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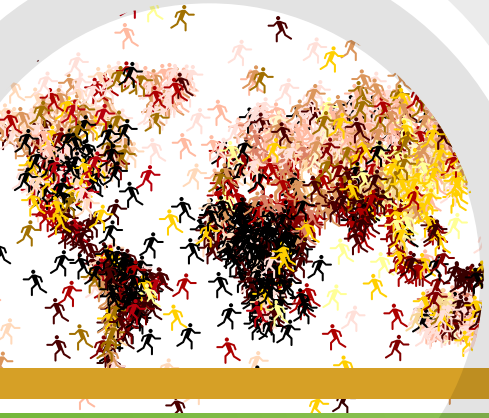

EXECUTIVE SUMMARY

Assessing the burden of key infectious diseases affecting migrant populations in the EU/EEA

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Introduction

Migrant health is receiving increasing attention in Europe and is a priority for ECDC. This summary presents the main findings and conclusions of an ECDC project to assess the burden of infectious diseases among migrants in the EU/EEA and the completeness, quality and usefulness of data collected by the European Surveillance System (TESSy).

The infectious diseases covered are human immunodeficiency virus (HIV), tuberculosis (TB), hepatitis B, hepatitis C, gonorrhoea, syphilis, measles and rubella, malaria and Chagas disease. These diseases were selected because data disaggregated by migrant status is collected by TESSy or because evidence suggests that they may disproportionately affect migrants in the EU/EEA.

The project used data from the following data sources: TESSy[1]; a literature review[2]; and a survey of disease focal points in EU/EEA countries[3]. This was supplemented with data from ECDC expert meetings and more recent ECDC surveillance reports. Two categories of variables related to migration were available from TESSy (see Table A):

Variables to determine the migration status of affected individuals (e.g. either 'country of birth' or 'country of nationality' or 'region of origin').

Variables to determine whether the infection was 'imported' or to ascertain 'probable country of infection'.

1 Chagas disease is not currently monitored by TESSy; data is therefore drawn from the literature review only.

2 A literature review was conducted for TB, hepatitis B, hepatitis C, gonorrhoea, syphilis, measles and rubella. Separate literature reviews were conducted for malaria and Chagas diseases. Data on HIV is mainly based on TESSy analysis.

3 Three surveys were sent: on hepatitis B and C, gonorrhoea and syphilis, and measles and rubella.

The 'country of birth' variable was used whenever possible, as this is deemed to be the most reliable indicator of whether or not an individual is a migrant. Completeness of data on migrant-related variables depends on the disease. Data on 'country of birth' of cases were most complete for HIV and TB and less complete for hepatitis B, hepatitis C, gonorrhoea and syphilis. For TB, the geographic origin is classified according to place of birth or, if unavailable, is based on citizenship. For measles and rubella, 'country of birth' was poorly reported, but the variable for 'imported' or 'indigenous' cases was well reported. In general, variables on 'probable country of infection' were poorly reported.

Table A: Variables currently collected through TESSy

Variable	HIV	TB	HBV	HCV	Gonorrhoea	Syphilis	Measles	Rubella	Malaria	Chagas disease*
Country of birth	X	X	X	X	X	X				
Country of nationality	X	X	X	X	X	X				
Probable country of infection	X		X	X	X	X	X	X	X	
Imported			X	X			X	X	X	
Region of origin	X									

* Not under EU surveillance

Key findings

The following provides an overview of the burden of infectious disease, disease trends and modes of transmission among migrant populations in the EU/EEA, based on available data for each specific disease.

Migrant populations in the EU/EEA are disproportionately affected by HIV.

Between 2007 and 2011, migrants represented 39% of reported HIV cases. Overall, the number of new HIV cases diagnosed in migrants in the EU/EEA rose slightly during the period 2007–2011, with increases among migrants from Latin America, central and eastern Europe and decreases among migrants from sub-Saharan Africa.

Overall figures mask differences between EU/EEA countries. Between 2007 and 2011, 92% of HIV cases in migrants were reported by countries in western Europe. Most HIV cases reported among migrants were from sub-Saharan Africa and in some EU/EEA countries migrants accounted for a significant proportion of HIV cases resulting from heterosexual transmission. However, the predominant mode of transmission among migrants also depends on country or region of origin. For example, a high proportion of HIV cases in migrants from Latin America have been reported in men who have sex with men (MSM). There is also growing evidence that some migrant populations are at risk of acquiring HIV infection after arrival in the EU/EEA.

Late diagnosis of HIV among migrants is a key issue in some EU/EEA countries, and migrants with HIV infection often have poorer clinical and immunological indicators at diagnosis than native-born HIV cases.

Migrant populations in the EU/EEA are also disproportionately affected by TB.

Although the majority of TB cases in Europe occur in individuals born in the region, TB is also a significant issue among migrant populations. The proportion of TB cases among migrants has increased, from 10% in 2000 to 25% in 2010. Again, overall figures mask differences between EU/EEA countries. In 2011, countries such as Cyprus, Iceland, the Netherlands, Norway, Sweden and the United Kingdom reported more than 70% of TB cases in migrants, while other countries reported few or no cases in migrants.

TB notification rates are higher in foreign-born than native-born populations in most EU/EEA countries and, although overall incidence is declining in the EU/EEA, the opposite is the case among migrants.

The proportion of TB cases achieving successful treatment outcomes at 12 months is lower among migrants than among non-migrants. Limited available data also suggest that knowledge of HIV status is lower among migrant TB cases than among non-migrant TB cases.

In the EU/EEA, migrant TB cases are mainly from Asia, Africa and other parts of the European region. Country or region of origin depends on migration patterns. For example, in the United Kingdom, 57% of foreign-born TB cases reported in 2010 came from southern Asia and 27% from sub-Saharan Africa. In the Netherlands, the main countries of origin for TB cases are Somalia, Morocco and Turkey, which are the most common countries of origin among migrants.

Available data suggest that active TB occurs at a younger age in migrants than in the native population and that the risk of contracting extrapulmonary TB is twice as high in migrants, while MDR-TB is less common among foreign-born cases than native-born cases. Evidence also suggests that concerns over migrants increasing the risk of TB in native populations are unfounded.

Available data suggest that migrants are not disproportionately affected by gonorrhoea or syphilis.

Data on gonorrhoea and syphilis disaggregated by migrant status are only available from a few countries. These data show that in 2010 11% of gonorrhoea cases were in migrants and 50% were in non-migrants while 7.3% of syphilis cases were in migrants and 55.4% in non-migrants.

Between 2000 and 2010, the overall proportion of gonorrhoea and syphilis cases among migrants in the EU/EEA remained stable. However, while the ratio of gonorrhoea cases in males and females for non-migrants has remained stable over time, the proportion of cases in females increased among migrants between 2000 and 2010.

Reported data suggest that migrants are around four times more likely to acquire gonorrhoea through heterosexual contact than through MSM contact. The proportion of gonorrhoea cases among sex workers has been consistently higher in migrants than in non-migrants since 2000 and appears to have increased significantly in migrants since 2006. Reported data also show differences in mode of syphilis transmission between migrants and non-migrants, although these differences have decreased over time. Overall, between 2000 and 2010, migrants were slightly more likely to contract syphilis through heterosexual contact than through MSM contact, whereas non-migrants were more likely to contract syphilis through MSM contact than through heterosexual contact.

Hepatitis B, particularly chronic hepatitis infection, is an issue among migrant populations in the EU/EEA.

In 2011, 18 EU/EEA countries provided data on 'imported' cases for 39.1% of all cases reported to ECDC. Of these just over half (52.6%), were recorded as 'imported'. In all, 6.3% of these cases were acute infections and 81.5% were chronic infections. During the period 2006–2010, there was a decrease in notification rates for acute hepatitis B infection in the EU/EEA and an increase in chronic infections. Here too, overall figures mask differences between countries. In 2010, among acute cases of hepatitis B reported, the proportion of imported cases ranged from 0% in Austria, the Czech Republic, Germany, Greece, Hungary and Poland to 69.2% in Finland. Among chronic cases the proportion of imported cases ranged from 0% in Estonia to 96.1% in Sweden.

Although it is difficult to draw definitive conclusions due to differences in national surveillance systems and incompleteness of data, other evidence indicates that there is a higher prevalence of chronic hepatitis B infection among migrants than among the native-born population. Available data suggest that hepatitis B prevalence is highest among migrants from countries with high and intermediate endemicity in eastern Europe, Asia and sub-Saharan Africa. While hepatitis B cases in native-born populations in the EU/EEA are likely to occur in high-risk groups, such as injecting drug users and MSM, cases in migrant populations are more likely to have been acquired in the country of origin and via vertical transmission from mother to child.

It is difficult to draw definitive conclusions about the burden of hepatitis C among migrants in EU/EEA countries as data on acute and chronic infections are limited.

However, reported data suggest that the prevalence of chronic infections is higher among 'imported' cases of hepatitis C. There is also some evidence from France, the Netherlands, Spain and the United Kingdom that prevalence is higher in migrants from endemic countries than in the general population. However, prevalence in migrant populations was lower than the estimated prevalence in their countries of origin. Insufficient data are available to comment on trends in hepatitis C infection among migrants.

As information on 'country of birth' for measles and rubella cases is not available from TESSy, it is not possible to draw conclusions about the occurrence of measles or rubella among migrants.

Of the 10 271 cases of measles reported through TESSy in 2013, only 2.7% were categorised as 'imported' and 0.3% as 'import-related'. Although reasons for measles outbreaks vary among countries they often include inadequate vaccination coverage. Studies from some countries suggest that migrant children may be at higher risk because they are less likely to be vaccinated against measles than non-migrant children.

Rubella cases are reported to TESSy as either 'imported' 'import-related', 'indigenous' or of 'unknown origin'. In 2011, 13 countries reported data for this variable. Of the 201 rubella cases reported by these countries, 8.5% were categorised as 'imported'. Some of the few studies available on rubella

among migrants suggest that there may be a correlation between migrant status and rubella immunity in pregnant women, while others identify migration as one of the risk factors for children not being vaccinated against rubella.

Some sub-groups of migrants, particularly those visiting malaria-endemic countries of origin, are at high risk of malaria.

In EU/EEA countries, 99% of reported malaria cases are 'imported'. Indigenous cases of malaria in the EU/EEA could be linked to the presence of efficient malaria vectors and favourable conditions for malaria transmission, combined with the arrival and high turnover of migrant seasonal workers from malaria-endemic countries.

In a range of studies, recent immigrants and migrants visiting their home country accounted for between 5.0% and 81% of reported malaria cases; those visiting their country of origin appear to be at higher risk of acquiring malaria. Among established migrants who visit their home country pregnant women and children are at particular risk. A migrant's country of origin also influences the disease profile. For example, *P. falciparum* malaria occurs mainly in migrants whose countries of origin are located in sub-Saharan Africa.

Chagas disease has occurred in Europe as a result of migration from endemic countries in Latin America.

Although the disease is not systematically monitored by countries in the EU/EAA, the number of cases reported has increased in the last decade and available data suggest that prevalence rates are high enough to warrant concern. Spain, Italy, the Netherlands, the United Kingdom, Germany and France have the highest estimated number of cases in Europe.

Conclusions and next steps

Drawing overall conclusions about infectious diseases and migrants in the EU/EEA is challenging. Patterns and trends vary considerably depending on the disease in question. This is confounded by the diversity of migrants and the changing patterns of migration both to and within Europe. However, it appears that certain sub-groups of migrants are more affected by some infectious diseases (in particular HIV, TB, Chagas disease and, possibly, chronic hepatitis B infection) than the native-born population. Meanwhile, for other infectious diseases the opposite appears to be the case. There is limited evidence about transmission of infectious diseases between migrant and native-born citizens.

Accurate information on migrants and migrant health is not available in many European countries. Moreover, there are significant limitations on the interpretation of data relating to migrant health. Comparisons of migrant health across Europe are challenging due to varying definitions of migrants. Calculating disease prevalence and incidence rates in migrants is difficult as migration statistics may not include irregular migrants and, thus, denominators may be underestimated.

Differences in national surveillance systems and gaps in migrant-related data also make it difficult to draw conclusions. TESSy has collected data on country of origin for HIV and TB for some years and efforts have been made more recently to harmonise data collected by national surveillance systems on migrant-specific variables for other diseases (including hepatitis B and C, syphilis, gonorrhoea and measles). However, the type and quality of surveillance data collected still varies between countries and reporting on some migrant-specific variables is poor or absent (see Table B). Determining trends is difficult because of changes

Table B: Completeness (%) of variables collected through TESSy

Variable	HIV (2012)	TB (2011)	HBV (2011)	HCV (2011)	Gonorrhoea (2011)	Syphilis (2011)	Measles (2013)	Rubella (2013)	Malaria (2012)	Chagas disease*
Country of birth	62	95.6	19.1	14.4	17	26				
Country of nationality	28	96.3	6.8	6.6	4	17				
Probable country of infection	17		20.2	7.6	9	10	3	5	90.1	
Imported			39.1	40.5			82	96	98.7	
Region of origin	62.5									

* Not under EU surveillance

in reporting and in the number of countries reporting over time as well as changes in migration patterns.

The following sets out ways in which data on migrant health could be improved, for specific diseases and more generally.

- HIV surveillance among migrants could be strengthened by having more complete data and improved analysis of variables such as country of birth, CD_4 cell count at diagnosis, year of arrival, probable country of infection, and migrant sub-populations at greatest risk of HIV infection. HIV surveillance data also needs to be disaggregated for migrants and non-migrants for MSM and people who inject drugs.
- TB surveillance among migrants could be strengthened by having more complete data and improved analysis of variables such as origin of cases, HIV status and probable country of infection. Better data is also needed on latent TB and health determinants.
- Better data is needed on hepatitis B and hepatitis C in migrant populations in the EU/EEA.
- Better understanding is needed of the reasons for the apparent increased risk of gonorrhoea among sub-groups of migrants, particularly women and sex workers, and of the relationship between syphilis, sex worker status and HIV co-infection.

- Further investigation would improve understanding of trends and the reasons for apparent increases or decreases in reported cases among migrants.
- Better data on probable country of infection is required for HIV, as migrants appear to be at risk of infection after arrival in the EU/EEA. An objective method for assigning probable country of infection is currently being developed for HIV, which could be applied across EU/EEA countries. More complete data on year of arrival would also help to strengthen monitoring of post-arrival acquisition of infectious diseases among migrants.
- More complete data on country of origin or parental country of origin of paediatric TB cases is needed, as children from high-TB-burden countries and children of migrant parents from high-burden countries are at risk of acquiring infection. In most EU/EEA countries, surveillance data for TB cases in children do not distinguish between children born in the host country of foreign-born parents and those born of native parents. This is of concern since children of migrants may experience similar social, behavioural and environmental risk factors to foreign-born populations.
- There is a need to improve awareness and detection of Chagas disease in Europe to ensure that the disease is diagnosed and treated, and to increase awareness regarding the prevention of transmission through blood, organ, tissue and cell donation by Latin American donors and congenital transmission in pregnant women from Latin America who are infected with *T. cruzi*.
- Increased ECDC collaboration with other agencies in order to obtain updated information on the number of migrants in EU countries would enable the calculation of rates and trends based on more accurate denominators, although denominators may still not include irregular migrants. Data on the number of new migrants per year

may be better collected and more reliable; this could be used to estimate incidence of disease in recently migrated populations.

- European disease-specific networks should be engaged in discussions on what data is already collected at national level, and whether additional migrant-related variables would add value at EU and country level.

In order to address many of these issues, ECDC, in partnership with the WHO Regional Office for Europe and the International Organisation for Migration (IOM), is currently developing a public health framework on how to improve the monitoring of infectious diseases among migrant populations in the EU/EEA. The framework will be tailored to the needs of EU/EEA Member States and will build on the 2008 World Health Assembly Resolution (WHA61.17) 'Health of Migrants'[4] and the operational framework outlined by the 2010 Global Consultation[5]. The ECDC/WHO/IOM framework will provide guidance on how to:

- Ensure the standardisation and comparability of data on infectious diseases in migrant populations by identifying key indicators that are acceptable across countries.
- Increase understanding of trends and outcomes through the appropriate disaggregation and analysis of migrant health information in ways that account for the diversity of migrant populations.
- Promote the inclusion of migration variables in existing censuses, national statistics, targeted health surveys and routine health information systems, as well as in statistics from other sectors.

4 Sixty-first World Health Assembly (WHA61.17). Health of Migrants. http://apps.who.int/gb/ebwha/pdf_files/A61/A61_R17-en.pdf

5 Health of Migrants: The way forward – Report of a global consultation, Madrid, Spain, 3-5 March 2010. http://www.who.int/hac/events/consultation_report_health_migrants_colour_web.pdf

- Suggest innovative approaches to collecting data on migrants beyond traditional instruments and surveillance.
- Raise awareness about data collection methods, use and dissemination related to migrant health among key stakeholders.
- Provide a template to EU/EEA Member States for a national monitoring system on migrant health and infectious diseases.

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