

## Migration and outbreaks of vaccine-preventable disease in Europe: a systematic analysis (1990-2019)

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### Background:

Migrant populations (defined as foreign-born) in the EU/EEA may be one of several under-immunised populations yet their role in outbreaks of vaccine-preventable diseases (VPDs) has been poorly defined to date.

### Methods:

We did both a temporal analysis to map published reports of migrant-related outbreaks against data from the ECDC's

Surveillance Atlas of Infectious Disease, and a systematic review (PROSPERO CRD42019157473; 1990-2019) adhering to PRISMA guidelines, to explore whether migrants are involved in outbreaks in Europe and which particular subpopulations may be at increased risk. Studies on VPD outbreaks (measles, mumps, rubella, diphtheria, pertussis, polio, hepatitis A, N meningitidis, and H influenzae) in migrants residing in the EU/EEA were included.

### Results:

46 studies were included, reporting on 50 VPD outbreaks across 13 EU/EEA countries, of which 98% (n=49) occurred since January 2000. Measles had the highest number of reports of outbreaks involving migrants (n=21; 5043 cases), followed by varicella (n=10; 595 cases) and hepatitis A (n=10; 1226 cases). 21 (40%) of outbreaks were reported from shelters for asylum seekers and refugees (mainly varicella or measles). Of 27 outbreaks where the index case was defined, 20 (74.1%) were migrants, including 9 (33.3%) from Eastern Europe and 6 (22.2%) from Africa. When mapped against the ECDC timeline of measles outbreaks, migrant-related outbreaks coincide with Europe-wide peaks in measles incidence (in 2006, 2010, and 2018).

### Conclusions:

Migrants represent one key group involved in VPD outbreaks, with refugees/asylum seekers residing in shelters or camps particularly at risk. Measles accounted for 38% of all reported outbreaks. Improved data collection on migrant status across Europe is crucial to understanding the complex relationship between migration and occurrence of VPD outbreaks to inform policy decisions on the most effective strategies to prevent future outbreaks.

### Key messages:

- Migrants represent one key group involved in vaccine-preventable diseases outbreaks in Europe.
- Refugees and asylum seekers may be particularly at risk.