ECDC TECHNICAL DOCUMENT

Infectious diseases of specific relevance to newly-arrived migrants in the EU/EEA

19 November 2015

1. Infectious disease risks among newly-arrived migrants in the EU/EEA

Migrant populations entering the EU/EEA, and particularly children, are at risk of developing infectious diseases in the same way as other EU populations, and in some cases may be more vulnerable. It is important, therefore, that they should benefit from the same level of protection as indigenous populations with regard to infectious diseases, including those which can be prevented by routine vaccinations. In addition, these populations may be subject to specific risks of infectious diseases in relation to their country of origin, countries visited during their journey as migrants and the conditions they experienced during migration. This document serves as a reminder for frontline healthcare workers of the risks of infectious diseases for newly-arrived migrants. It does not cover risks related to chronic diseases and mental problems that may affect these populations.

The risk for EU/EEA countries of infectious disease outbreaks as a consequence of the current influx of migrants is extremely low. Although the likelihood that the specific infectious disease risks highlighted in this document will occur among migrants is low, or in some cases very low, they should still be considered, to ensure that they are recognised and treated in a timely manner, or prevented by immunisation when indicated. They do not represent a significant risk for EU/EEA populations.

2. Infectious diseases to consider according to country of origin

Table 1 provides examples of which infectious diseases to be aware of when screening symptomatic and asymptomatic newly-arrived migrants. The countries highlighted in the table are among the top five countries of origin for migrants entering the EU in 2015, excluding European countries (source: Eurostat[*†]). The list of infectious diseases is not exhaustive but can be used as an initial indication of where to focus attention. It is important to note that we cannot fully rely on epidemiology from the countries of origin when determining the infectious diseases to be vigilant for. Those who migrate are often younger and healthier and may therefore not be representative of the population of origin. In addition, a longer period in transit from country of origin to final destination, through a number of countries and settings with different disease epidemiology will influence the diseases to consider. Newly-arrived migrants with clinical complaints should receive diagnostic testing guided by their symptoms.

[*] Eurostat news release. 163/2015 – 18 September 2015. Asylum in the EU. Over 210 000 first-time asylum seekers in the EU in the second quarter of 2015

[†] Asylum statistics EUROSTAT. (Retrieved 4 September 2015). Available from: http://ec.europa.eu/eurostat/statistics-explained/index.php/Asylum_statistics

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Table 1. Infectious diseases to consider according to country of origin

Disease	Indicator	Syria	Afghanistan	Iraq	Eritrea	Somalia
Diphtheria [3]	Cases reported to WHO in 2012, 2013, 2014	0, 0, and NA	0, 0, 0	3, 4, and 5	8, 0 and NA	65, 7 and NA
Typhoid fever	Risk of typhoid	✓	✓	✓	✓	✓
Cholera*	Risk	No recent outbreak	Recurrent outbreaks	On-going outbreak in Baghdad Babylon, Najaf, Qadisiyyah, and Muthanna.	NA	Recurrent outbreaks
Hepatitis A†	Risk	High endemicity	NA	High endemicity	High endemicity	High endemicity
Hepatitis E‡	Risk	NA	NA	High endemicity	NA	High endemicity
Helminthiasis§	Risk of soil transmitted helminthiasis (ascaris, whipworm, hookworm)	+	++	+	++	++
	Risk of urinary schistosomiasis	✓	Non-endemic country	✓	✓	✓
Leishmaniasis**	Risk of cutaneous leishmaniasis	✓	✓	✓	✓	✓
	Risk of visceral leishmaniasis	✓	✓	✓	✓	✓
Hepatitis B††	Prevalence of chronic hepatitis B	Intermediate prevalence: 5.6%	High prevalence: 10.5%	Low prevalence: 1.3%	High prevalence: 15.5%	High prevalence: 12.4%
Hepatitis C‡‡	Prevalence	High prevalence: 3.1%	High prevalence: 1.1%	High prevalence: 3.2%	High prevalence: 1%	NA
HIV	Prevalence	Low	NA	Low	Low	Low
Malaria§§	Risk of malaria	Malaria-free	Risk of *P. vivax* >> *P. falciparum*	Malaria-free	Risk *of P. falciparum* >> *P. vivax*	Risk *of P. falciparum*
Measles*	Incidence per 100 000 in 2013 and 2014	1.84 and 2.68	1.41 and 1.75	2.09 and 3.02	0.77 and 0.02	2.17 and 9.12
Polio***	Cases reported to WHO in 2012, 2013 and 2014	0, 35 and NA	46, 17, and 28	0, 0, and 2	0, 0, and 0	1, 195 and 5
Tuberculosis†††	Incidence/100 000	Low: 17	High: 189	Low: 25	High: 40 to 499	High: 285
Antimicrobial resistance	Risk of carriage of multidrug-resistance Gram-negative bacteria	NA	NA	NA	NA	NA
Rabies	Risk level for humans contracting rabies	High	High	High	High	High

* World Health Organization. Global Health Atlas. [Internet] Available from: http://apps.who.int/globalatlas/

† World Health Organization. The Global Prevalence of Hepatitis A Virus Infection and Susceptibility: A Systematic Review. 2010. [Internet] Available from: http://apps.who.int/iris/bitstream/10665/70180/1/WHO_IVB_10.01_eng.pdf

‡ WHO. The Global Prevalence of Hepatitis E Virus Infection and Susceptibility: A Systematic Review Available from: http://apps.who.int/iris/bitstream/10665/70513/1/WHO_IVB_10.14_eng.pdf

§ World Health Organization. Intestinal worms – Epidemiology. 2015. [Internet] Available from: http://www.who.int/intestinal_worms/epidemiology/en/

** Alvar J, Vélez ID, Bern C, Herrero M, Desjeux P, Cano J, et al. Leishmaniasis - Worldwide and Global Estimates of Its Incidence. PLoS One 2012;7(5): e35671. [Internet] [cited 18 November 2015] Available from: http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0035671

†† Prevalence of chronic hepatitis B among foreign-born persons living in the United States by country of origin. Kowdley KV et al. Hepatology. 2012. Available from: http://onlinelibrary.wiley.com/doi/10.1002/hep.24804/epdf

‡‡ Global epidemiology and genotype distribution of the hepatitis C virus infection. Gower E et al. J Hepatology. 2014. Available from: http://www.sciencedirect.com/science/article/pii/S0168827814005261

§§ World Health Organization and WHO Regional Office for the Eastern Mediterranean (WHO-EMRO). Country profiles: Syria and Iraq. [Internet] [cited 18 November 2015]. Available from: http://www.emro.who.int/malaria/countries/ Country profiles: Afghanistan, Eritrea and Somalia. [Internet] [cited 18 November 2015]. Available from: http://www.who.int/malaria/publications/country-profiles/en/

*** Global Polio Eradication Initiative. Polio this week. 17 November 2016. [Internet]. Available from: http://www.polioeradication.org/Dataandmonitoring/Poliothisweek.aspx

††† World Health Organization Regional Office for the Eastern Mediterranean. WHO Eastern Mediterranean Region: Framework for health information systems and core indicators for monitoring health situation and health system performance. [Internet] [cited 18 November 2015]. Available from: http://applications.emro.who.int/dsaf/EMROPUB_2014_EN_1792.pdf?ua=1

3. Infectious diseases to consider in overcrowded settings

Poor living conditions, crowded shelters, detention centres and refugee camps may increase the risk of lice and/or fleas spreading and in rare cases these lice or fleas can carry diseases (e.g. louse-borne diseases such as relapsing fever due to *Borrelia recurrentis*, trench fever due to *Bartonella quintana*, epidemic typhus due to *Rickettsia prowazekii*, and murine typhus), as well as the spread of mites (scabies). In recent months, 27 cases of relapsing fever have been reported in the Netherlands, Germany, Finland and Belgium among migrants and refugees from Somalia, Eritrea, and Ethiopia. The latter mainly used the East African route for their journey and contracted the diseases during travel or early upon arrival into EU countries.

Meningococcal disease outbreaks have been associated with overcrowding in refugee settings. Sharing dormitories, poor hygiene, and limited access to medical care have been reported as contributing factors. The meningococcal carriage rate has been shown to be higher among individuals in overcrowded settings and most cases are acquired through exposure to asymptomatic carriers. Meningococcal disease is usually reported in children, but is still a leading cause of both meningitis and sepsis in adolescents, young adults and adults, particularly in densely-populated settings such as refugee camps. In addition, overcrowding has been associated with increased transmission of measles, varicella and influenza.

4. Infectious diseases to consider for differential diagnosis during clinical examination

Screening of migrant population for certain conditions is part of the prevention and control strategy for some countries, and should therefore be considered in accordance with national guidelines. In addition to the more common diseases seen among resident EU populations, specific infectious diseases should be considered for differential diagnosis depending on the symptoms presented by migrants during medical examination.

Table 2. Diseases to be considered† for differential diagnosis among migrant populations

Clinical presentation	Differential diagnosis to consider
Fever	Typhoid fever Malaria Louse-borne diseases Visceral leishmaniasis Amoebic abscess Arboviruses
Respiratory symptoms	Tuberculosis Influenza
Gastrointestinal symptoms	Cholera Typhoid fever Shigellosis Amoebic colitis Helminthiasis: ascaris, whipworm, hookworm
Sores	Scabies Cutaneous leishmaniasis Cutaneous diphtheria
Skin rash	Measles Rubella Louse-borne diseases
Meningitis or other neurological symptoms	Rabies Invasive bacterial diseases (*Neisseria meningitidis, Haemophilus influenza type b and Streptococci pneumoniae*) Polio Dengue and other arboviruses

† This list identifies diseases to be considered in addition to the more common causes of the clinical presentations among resident EU populations.

Screening for tuberculosis can be considered in accordance with national guidelines.

Screening for multidrug-resistant Gram-negative bacteria (MDR-GNB) should be considered for migrants requiring hospitalisation, in accordance with the standard national guidelines for persons at risk of carrying MDR-GNB. This is based on indications for community transmission of MDR-GNB by healthy travellers returning from Asia and Africa (9).

5. Review of vaccination status

Vaccination status for all migrants should be assessed using available documentation. Supplementary vaccination should be offered as needed according to the national immunisation guidelines of the hosting EU/EEA country. Information on country-specific immunisation programmes can be obtained through the ECDC (EU/EEA countries) or WHO (all countries) websites.

If no or uncertain documentation exists, the individual should be considered as unvaccinated. For best protection of the individual, administer and document first doses of the vaccine series listed below as early as possible following entry to or registration in a host country, preferably within 14 days, especially for the priority vaccines. The vaccine series can then be continued or supplemented with additional vaccines at the place of long-term residence in accordance with the national guidelines of the host country.

Priority should be given to protection against easily transmitted and/or serious infectious diseases such as measles, rubella, diphtheria, tetanus, pertussis, polio, Hib (<6 years unless otherwise indicated in country-specific recommendations) and hepatitis B (with or without screening, according to national guidelines). When possible, combination vaccines should be used to facilitate vaccination. If there is a vaccine shortage, prioritise children but aim for at least one dose of dT-IPV-containing vaccine in adults.

Additional vaccinations should be considered for protection against the following diseases depending on living conditions, season and epidemiological situation:

- Invasive meningococcal disease (disease common in densely-populated settings such as refugee camps or reception centres, vaccine included in many EU routine programmes);
- Varicella (disease common in crowded settings and migrants are highly susceptible – vaccine included in some EU routine programmes);
- Invasive pneumococcal disease (vaccine included in many EU routine programmes);
- Influenza (disease common in crowded settings during influenza season – vaccine included for all children in some EU routine programmes and for risk groups, including the elderly, in all EU routine programmes).

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.

* MMR vaccine is contra-indicated in immunocompromised individuals and during pregnancy. Pregnancy should be avoided for one month after MMR vaccination.

** If there is a vaccine shortage administer at least one dose of vaccine containing acellular pertussis-component.

*** Testing for hepatitis B virus infection (HBsAg) could be done before the vaccine is administered.

6. References

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