eligible patients are not turned away or face administrative barriers, support to make appointments

Service quality
- Involve migrants in service design and quality-improvement

Respect from health workers
- Train clinical and administrative staff in migrant-sensitive approaches; provide access to interpreters and translated resources

Motivation
Intention to get recommended vaccines

Meaningfully involve and empower communities to plan, design, lead, and implement strategies

Vaccination
Uptake of recommended vaccines

Figure adapted from the BeSD working group, based on Brewer et al. Psychol Sci Public Interest. 2017.

Strategi migrants

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- Identify and recommendations expertise.

☑ Doctors' recommendations were influential – trust/confidence in the benefits of HPV and the views of the provider were critical

☑ Information from providers or peers was influential – culturally sensitive messaging, using appropriate communication methods, targeted at specific migrant subgroups/nationalities, addressing misconceptions

☑ Interventions such as school-based schemes, community-based interventions and free-of-charge services led to increased uptake


medRxiv
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BMJ Yale
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Defining drivers of human papillomavirus (HPV) vaccine uptake in migrant populations globally and strategies and interventions to improve coverage: a systematic review
Michiyo Iwami, Oumnia Bouaddi, Mohammad S Razai, Rania Mansour, Beatriz Morais, Nafeesa Mat Ali, Alison F Crawshaw, Sainabou Bojang, Farah Seedat, Anna Deal, Sophie Webb, Jessica Carter, Nathaniel Aspray, Nuria Sanchez Clemente, Juan Arroyo-Laguna, Sanjeev Krishna, Yolanda Augustin, Henry M Staines, Sally Hargreaves
doi: https://doi.org/10.1101/2025.01.31.25321303

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Meaningfully involve and empower communities to plan, design, lead, and implement strategies

Vaccination
Uptake of recommended vaccines

Figure adapted from the BeSD working group, based on Brewer et al. Psychol Sci Public Interest. 2017.

Key recommendations: policy, practice and research

Policy

- Inclusion of all migrants in vaccination policies (inc. undocumented migrants).
- Ensure free routine vaccinations and remove legal/practical barriers.
- Develop catch-up vaccination guidelines & adequately fund health systems for catch-up vaccination pathways
- Improve data collection on vaccine uptake and demand (e.g. integrate migrant into routine health information systems) or these populations remain invisible

Practice – what works?

- Develop catch-up vaccination pathways for newly arrived adolescents and adults.
- Train healthcare staff to deliver life-course immunisation to diverse migrant groups.
- Co-design vaccine interventions with migrant communities to build trust and address barriers.
- Innovate service delivery (e.g., outreach, faith/community-based venues, interpreters).
- Tailor culturally and linguistically appropriate vaccination campaigns.
- Integrate vaccination with other migrant services at various access points.

Research

- National-level robust data collection on uptake of routine vaccination (disaggregated by migrant status, country of origin, age and gender)
- Large scale research to understand the drivers of under-vaccination and vaccine hesitancy + effective interventions to address drivers of non-uptake + access points
- Explore trusted information channels among specific groups
- Support research among the most marginalised and under-studied migrant groups such as undocumented migrants, migrant workers and those at high-risk of VPDs