Migrant health and infectious diseases in the EU/EEA: Epidemiology and screening guidance

Teymur Noori
European Centre for Disease Prevention and Control (ECDC)
Consensus conference for establishing a European level Migration Health Database
7-8 October 2019, Pécs, Hungary

Outline

1. ECDC epidemiology of infectious diseases among migrants in the EU/EEA
   - HIV
   - TB
   - Hepatitis B and C

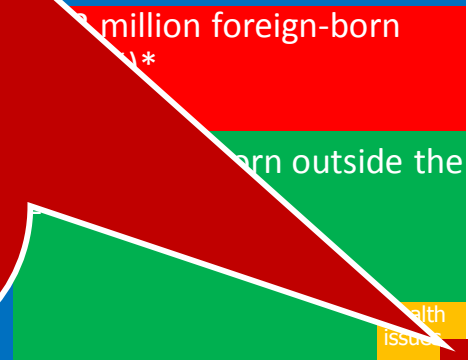
2. Evidence-based guidance on screening and vaccination of infectious diseases among newly arrived migrants in the EU/EEA

Putting migrant health and infectious diseases in context

512 million persons living in the EU-28 in 2017 (1st January)*

Migrants are disproportionally affected by some infectious diseases:

- > 40% of all HIV diagnoses in the EU in any given year
- > 30% of all TB diagnoses in the EU in any given year
- > 25% of hepatitis B and C diagnoses in the EU in any given year
- Some sub-groups of migrants have significantly lower vaccination rates compared to the general population
- Some sub-groups of migrants & asylum seekers are over represented when it comes to multidrug-resistance bacteria compared to the general population



*Eurostat: https://ec.europa.eu/eurostat/statistics-explained/pdfscache/1275.pdf

Surveillance of infectious diseases among migrants in the EU/EEA

Burden of infectious diseases among migrants
2014

Objective: To produce a comprehensive overview of the key infectious diseases affecting migrant populations in the EU/EEA

TB	**RUBELLA**
HIV	**GONORRHOEA**
HEPATITIS B	**SYPHILIS**
HEPATITIS C	**MALARIA**
MEASLES	**CHAGAS DISEASE**

Migrant related variables collected through The European Surveillance System (TESSy)

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

*Not under EU surveillance

ECDC. Assessing the burden of key infectious diseases affecting migrant populations in the EU/EEA. Stockholm: ECDC; 2014.

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ECDC. Assessing the burden of key infectious diseases affecting migrant populations in the EU/EEA. Stockholm: ECDC; 2014.

Completeness (%) of migrant related variables collected through TESSy (2011-2013)

	Chagas disease*

*Not ap

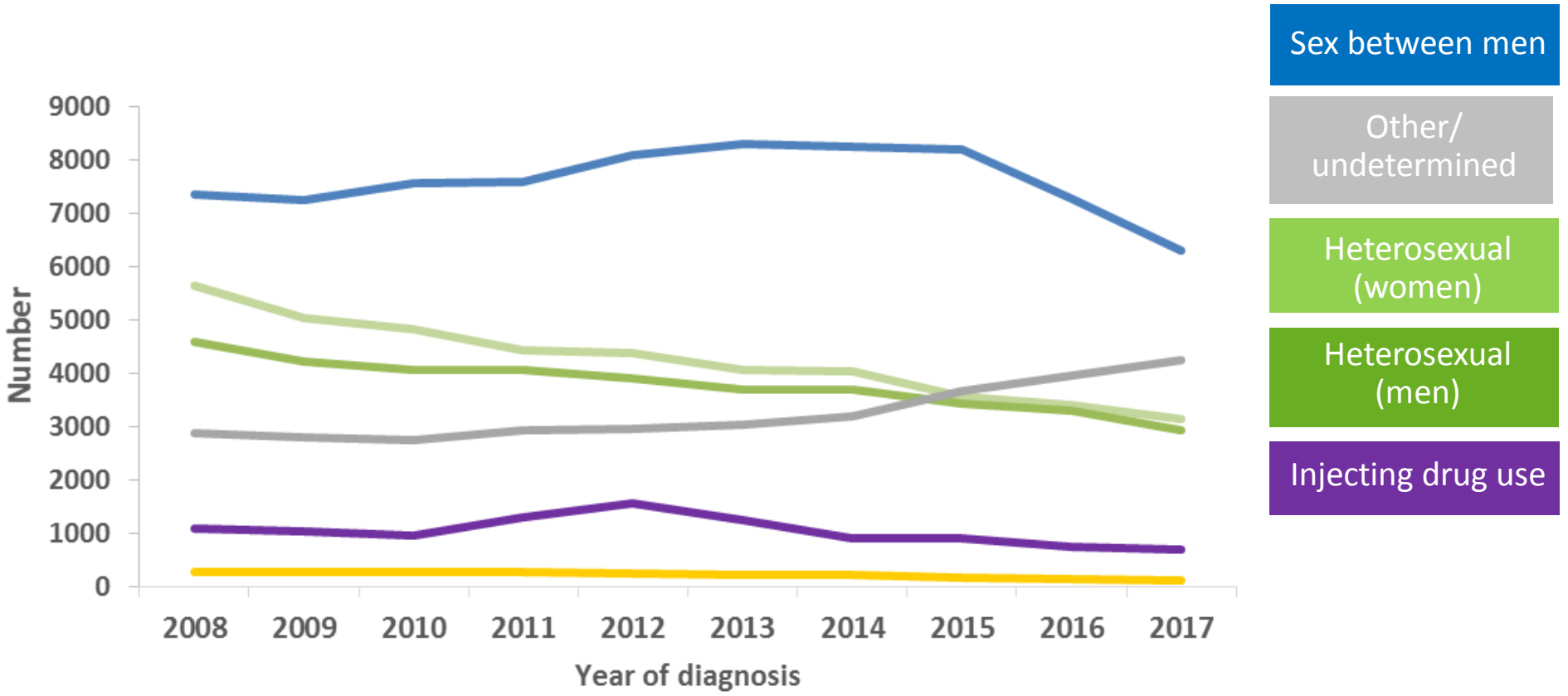
Conclusions:

- **Gaps in national data surveillance systems** make it difficult to draw overall conclusions on the health of migrants
- In ECDC's surveillance system, which includes more than 50 infectious diseases, it was concluded that **meaningful analysis** of migrant health data was **only possible for HIV and TB**
- The biggest contribution to improving our understanding of migrant health would be to work with European Member States to discuss **how we can better support them in collecting the 'country of birth' variable**

ECDC. Assessing the burden of key infectious diseases affecting migrant populations in the EU/EEA. Stockholm: ECDC; 2014.

HIV

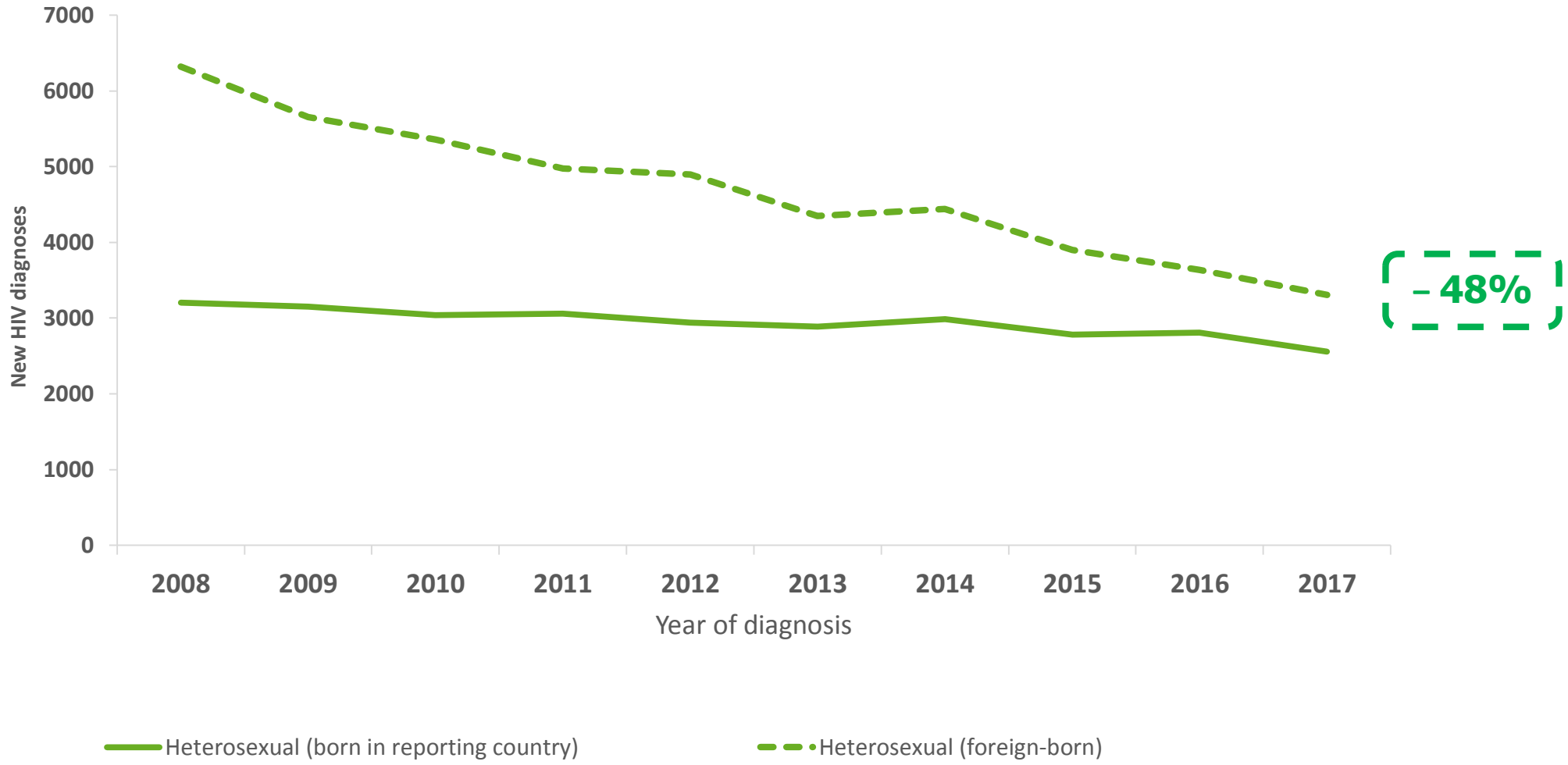
HIV diagnoses, by route of transmission, 2008-2017, EU/EEA



Data is adjusted for reporting delay. HIV diagnoses reported by Estonia and Poland excluded due to incomplete reporting on transmission mode during some years of the period; diagnoses reported by Germany, Italy and Spain excluded due to incomplete reporting during a portion of the period.

Source: ECDC/WHO (2018). HIV/AIDS Surveillance in Europe 2018– 2017 data

New HIV diagnoses, by year of diagnosis, transmission and migration status, EU/EEA, 2008-2017



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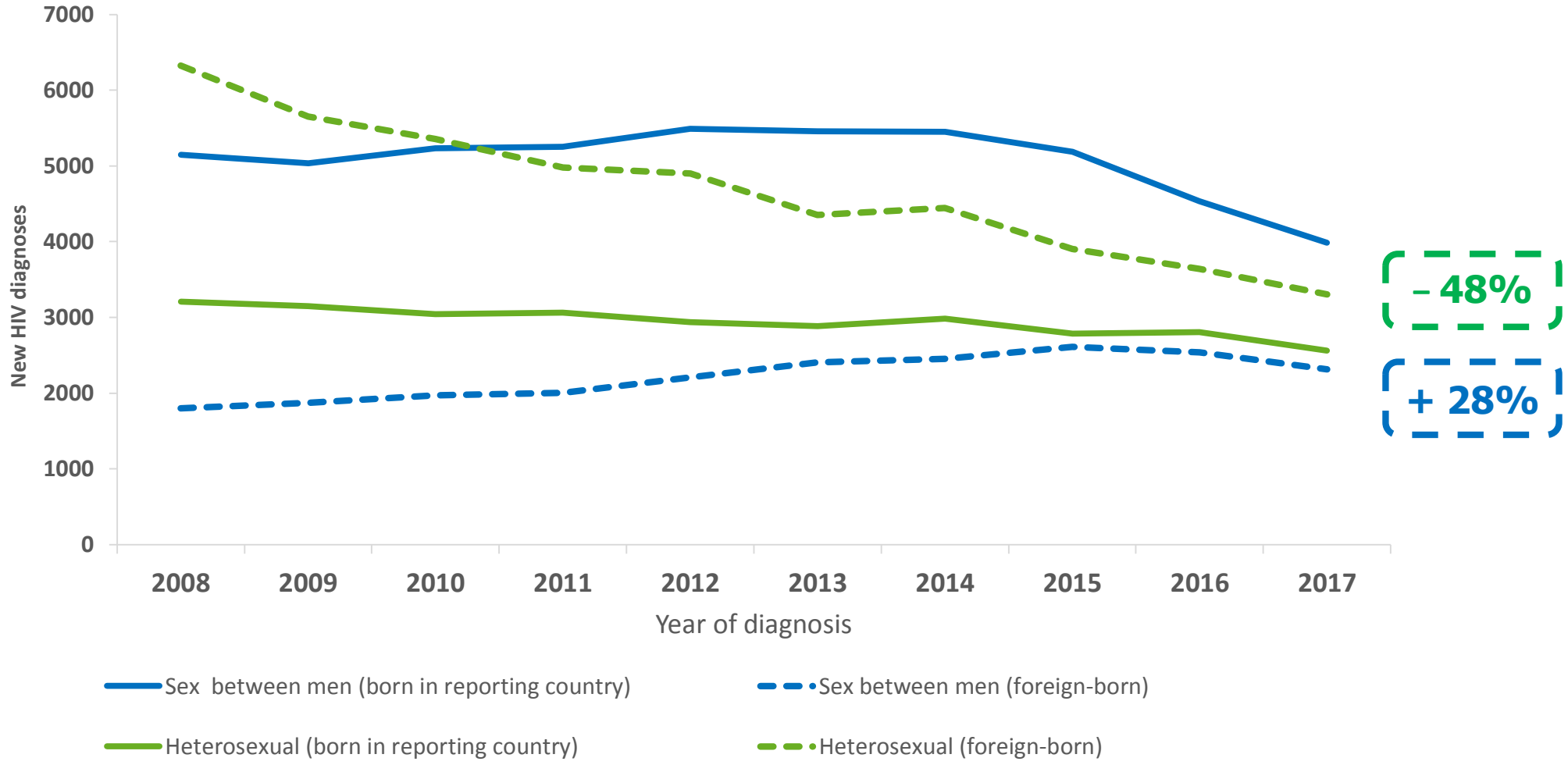

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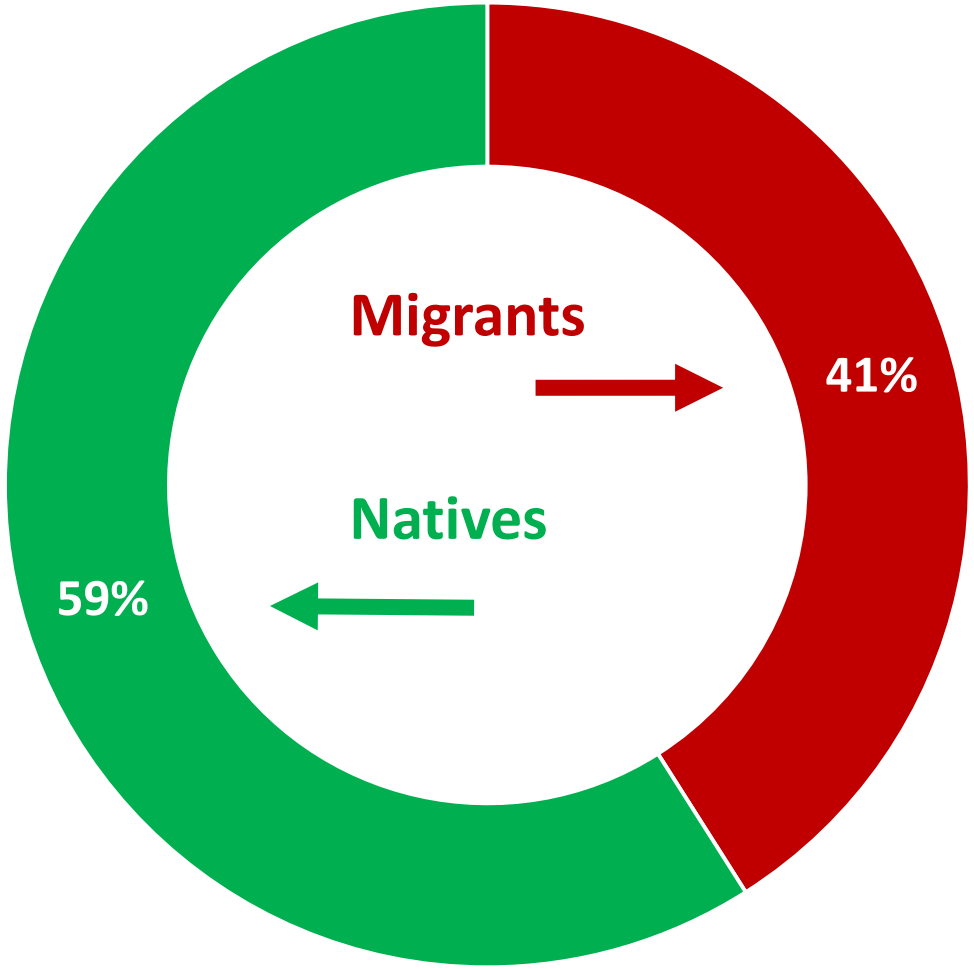
Source: ECDC/WHO (2018). HIV/AIDS Surveillance in Europe 2018– 2017 data

Proportion of HIV diagnoses among natives and migrants*

EU/EEA, 2017

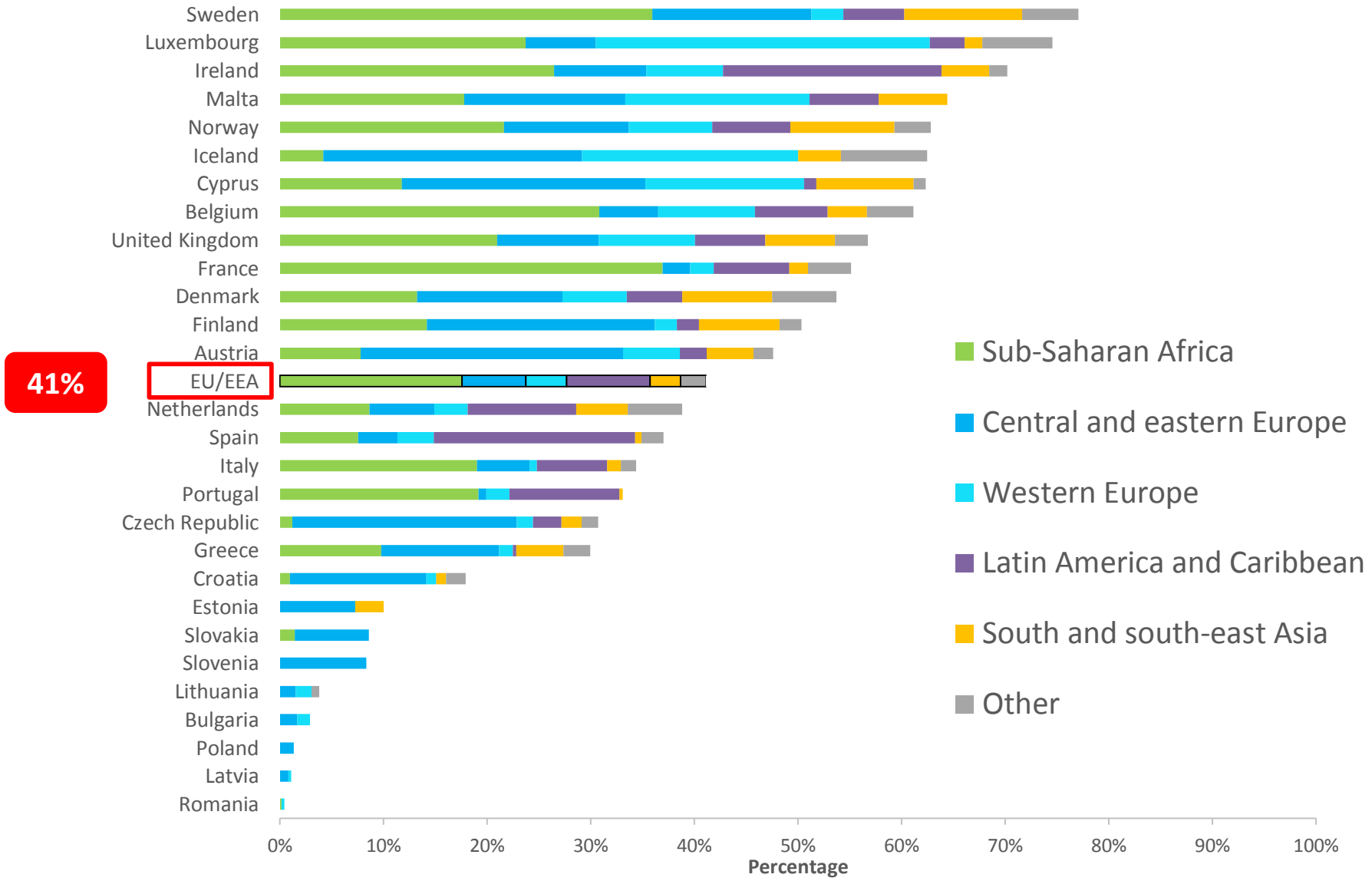


*Migrants are all persons born outside of the country in which they were diagnosed

Data include only cases with known region of origin;
No data were reported by Germany in 2017 and zero cases were reported among migrants in Hungary or Liechtenstein

Source: ECDC/WHO (2018). HIV/AIDS Surveillance in Europe 2018– 2017 data

Proportion HIV diagnoses in migrants* by origin of report, EU/EEA 2017



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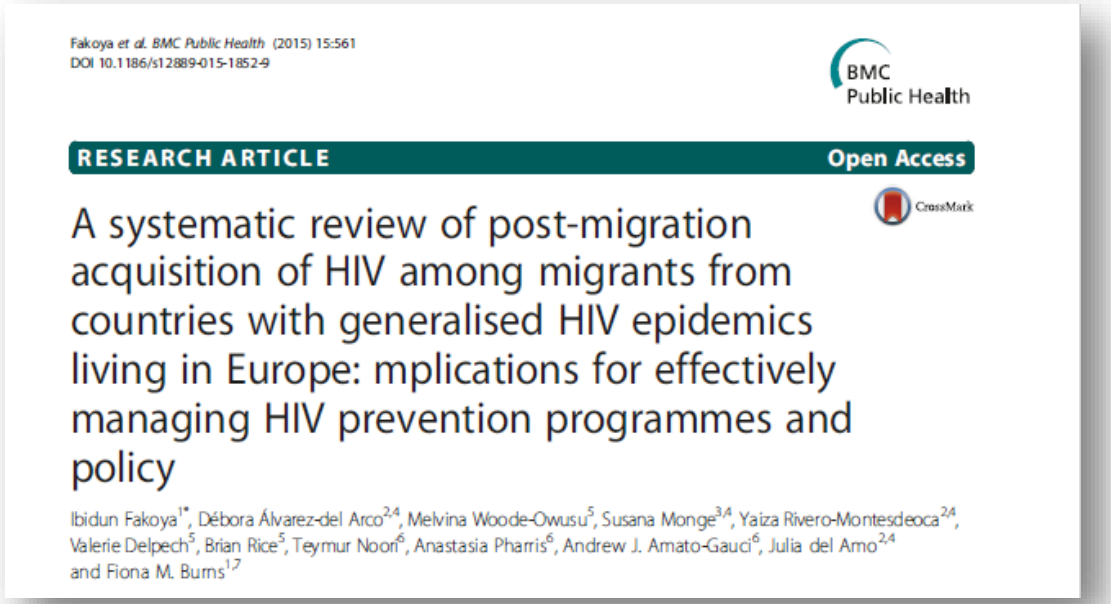
Source: ECDC/WHO (2018). HIV/AIDS Surveillance in Europe 2018– 2017 data

Where do migrants acquire HIV infection (prior to or after arrival to the EU)?



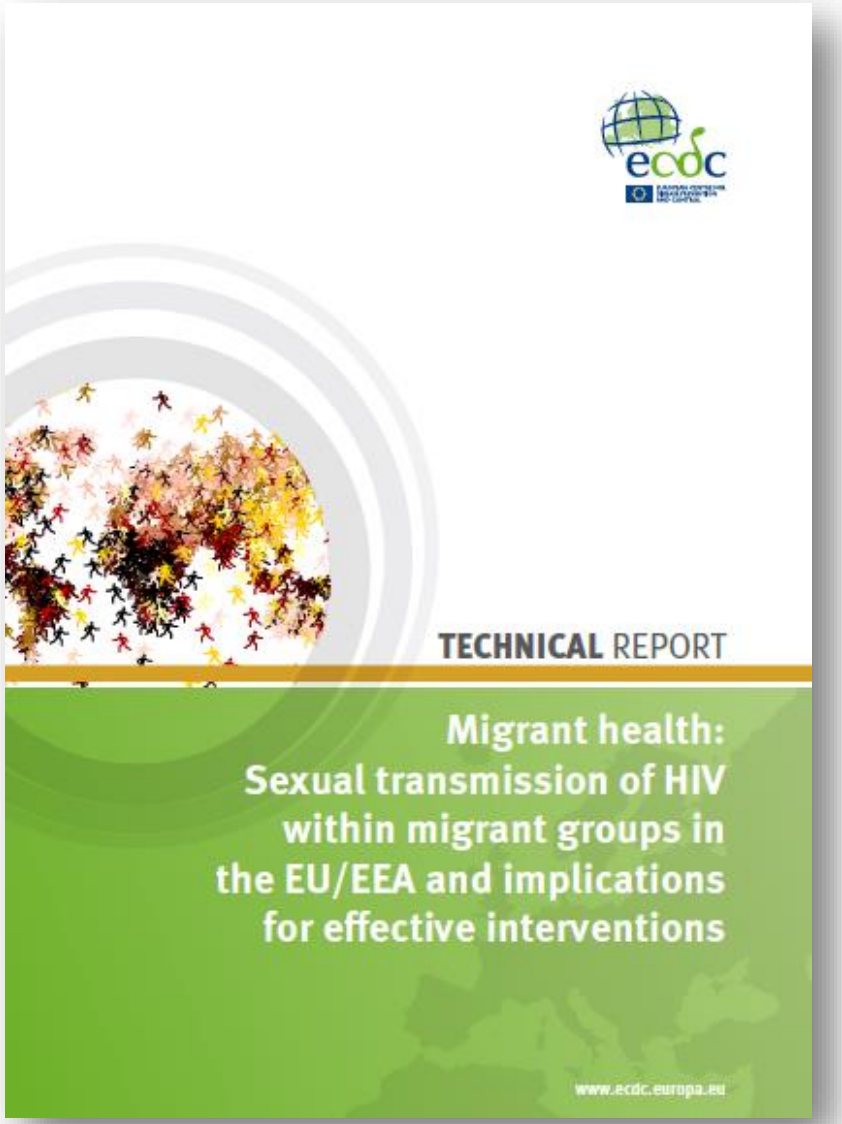
Fakoya et al. BMC Public Health (2015) 15:561
DOI 10.1186/s12889-015-1852-9

BMC Public Health

RESEARCH ARTICLE Open Access

A systematic review of post-migration acquisition of HIV among migrants from countries with generalised HIV epidemics living in Europe: mplications for effectively managing HIV prevention programmes and policy

Ibidun Fakoya[1*], Débora Álvarez-del Arco[2,4], Melvina Woode-Owusu[5], Susana Monge[3,4], Yaiza Rivero-Montesdeoca[2,4], Valerie Delpech[5], Brian Rice[5], Teymur Noori[6], Anastasia Pharris[6], Andrew J. Amato-Gauci[6], Julia del Amo[2,4] and Fiona M. Burns[1,7]



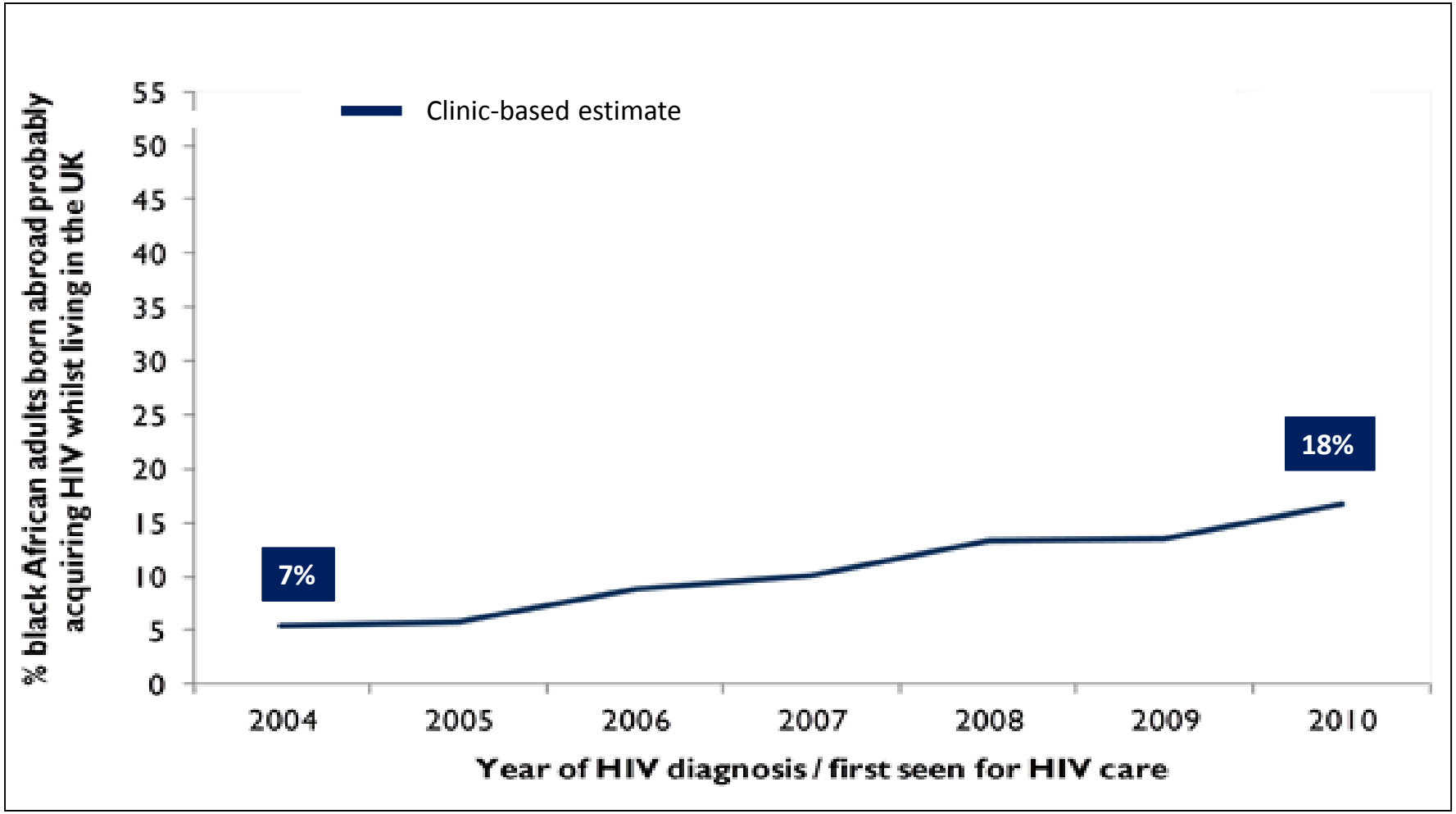
ecdc

TECHNICAL REPORT

Migrant health: Sexual transmission of HIV within migrant groups in the EU/EEA and implications for effective interventions

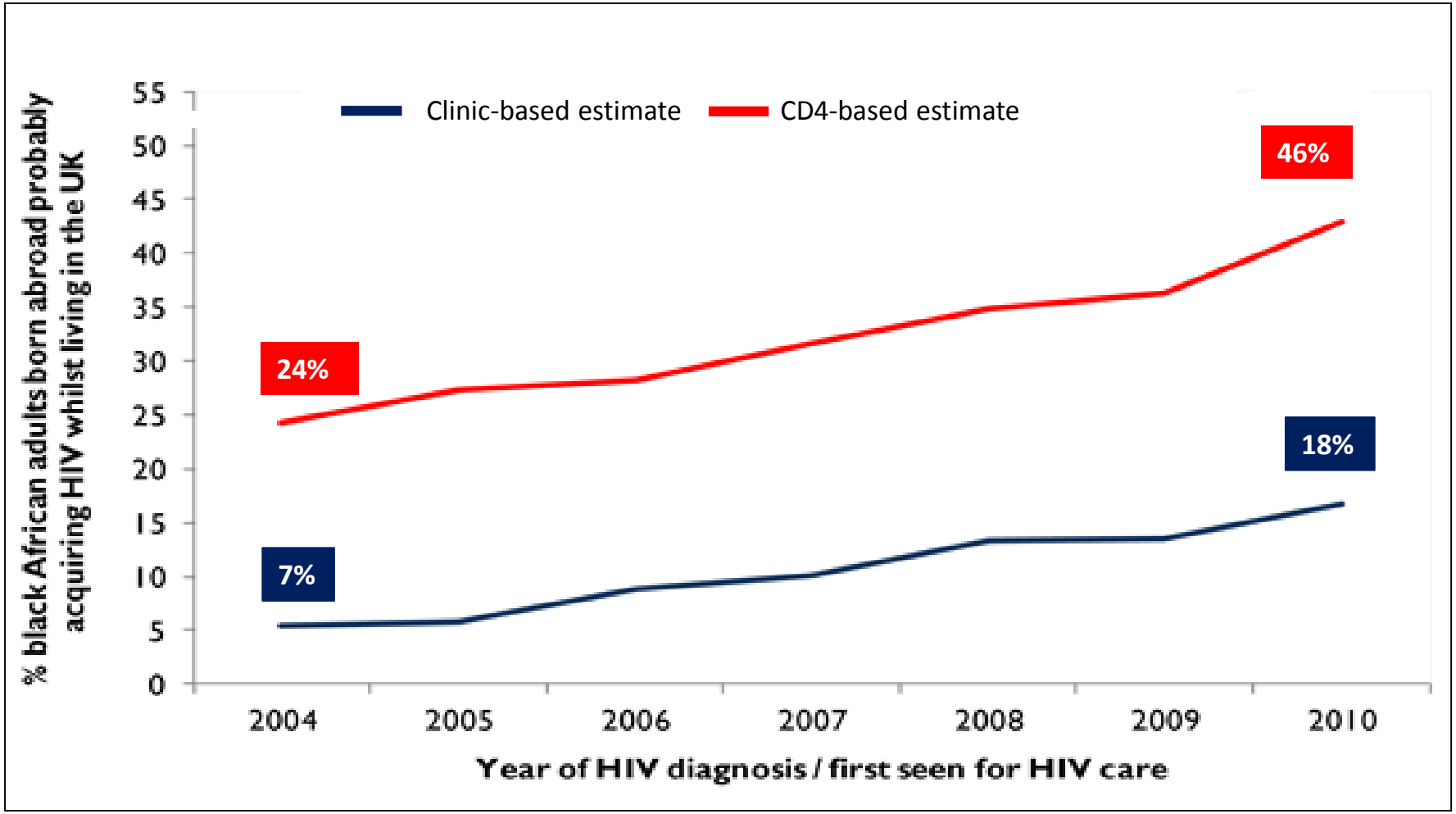
www.ecdc.europa.eu

Where do migrants get infected with HIV (prior to or after arrival to the EU)?



Source: Rice BD, Elford J, Yin Z et al (2012). A new method to assign country of HIV infection among heterosexuals born abroad and diagnosed with HIV in the UK. AIDS 26 (15): 1961-6

Where do migrants get infected with HIV (prior to or after arrival to the EU)?



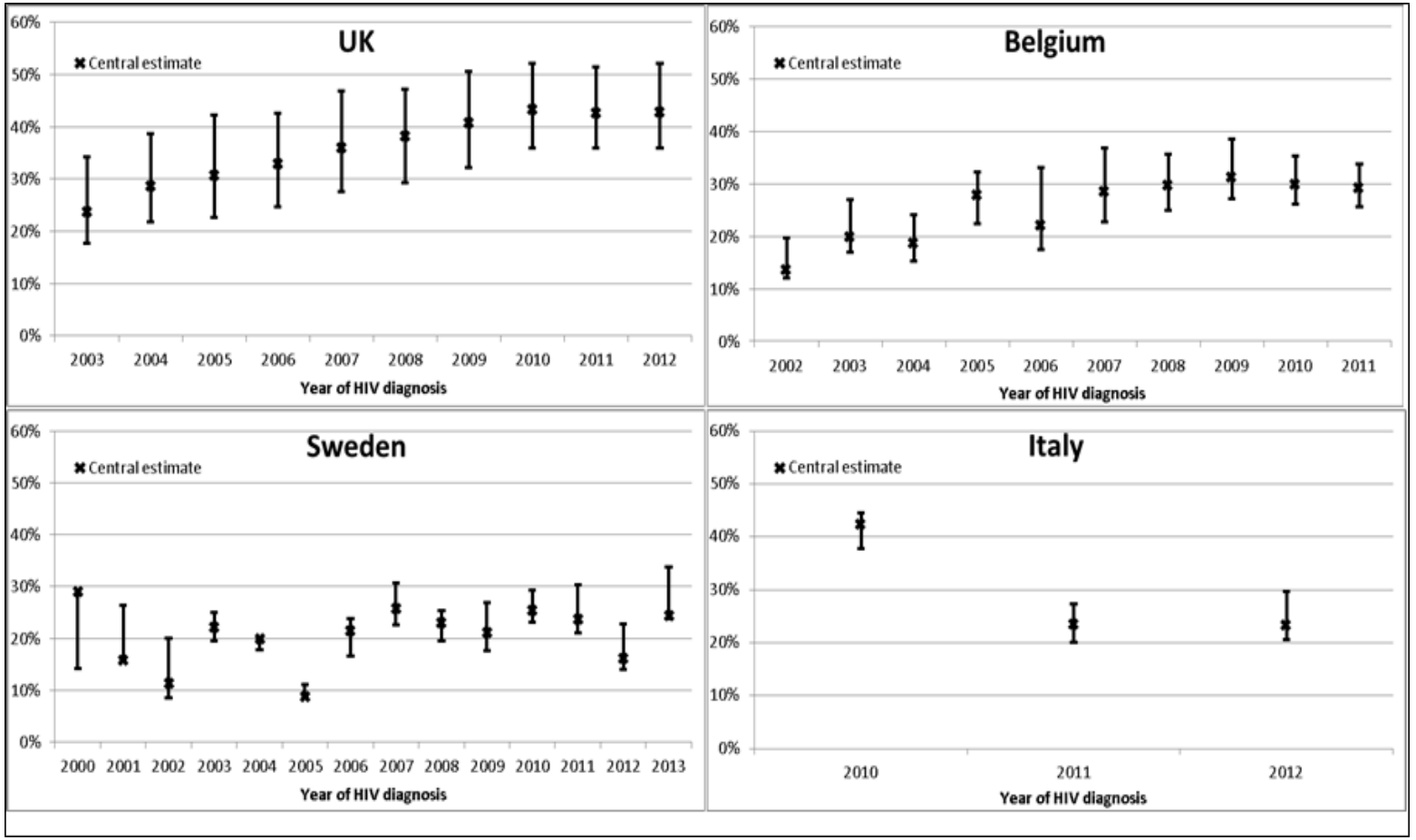
Source: Rice BD, Elford J, Yin Z et al (2012). A new method to assign country of HIV infection among heterosexuals born abroad and diagnosed with HIV in the UK. AIDS 26 (15): 1961-6

Proportion of migrants who acquired HIV post-migration in Belgium, Italy, Sweden and the United Kingdom

Multi-country estimates among **24,000** migrants diagnosed between 2000-2013

Over **1/3** of migrants diagnosed acquired HIV post-migration in 2011

MSM migrants were particularly affected with more than **40%** estimated to have acquired HIV post-migration



Source: Zheng et al. Post migration acquisition of HIV: Estimates from four European countries. 2017. Submitted to peer-reviewed journal.

High levels of postmigration HIV acquisition within nine European countries

Debora Alvarez-del Arco[a,b,c], Ibidun Fakoya[d], Christos Thomadakis[e], Nikos Pantazis[e], Giota Touloumi[e], Anne-Francoise Gennotte[f], Freke Zuure[g,h], Henrique Barros[i], Cornelia Staehelin[j], Siri Göpel[k], Christoph Boesecke[l], Tullio Prestileo[m], Alain Volny-Anne[n], Fiona Burns[d,*], Julia del Amo[a,b,c,*], on behalf of the Advancing Migrant Access to Health Services in Europe (aMASE) study team

Objective: We aimed to estimate the proportion of postmigration HIV acquisition among HIV-positive migrants in Europe.

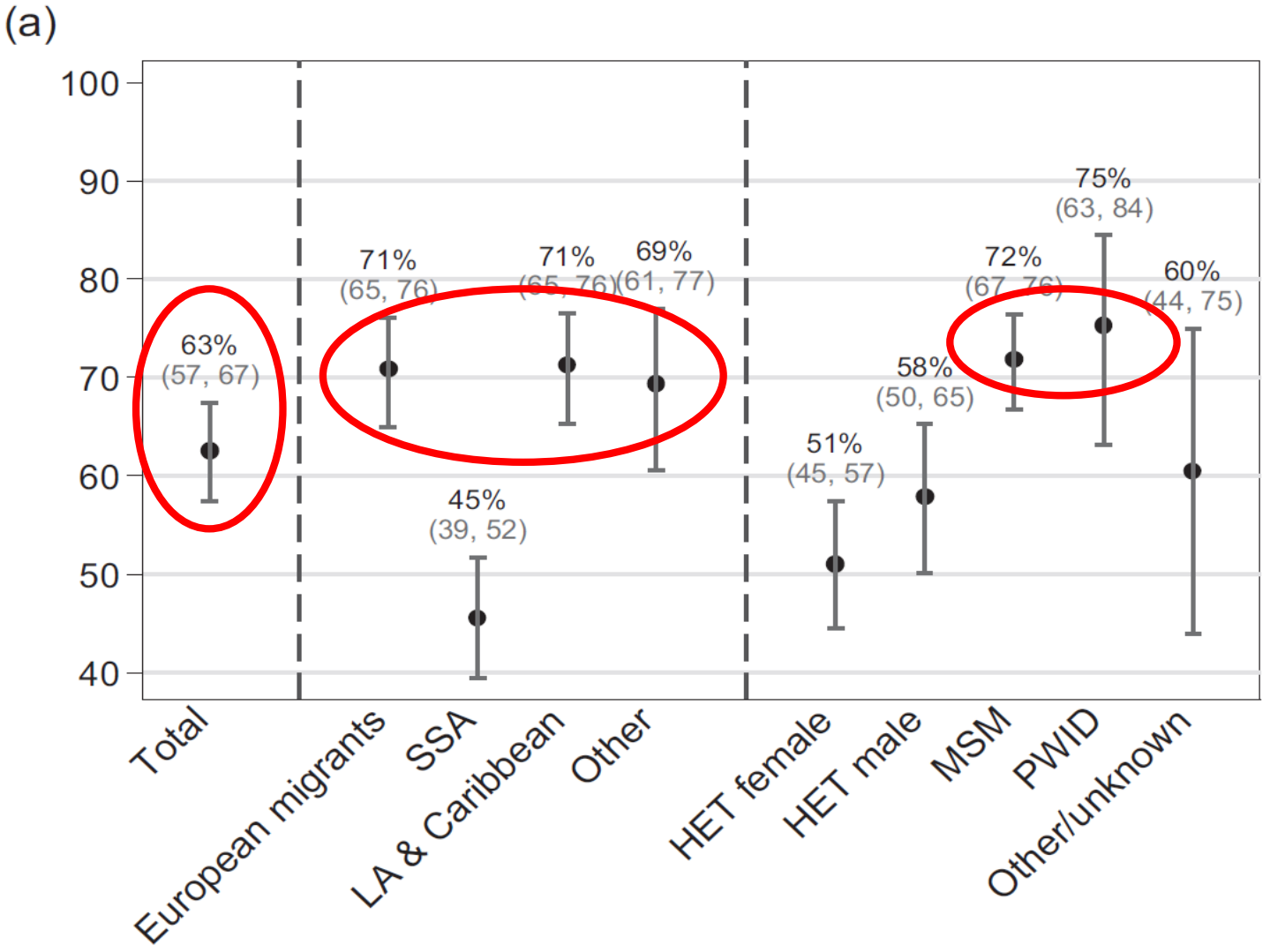
Design: To reach HIV-positive migrants, we designed a cross-sectional study performed in HIV clinics.

Methods: The study was conducted from July 2013 to July 2015 in 57 clinics (nine European countries), targeting individuals over 18 years diagnosed in the preceding 5 years and born abroad. Electronic questionnaires supplemented with clinical data were completed in any of 15 languages. Postmigration HIV acquisition was estimated through Bayesian approaches combining extensive information on migration and patients' characteristics. $CD4^+$ cell counts and HIV-RNA trajectories from seroconversion were estimated by bivariate linear mixed models fitted to natural history data. Postmigration acquisition risk factors were investigated with weighted logistic regression.

Results: Of 2009 participants, 46% were MSM and a third originated from sub-Saharan Africa and Latin America & Caribbean, respectively. Median time in host countries was 8 years. Postmigration HIV acquisition was 63% (95% confidence interval: 57–67%); 72% among MSM, 58 and 51% in heterosexual men and women, respectively. Postmigration HIV acquisition was 71% for Latin America and Caribbean migrants and 45% for people from sub-Saharan Africa. Factors associated with postmigration HIV acquisition among heterosexual women and MSM were age at migration, length of stay in host country and HIV diagnosis year and among heterosexual men, length of stay in host country and HIV diagnosis year.

Source: Alvarez del-Arco, et al. High levels of post-migration HIV acquisition within nine European countries. AIDS, 2017.

Post-migration HIV acquisition (n=2249)



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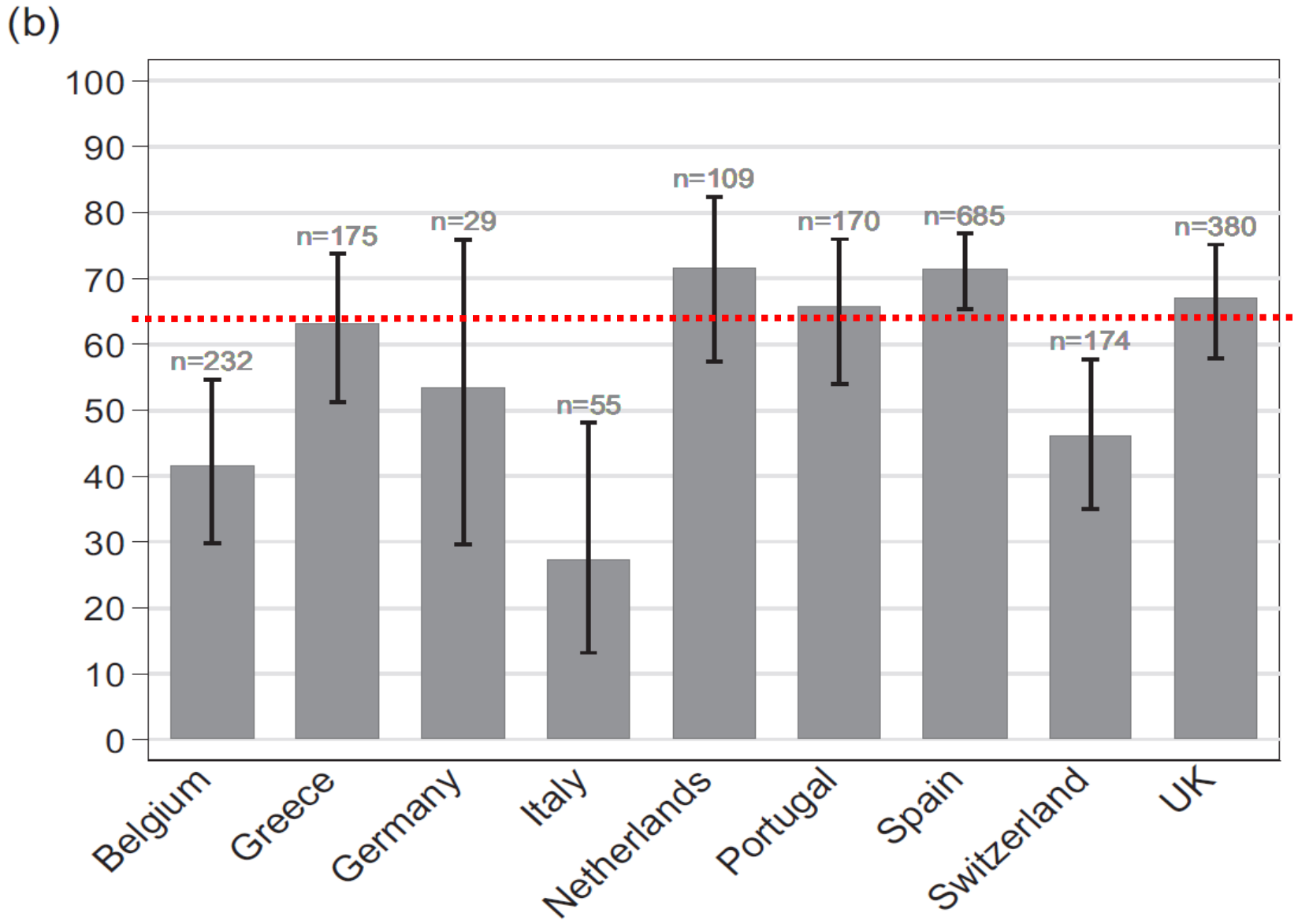


63% **estimated to have acquired HIV post-migration**

Source: Alvarez del-Arco, et al. High levels of post-migration HIV acquisition within nine European countries. AIDS, 2017.

Post-migration HIV acquisition (n=2249)

(b)

Why is this important?

- **Screening newly arrived migrants at point of entry is not enough**
- **Some sub-populations of migrants are at-risk for HIV acquisition many years after arrival to the EU**
- **Countries should develop and deliver targeted primary HIV prevention programmes to migrant populations at risk**
  - Including for those visiting friends and relatives

Source: Alvarez del-Arco, et al. High levels of post-migration HIV acquisition within nine European countries. AIDS, 2017.

Availability of ART for undocumented migrants
2018

Why is it important to provide ART to undocumented migrants:

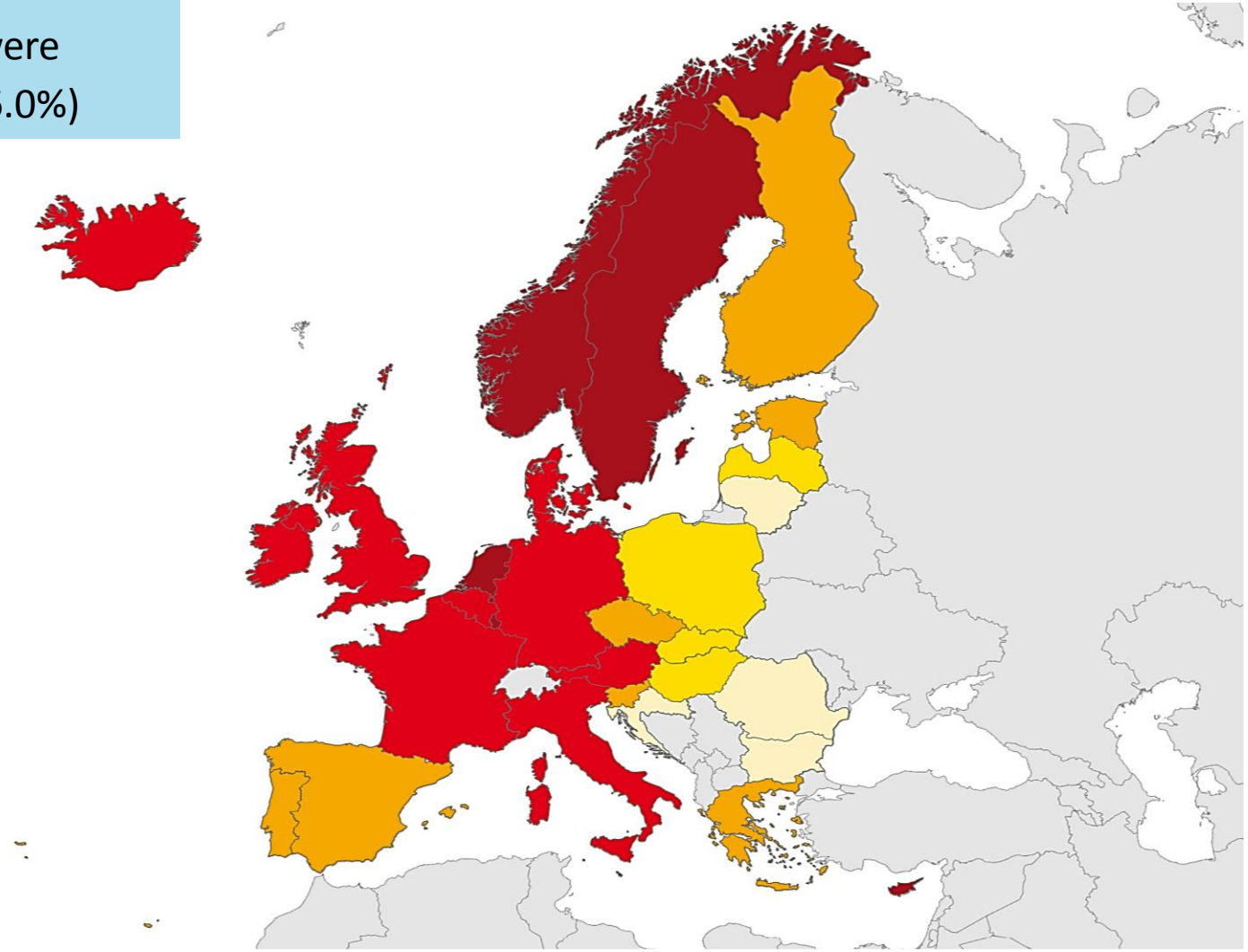
- From a clinical perspective, treatment reduces morbidity and mortality
- From a public health perspective, you are 96% less likely to transmit HIV if you are on ART and virally suppressed
- From a cost-effectiveness perspective
- From a human rights perspective, it is the right thing to do
- To meet the Sustainable Development Goals

Source: ECDC. Dublin Declaration monitoring 2018; validated unpublished data.

TB

Proportion of TB in persons of foreign origin, EU/EEA, 2016

33% (~19 000) of all TB cases were notified in migrants (range 0.2–96.0%)

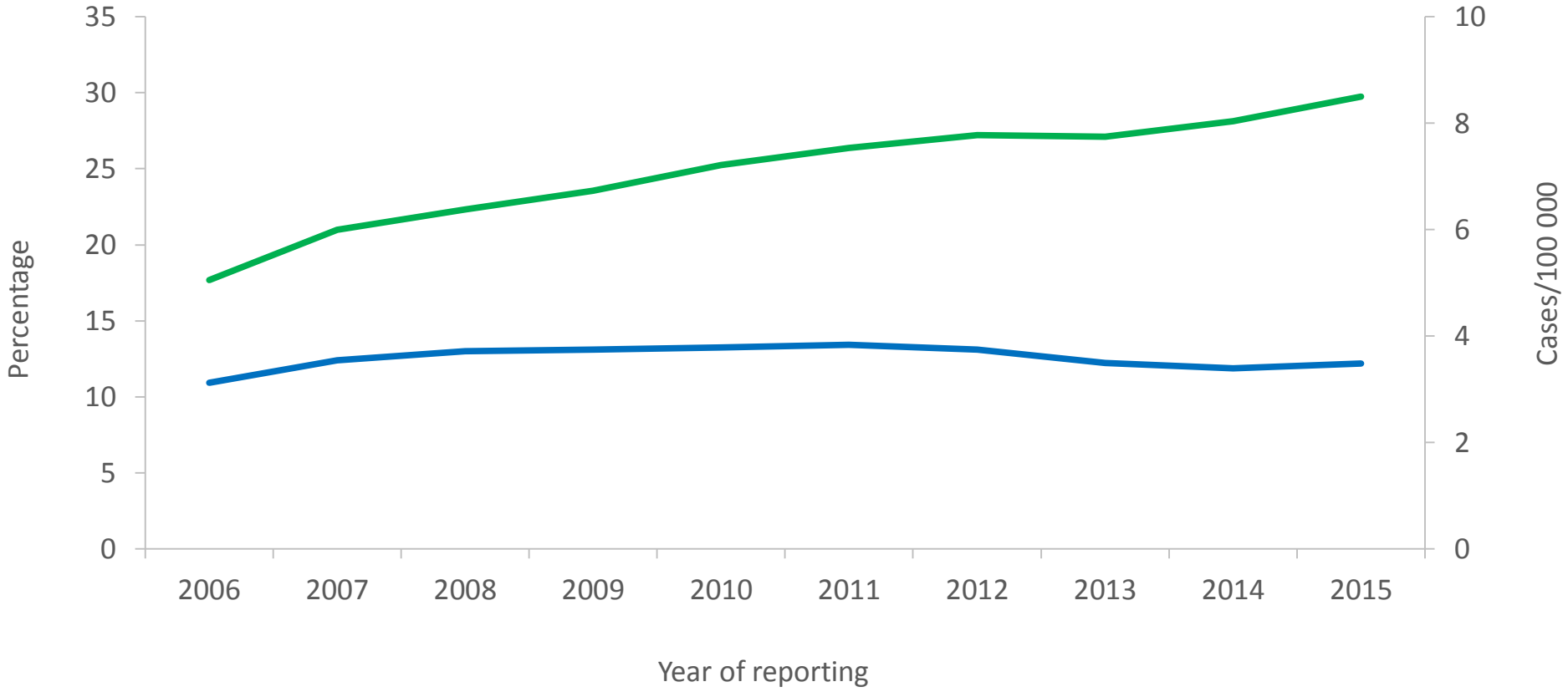


Source: ECDC/WHO (2018). Tuberculosis surveillance and monitoring in Europe 2018–2016 data

TB rates per 100 000 population

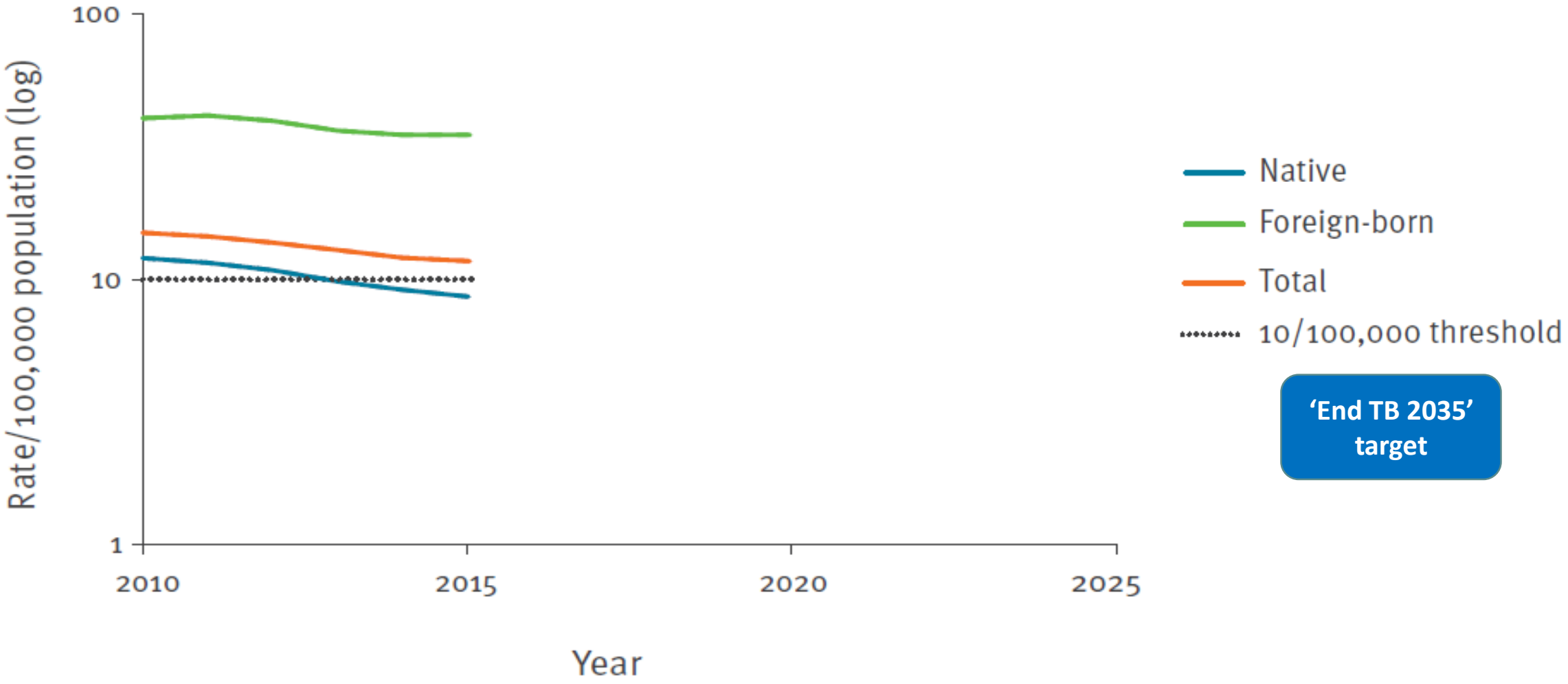
EU/EEA, 2006–2015

- Rate per 100 000 total population: stable between **3.1** and **3.5**
- Percentage of cases in migrants: increased from **18%** in 2006 to **30%** in 2015



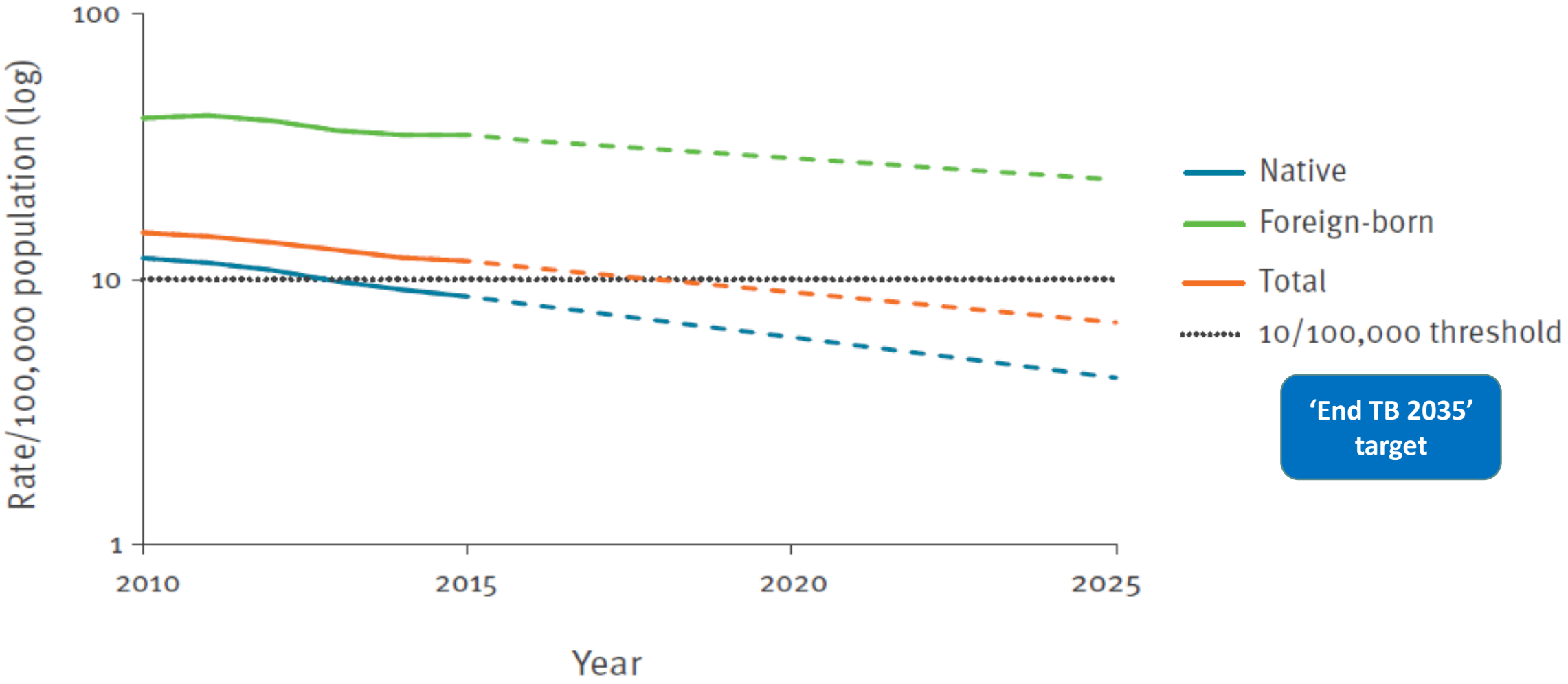
Source: ECDC/WHO Regional Office for Europe. TB surveillance and monitoring in Europe, 2017

TB notification rates by origin and year, EU/EEA, 2010-2015



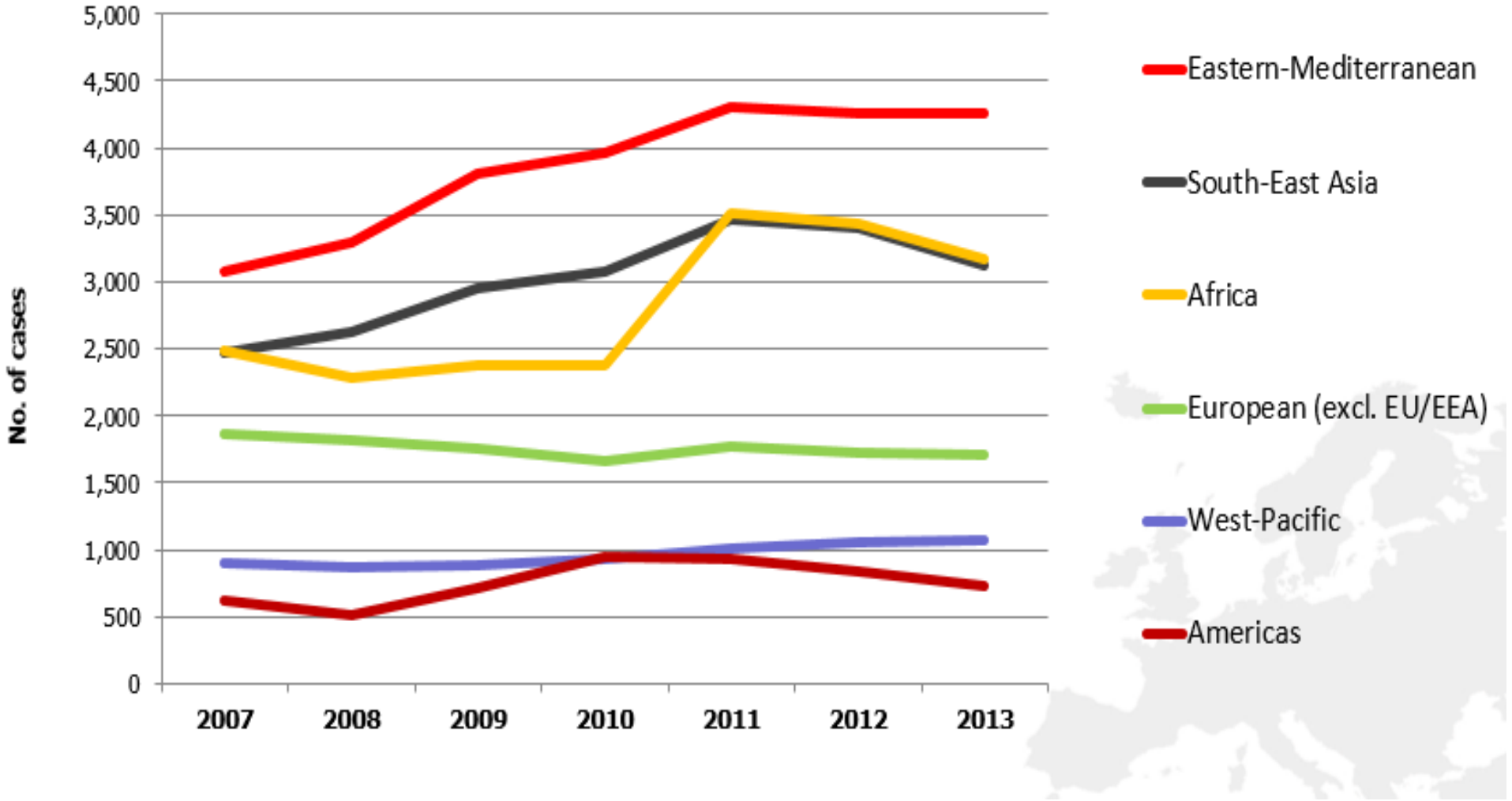
Hollo et al. Eurosurveillance 2017

TB notification rates by origin and year, EU/EEA, 2010-2015



Hollo et al. Eurosurveillance 2017

Region of origin of TB cases among those born outside the EU/EEA, 2007-2013



Kodmon C, Zucs P, van der Werf MJ. Migration-related tuberculosis: epidemiology and characteristics of tuberculosis cases originating outside the European Union and European Economic Area, 2007 to 2013. Euro Surveill. 2016;21(12):pii=30164. DOI: http://dx.doi.org/10.2807/1560-7917.ES.2016.21.12.30164

Hepatitis B and C

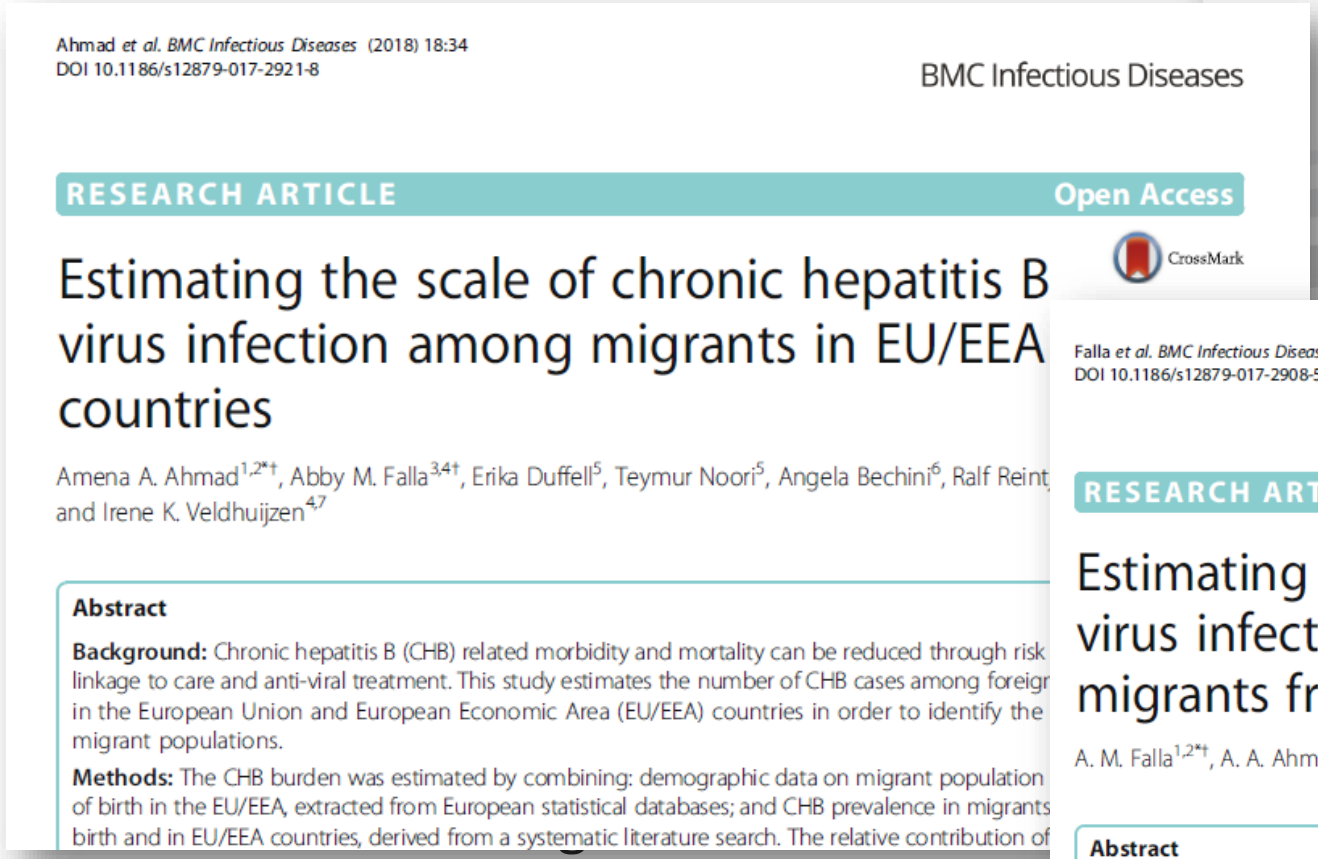
Completeness (%) of migrant related variables collected through TESSy (2011-2013)

Variable	HIV	TB	HBV	HCV	Gonorrhoea	Syphilis	Measles	Rubella	Malaria	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

ECDC. Assessing the burden of key infectious diseases affecting migrant populations in the EU/EEA. Stockholm: ECDC; 2014.

Hepatitis B and C among migrant populations in the EU/EEA



Ahmad *et al. BMC Infectious Diseases* (2018) 18:34
DOI 10.1186/s12879-017-2921-8

BMC Infectious Diseases

RESEARCH ARTICLE Open Access

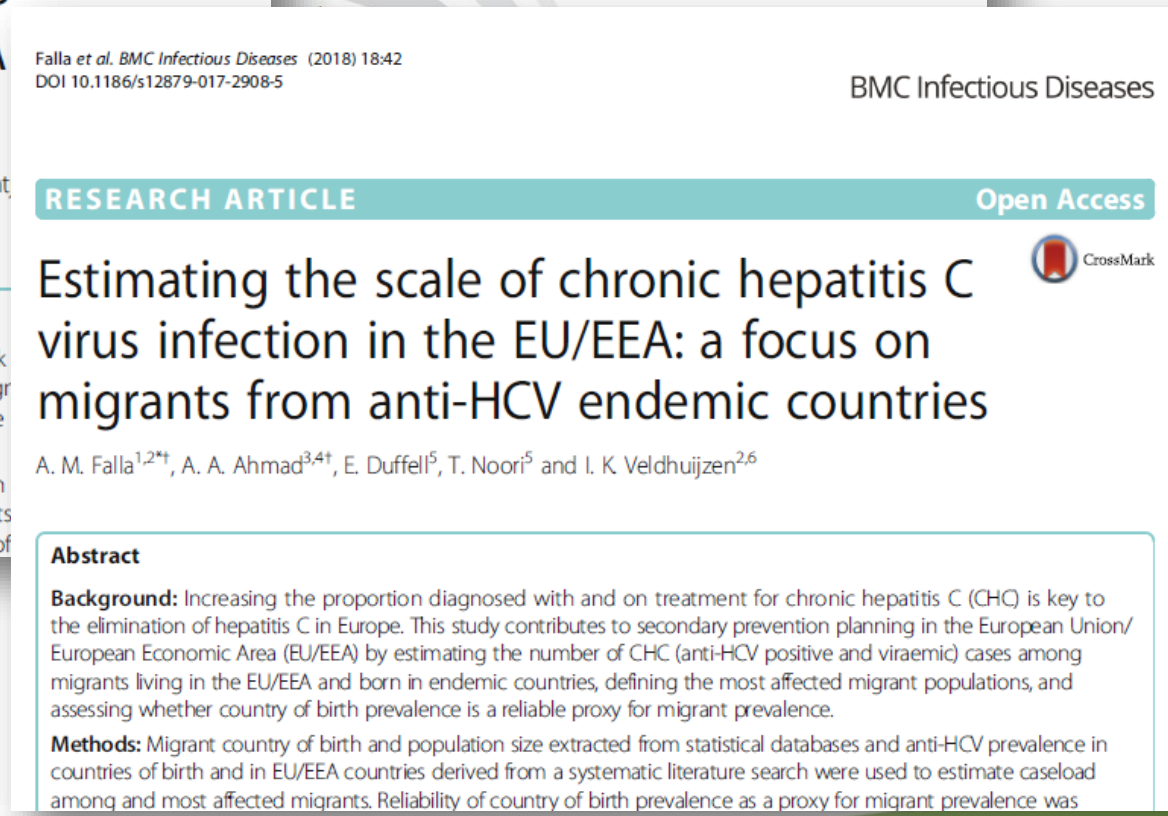
Estimating the scale of chronic hepatitis B virus infection among migrants in EU/EEA countries

Amena A. Ahmad[1,2*†], Abby M. Falla[3,4†], Erika Duffell[5], Teymur Noori[5], Angela Bechini[6], Ralf Reint and Irene K. Veldhuijzen[4,7]

Abstract

Background: Chronic hepatitis B (CHB) related morbidity and mortality can be reduced through risk linkage to care and anti-viral treatment. This study estimates the number of CHB cases among foreign in the European Union and European Economic Area (EU/EEA) countries in order to identify the migrant populations.

Methods: The CHB burden was estimated by combining: demographic data on migrant population of birth in the EU/EEA, extracted from European statistical databases; and CHB prevalence in migrants birth and in EU/EEA countries, derived from a systematic literature search. The relative contribution of



Falla *et al. BMC Infectious Diseases* (2018) 18:42
DOI 10.1186/s12879-017-2908-5

BMC Infectious Diseases

RESEARCH ARTICLE Open Access

Estimating the scale of chronic hepatitis C virus infection in the EU/EEA: a focus on migrants from anti-HCV endemic countries

A. M. Falla[1,2*†], A. A. Ahmad[3,4†], E. Duffell[5], T. Noori[5] and I. K. Veldhuijzen[2,6]

Abstract

Background: Increasing the proportion diagnosed with and on treatment for chronic hepatitis C (CHC) is key to the elimination of hepatitis C in Europe. This study contributes to secondary prevention planning in the European Union/European Economic Area (EU/EEA) by estimating the number of CHC (anti-HCV positive and viraemic) cases among migrants living in the EU/EEA and born in endemic countries, defining the most affected migrant populations, and assessing whether country of birth prevalence is a reliable proxy for migrant prevalence.

Methods: Migrant country of birth and population size extracted from statistical databases and anti-HCV prevalence in countries of birth and in EU/EEA countries derived from a systematic literature search were used to estimate caseload among and most affected migrants. Reliability of country of birth prevalence as a proxy for migrant prevalence was

Foreign-born population (%) and proportion from HBV-endemic countries

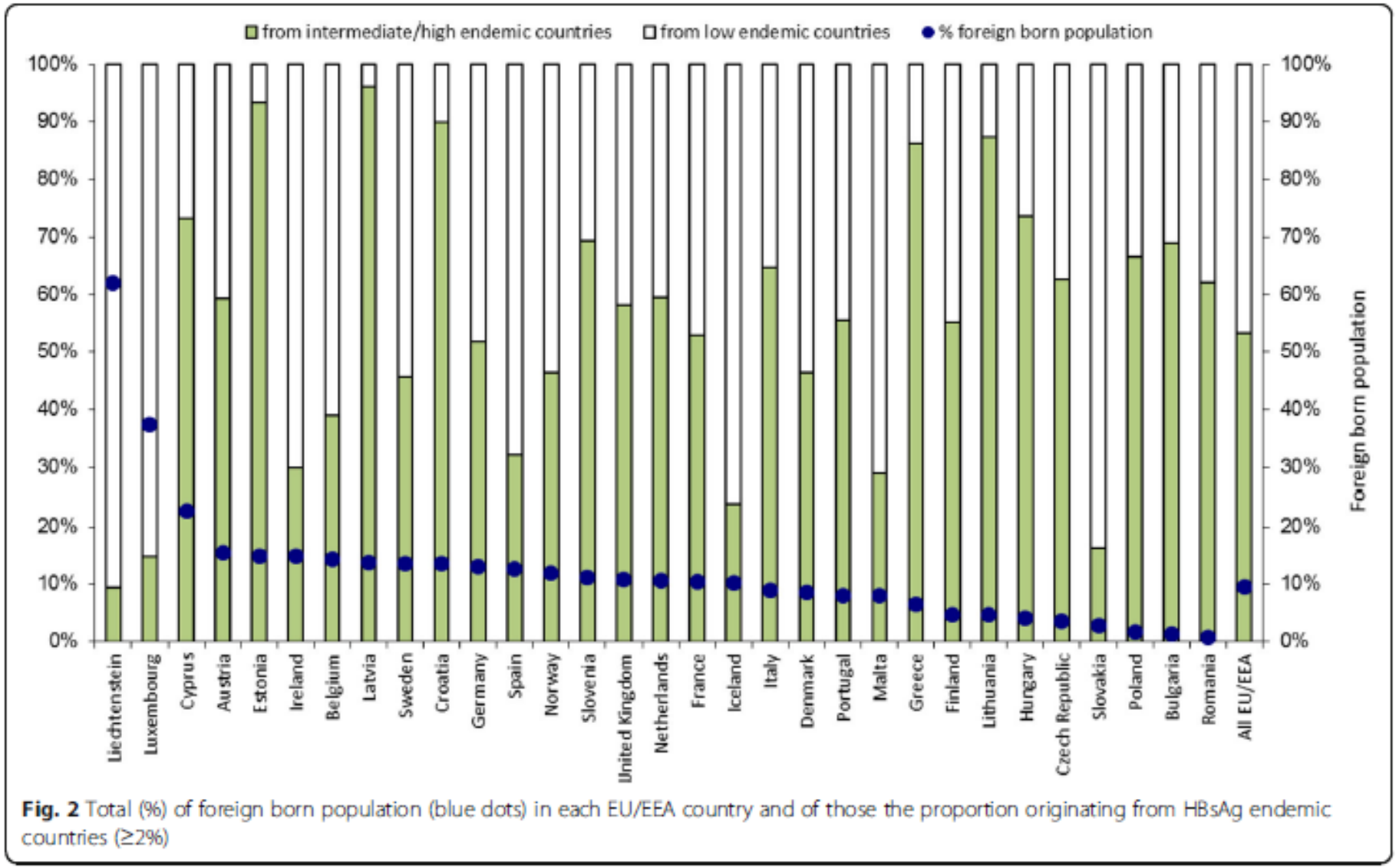


Fig. 2 Total (%) of foreign born population (blue dots) in each EU/EEA country and of those the proportion originating from HBsAg endemic countries (≥2%)

Source: ECDC. Epidemiological assessment of hepatitis B and C among migrants in the EU/EEA. Stockholm: ECDC; 2016.

CHB burden in migrants: the 10 migrant groups from intermediate/high endemic countries with the highest number of CHB cases in EU/EEA countries

		Population	CHB prevalence % with 95% CI			Estimated number of chronic hepatitis B cases		
			%	Lower	Upper	CHB cases	Lower range	Upper range
Host Country	**Sweden**	**9,555,893**	**0.2**	**0.1**	**0.4**	**19,112**	**9,556**	**38,224**
Country of origin of first generation migrants	Somalia	43,966	12.4	8.89	15.92	5,452	3,909	6,999
	China	27,422	10.23	9.35	11.11	2,805	2,564	3,047
	Former Yugoslavia (bf. 92)	69,269	3.98	1.32	6.64	2,757	914	4,599
	Afghanistan	21,484	10.46	5.85	15.07	2,247	1,257	3,238
	Eritrea	13,735	15.52	2.02	29.02	2,132	277	3,986
	Bosnia and Herzegovina	56,595	3.63	2.26	5	2,054	1,279	2,830
	Iran	65,649	3.1	2.69	3.5	2,035	1,766	2,298
	Thailand	35,554	5.54	4.64	6.43	1,970	1,650	2,286
	Vietnam	15,677	12.48	11.46	13.5	1,956	1,797	2,116
	Turkey	45,085	4.29	3.7	4.88	1,934	1,668	2,200
Host Country	**United Kingdom**	**63,182,180**	**0.54**	**0.3**	**0.6**	**341,184**	**189,547**	**379,093**
Country of origin of first generation migrants	China	284,070	10.23	9.35	11.11	29,060	26,561	31,560
	Nigeria	201,185	13.31	11.57	15.06	26,778	23,277	30,298
	India	722,435	3.23	2.92	3.55	23,335	21,095	25,646
	Pakistan	502,795	4.17	3.59	4.75	20,967	18,050	23,883
	Zimbabwe	123,670	13.91	10.7	17.11	17,202	13,233	21,160
	Ghana	95,665	13.44	10.5	16.38	12,857	10,045	15,670
	Somalia	103,050	12.4	8.89	15.92	12,778	9,161	16,406
	South Africa	203,475	6.2	4.68	7.71	12,615	9,523	15,688
	Bangladesh	214,090	4.83	4.02	5.64	10,341	8,606	12,075
	Philippines	129,835	7.36	6.32	8.39	9,556	8,206	10,893

Source: ECDC. Epidemiological assessment of hepatitis B and C among migrants in the EU/EEA. Stockholm: ECDC; 2016.

Vaccinations

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

Suggested citation: European Centre for Disease Prevention and Control. Infectious diseases of specific relevance to newly-arrived migrants in the EU/EEA – 19 November 2015. ECDC: Stockholm; 2015.

ECDC. Infectious diseases of specific relevance to newly-arrived migrants in the EU/EEA – 19 November 2015. ECDC: Stockholm; 2015.

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

- Vaccination should be offered as needed according to the national immunisation guidelines
- Priority should be given to easily transmitted and/or serious infectious diseases
- Additional vaccinations should be considered depending on:
  - living conditions
  - season
  - epidemiological situation

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. Infectious diseases of specific relevance to newly-arrived migrants in the EU/EEA – 19 November 2015. ECDC: Stockholm; 2015.

Immunisation of migrants: policies and practices in the EU/EEA

Contents lists available at ScienceDirect

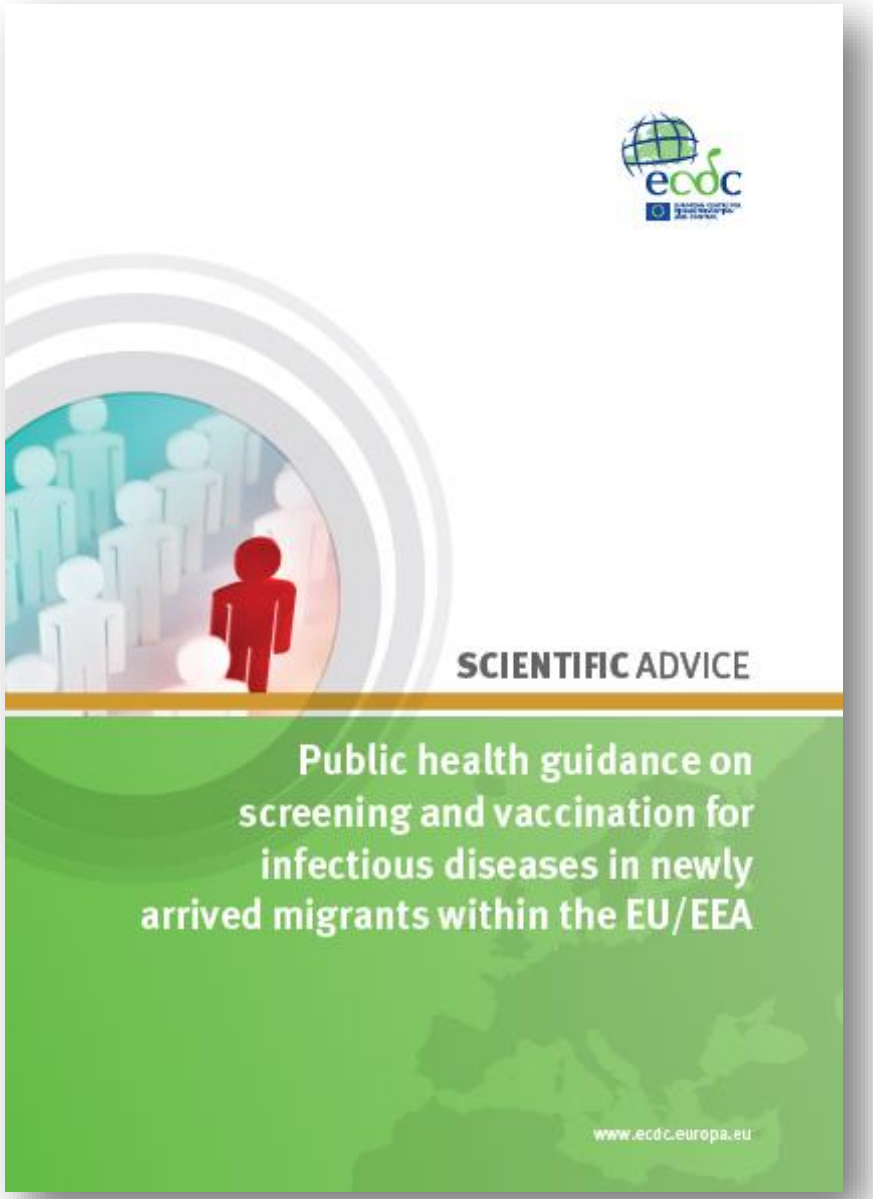
Vaccine

Table 7
Information on vaccines delivered to migrants: data sharing with other centres/institutions (N = 28).

	Countries	n	%
Are individual/aggregated data made available and transmitted from the sites where vaccinations are delivered to other centres or institutions?			
Individual data			
No	AT, EE, EL, FR, HU, LT, LU, LV, MT, PL, PT, SE, SI	13	46.4
To centres where migrants are relocated or moved	BE, CY, DK, FI, IE, NO, SK	7	25.0
To the Ministry of Health	–	–	
To the National Public Health Institute	HR, NL, UK*	3	10.7
To the Regional Health Authorities	ES	1	3.6
To the Local Health Authorities	FI, IT, UK*	3	10.7
To the national/regional Epidemiology Centres	HR, IS	2	7.1
To international institution (ECDC, IOM, WHO, UNHCR)	UK (IOM)*	1	3.6
Information not available at the national level	BG, IT	2	7.1
Other	BE^, DE^^, DK^^,	3	10.7
Aggregated data			
No	AT, DE, DK, FR, IE, IS, LU, LV, MT, NO, PT, SE, SI, SK, UK	15	53.6
To the Ministry of Health	BG, CY, EL, ES	4	14.3
To the National Public Health Institute	BE, EE, FI, HR, NL	5	17.9
To the Regional Health Authorities	BE, BG, DE, EE, LT	5	17.9
To the Local Health Authorities	EE, HU, IT	3	10.7
To the national/regional Epidemiology Centres	PL	1	3.6
To the national/regional Migrant Health Centres	FI	1	3.6
To international institution (ECDC, IOM, WHO, UNHCR)	–		

edly not shared with other centres/institutions in 13 and 15 countries, respectively. Twenty countries

Evidence-based guidance on screening and vaccination of infectious diseases among newly arrived migrants in the EU/EEA



GR 2014 eu

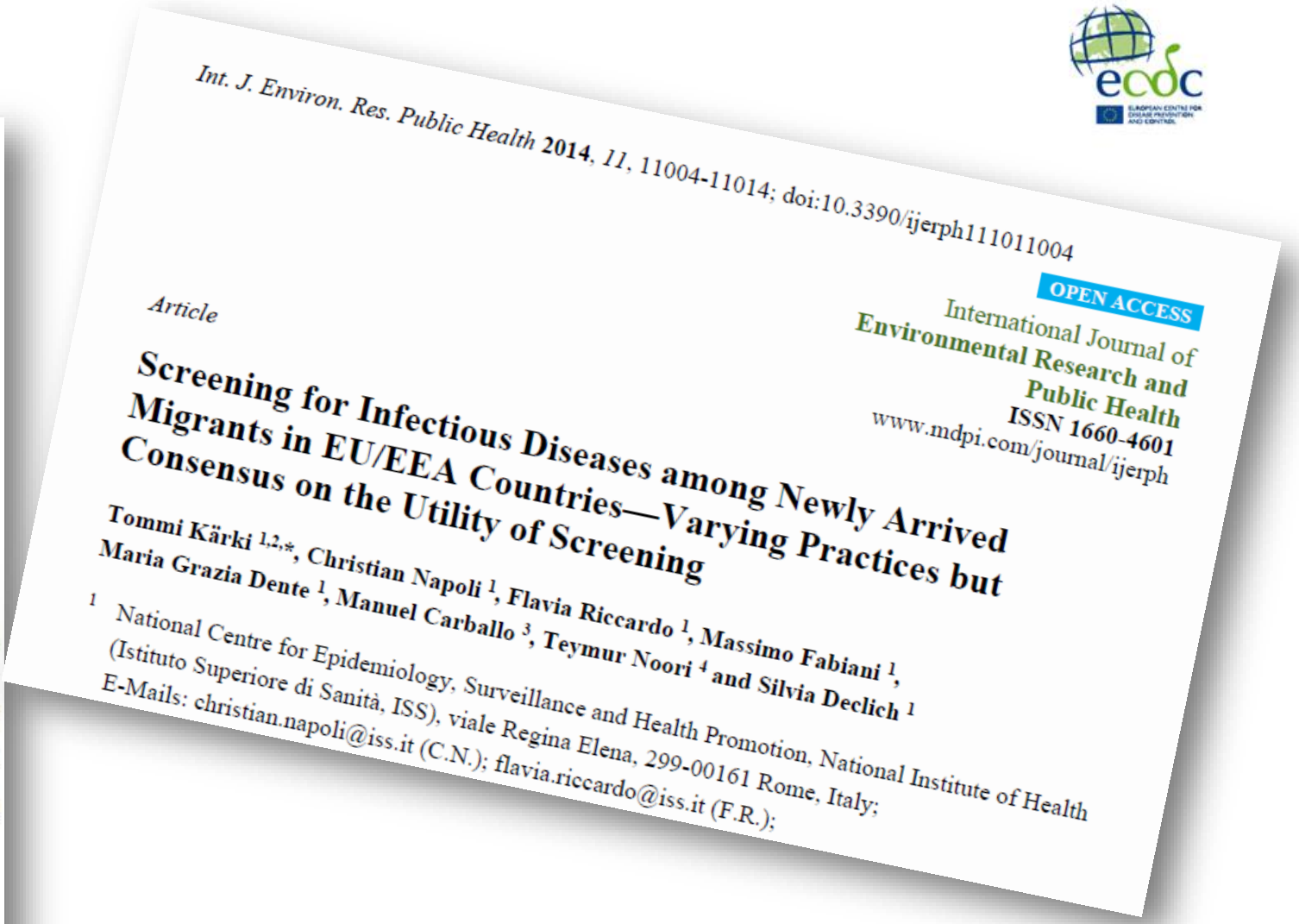
HCDCP
HELLENIC CENTER FOR DISEASE CONTROL & PREVENTION
MINISTRY OF HEALTH

ecdc
EUROPEAN CENTRE FOR DISEASE PREVENTION AND CONTROL

MEETING REPORT

PUBLIC HEALTH BENEFITS OF SCREENING FOR INFECTIOUS DISEASES AMONG NEWLY ARRIVED MIGRANTS TO THE EU/EEA

19-20TH MARCH 2014



Int. J. Environ. Res. Public Health 2014, 11, 11004-11014; doi:10.3390/ijerph111011004

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ISSN 1660-4601
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Article

Screening for Infectious Diseases among Newly Arrived Migrants in EU/EEA Countries—Varying Practices but Consensus on the Utility of Screening

Tommi Kärki [1,2,*], Christian Napoli [1], Flavia Riccardo [1], Massimo Fabiani [1], Maria Grazia Dente [1], Manuel Carballo [3], Teymur Noori [4] and Silvia Declich [1]

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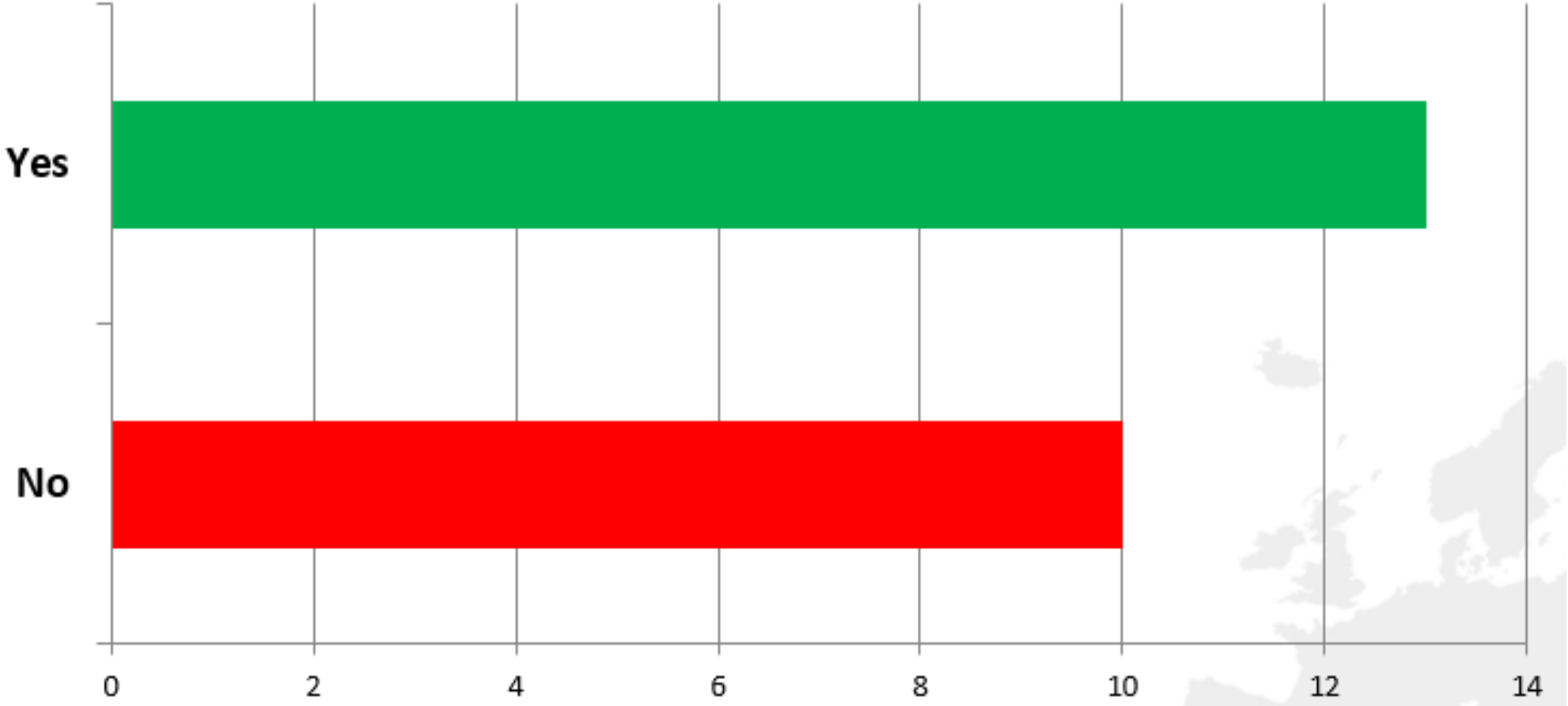
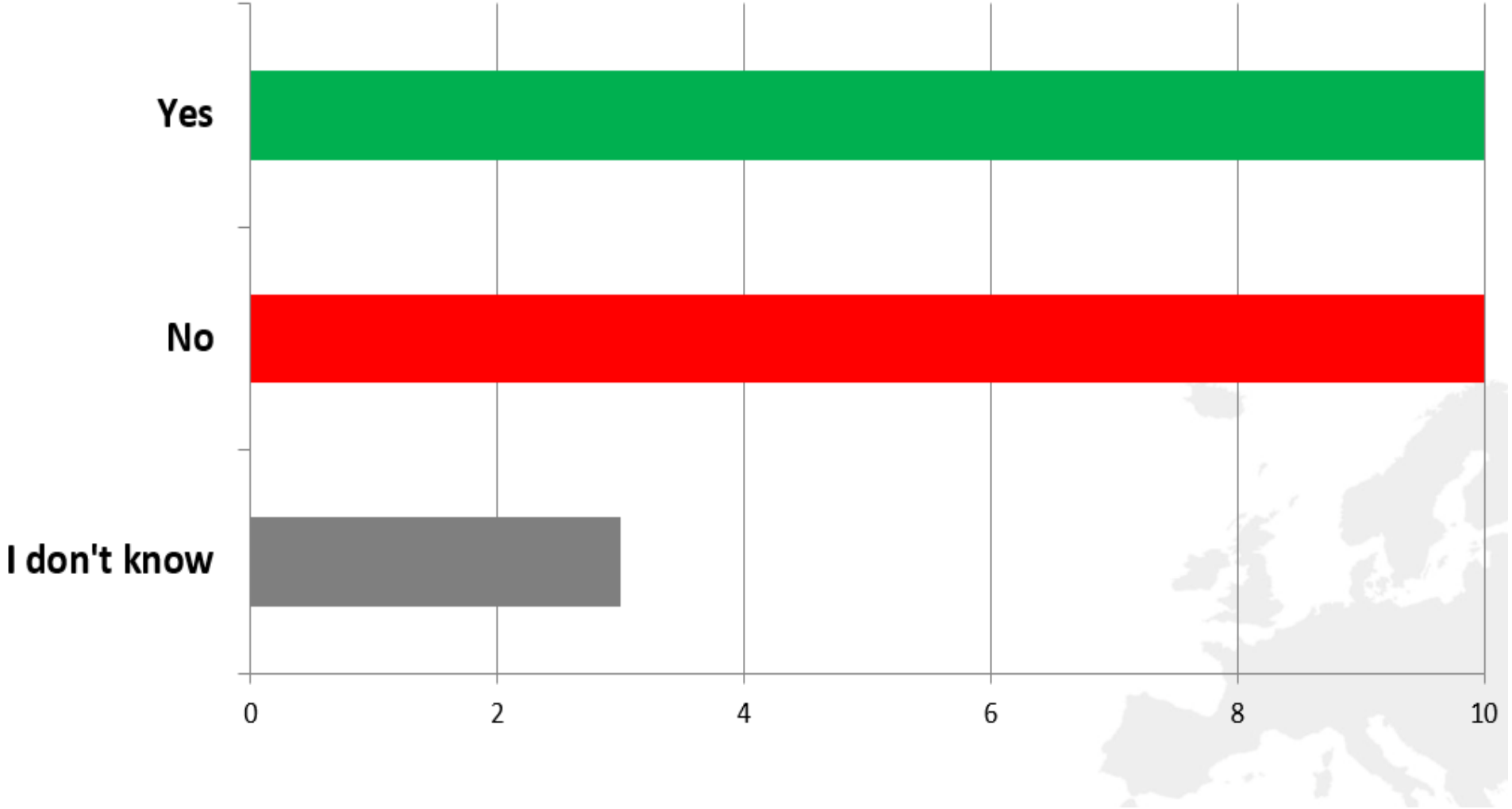
E-Mails: christian.napoli@iss.it (C.N.); flavia.riccardo@iss.it (F.R.);

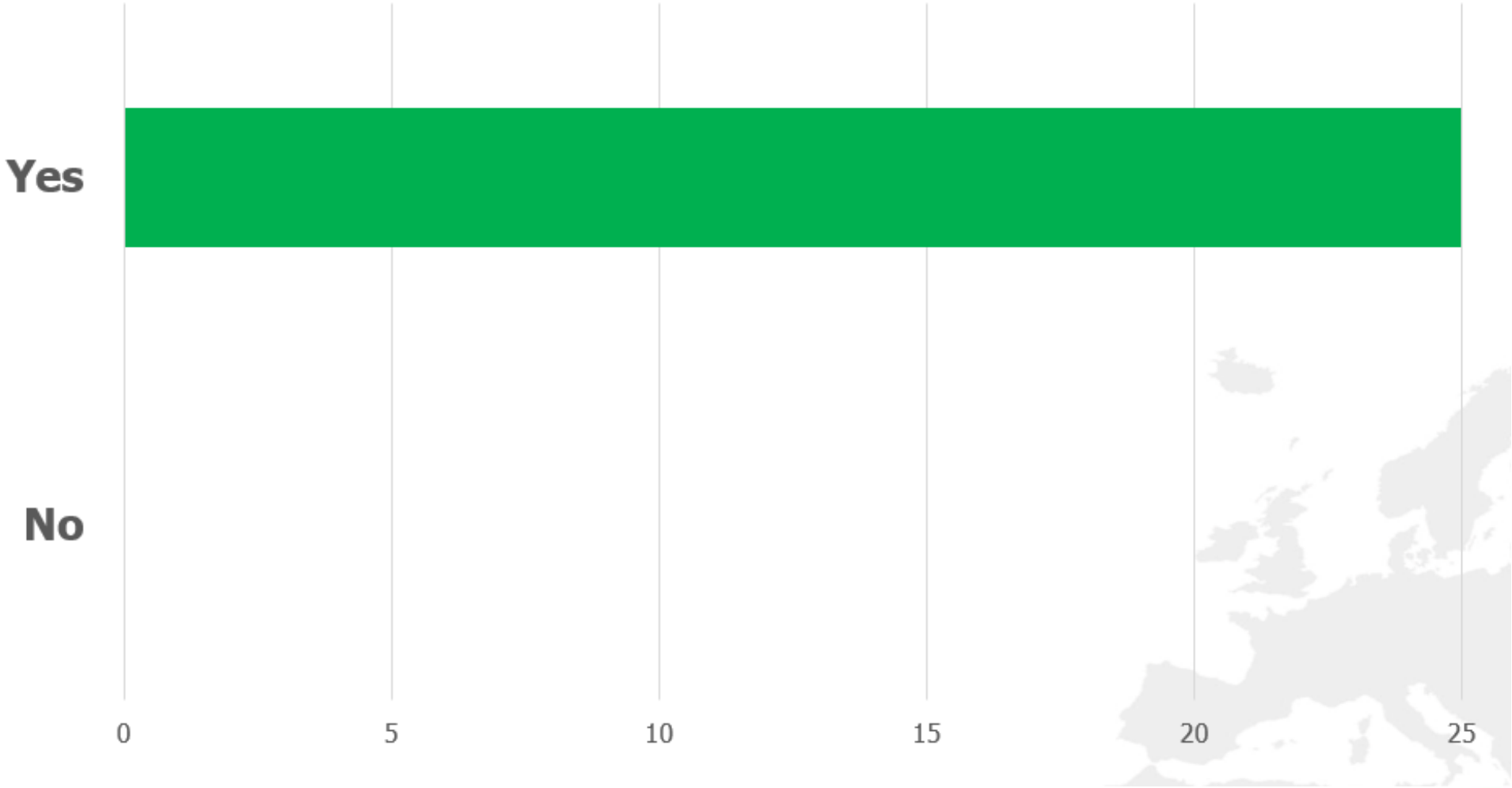
Are newly arrived migrants having an impact on infectious disease epidemiology in your country?



Does your country have national guidelines on screening for infectious diseases among migrants?



Would European guidance on screening for infectious diseases among migrants be useful?



Priority conditions in ECDC guidance

Active TB

Latent TB

HIV

Hepatitis B

Hepatitis C

Intestinal parasites

- Schistosomiasis
- Strongyloidiasis

Routine vaccinations

- Measles
- Mumps
- Rubella
- Hib
- Diphtheria
- Tetanus
- Pertussis
- Polio

Key overarching questions

- Should newly arrived migrants be offered screening for active TB, LTBI, HIV, hepatitis B, hepatitis C, strongyloidiasis, and schistosomiasis? Who should be targeted and how?

- Should newly arrived migrants be offered vaccination for measles, mumps, rubella, diphtheria, tetanus, pertussis, polio, Haemophilus influenzae type B [HiB] and hepatitis B?

- What are the implementation considerations in EU/EEA countries?

ECDC Scientific Panel

Angel Kunchev – **Bulgaria**	Maria Axelsson – **Sweden**
Gabrielle Jones – **France**	Manuel Carballo – **Switzerland**
Anna Kuehne – **Germany**	Sonia Dias – **Portugal**
Agoritsa Baka – **Greece**	Henrique Barros – **Portugal**
Apostoles Veizis – **Greece**	Ines Campos-Matos – **United Kingdom**
Lelia Thornton – **Ireland**	Dominik Zenner – **United Kingdom**
Cliona M Cheallaigh – **Ireland**	Manish Pareek – **United Kingdom**
Silvia Declich – **Italy**	Rebecca Hall – **United Kingdom**
Francesco Castelli – **Italy**	**OBSERVERS**
Pierluigi Lopalco – **Italy**	Isabel de la Mata – **European Commission**
Michael Vonk – **Netherlands**	Olga Gorbacheva – **IOM**
Maria van den Muijsenbergh – **Netherlands**	Joao Pires – **WHO Regional Office for Europe**
Irene Veldhuijzen – **Netherlands**	Ludovica Banfi – **EU Fundamental Rights Agency**

Two scientific panel meetings

1st Scientific panel meeting (Nov 2015)

MEETING REPORT

EVIDENCE-BASED GUIDANCE: PREVENTION OF INFECTIOUS DISEASES AMONG NEWLY ARRIVED MIGRANTS IN THE EU/EEA

Stockholm, 12-13 November 2015

Key issues emerging from the meeting

- Migrants do not pose a health threat to the citizens of the EU/EEA.
- Prevention and assessment of infectious diseases among newly arrived migrants is essential to address the health needs of migrants themselves.
- There is a need for Europe-wide evidence-based guidance on prevention and assessment of infectious diseases among migrants, both to ensure a consistent approach across the EU/EEA and to support Member States that currently do not have guidance in this area.
- ECDC will produce useful, relevant and durable voluntary guidance based on sound evidence that can be used by policy makers, public health experts and practitioners working in settings where newly arrived migrants present for health care.
- The guidance will uphold the principle of only offering assessment if follow up treatment and care can be provided, provide recommendations on what conditions to assess and what not to assess, and assist countries to set priorities and make the best use of available resources.
- The use of language in the guidance must be sensitive to political considerations, to ensure that unwarranted concerns about migrants and infectious diseases are not used to blame migrants or justify restrictive policies.
- There is also a need for separate guidance to be developed in the short-term to assist Member States to prioritise and implement appropriate and feasible measures for prevention and assessment of infectious diseases among the large numbers of migrants currently arriving in the EU/EEA. This is beyond the scope of the current project.
- Efforts are required to address the immediate health care needs of these migrants, including the increasing number of women and children. The most common health problems are respiratory infections, skin infections, gastroenteritis, physical injuries and mental trauma, resulting from the migration process itself and poor living conditions while in transit.
- It is critical to address the living conditions in centres of reception and detention in which migrants and refugees reside.

2nd Scientific panel meeting (Oct 2016)

MEETING REPORT

2ND ADVISORY GROUP MEETING TO DEVELOP EVIDENCE-BASED GUIDANCE ON PREVENTION OF INFECTIOUS DISEASES AMONG NEWLY ARRIVED MIGRANTS IN THE EU/EEA

Stockholm, 5-6 October 2016

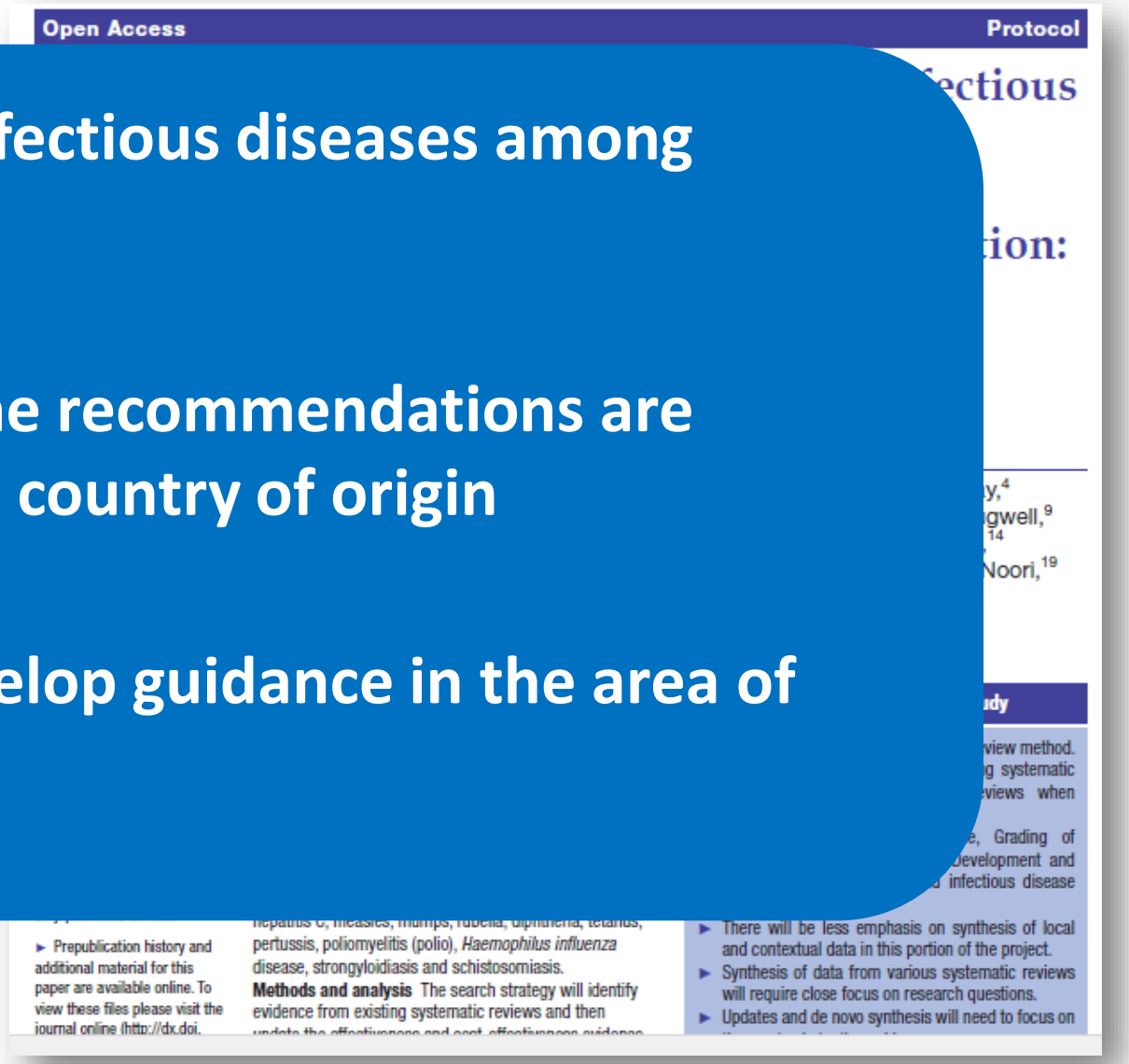
Key issues emerging from the meeting

- The evidence base for the guidance should be broadened to address gaps in systematic reviews. Specifically, there is a need for selective primary or scoping reviews that draw on grey literature, existing guidelines, existing screening programmes, expert opinion, good practice and qualitative research.
- The guidance will need to promote consistent standards at the same time as being sufficiently flexible to reflect the diversity of migrants, country contexts and health systems.
- There is a need for different strategies in different settings (e.g. point of entry, temporary residence in reception centres or camps, community settings) and this should be reflected in the guidance.
- The guidance should provide clear recommendations on who should be screened for which infectious diseases, but the main focus should be on implementation as, for many EU/EEA countries, guidance on how to most effectively reach and offer screening to migrants will be more useful than guidance on what to screen for.
- The guidance should include core public health values and principles (e.g. access to health care, availability of treatment, non-discrimination, human rights), use appropriate terminology, and include recommendations on how to involve migrant communities and organisations.
- The guidance should consider the critical role of primary health care, in view of the need to integrate screening and care for newly arrived migrants into the health system, taking into account the mobility of migrants and follow-up challenges (e.g. presumptive treatment may be appropriate in some cases, innovative approaches to health records may be required).
- The guidance will need to be updated on a regular basis in future to address changing needs and new evidence.
- There is a need for ECDC to host a third advisory group meeting to discuss the draft guidance and recommendations, including discussions on feasibility, acceptability, costs and equity.

Reports available from: https://www.researchgate.net/profile/Teymur_Noori

Methods

- Evidence on screening for infectious diseases among migrants is limited
- Therefore the certainty of the recommendations are conditional on prevalence in country of origin
- Very challenging task to develop guidance in the area of migrant health



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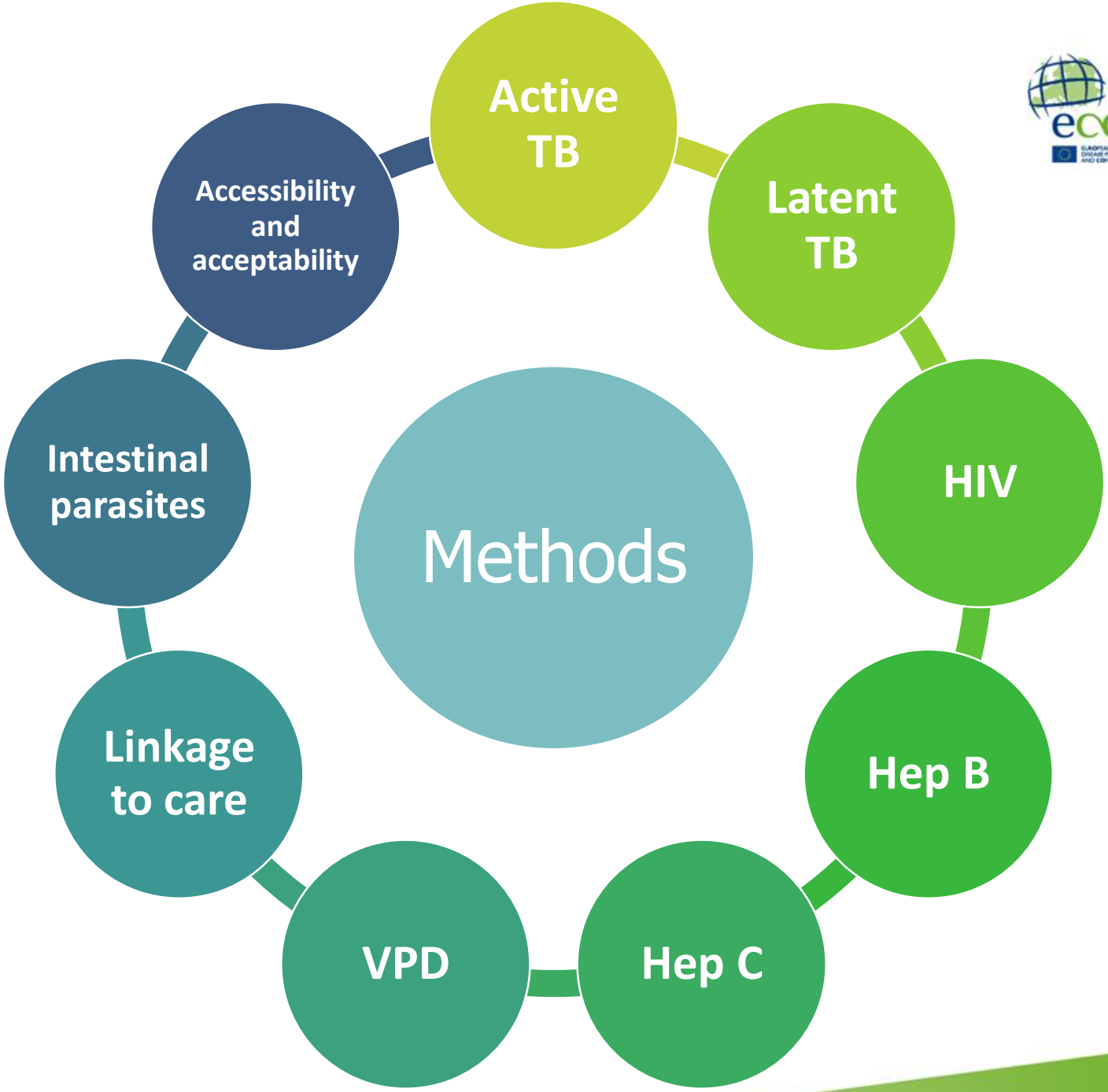
► Prepublication history and additional material for this paper are available online. To view these files please visit the journal online (http://dx.doi.

pertussis, poliomyelitis (polio), *Haemophilus influenza* disease, strongyloidiasis and schistosomiasis.

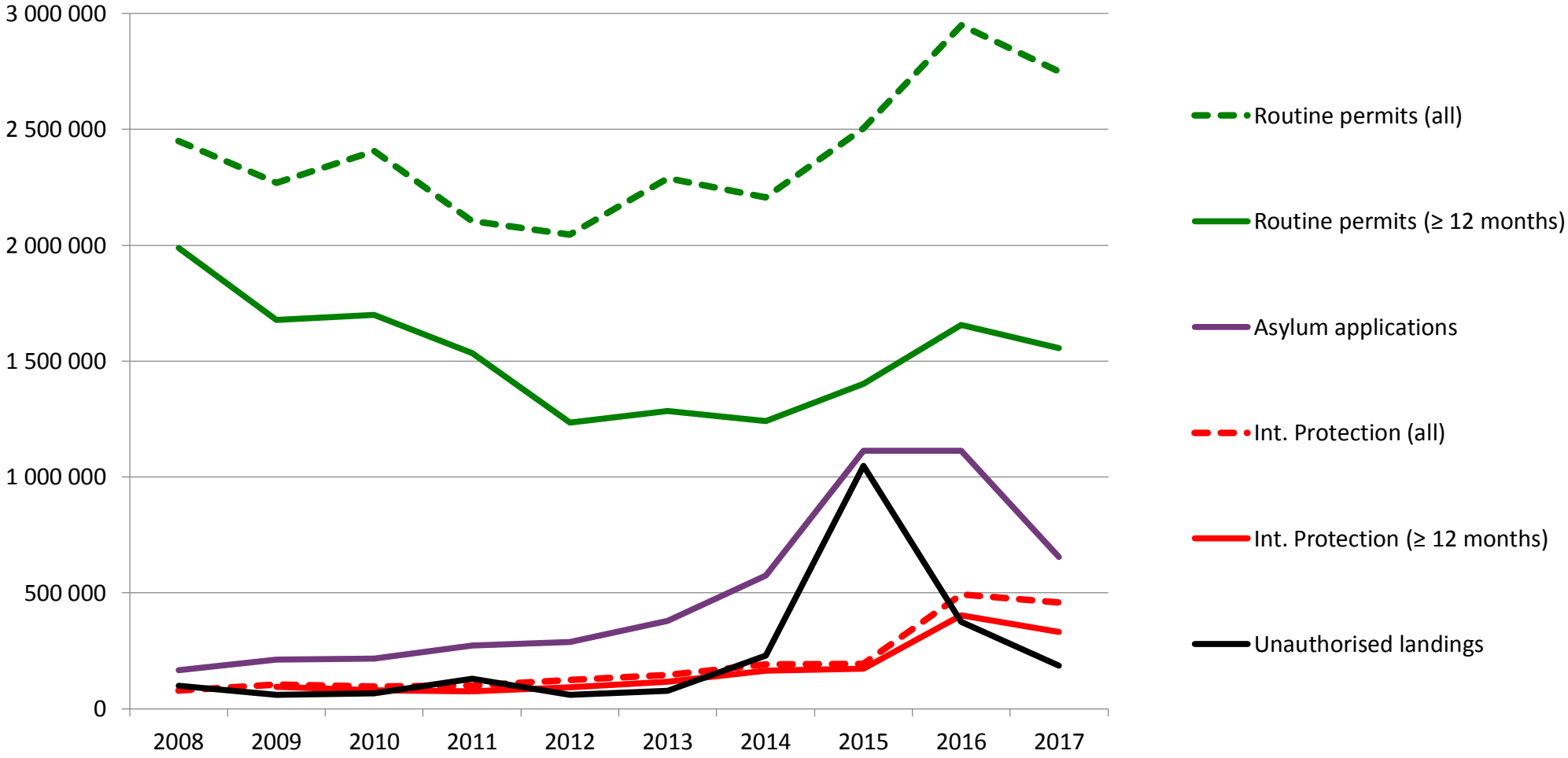
Methods and analysis The search strategy will identify evidence from existing systematic reviews and then

► There will be less emphasis on synthesis of local and contextual data in this portion of the project.
► Synthesis of data from various systematic reviews will require close focus on research questions.
► Updates and de novo synthesis will need to focus on

Systematic reviews underpinning the guidance



Annual immigration to the EU/EEA, 2008-2017



Source: Eurostat. Eurostat migr_resfirst, migr_resoth. [Available from: http://ec.europa.eu/eurostat/statistics-explained/index.php/Residence_permits_statistics#First_residence_permits_by_reason.

Refugee flows from 2002-2015

https://earthtime.org/stories/global_refugee_crisis_the_big_picture

Top 10 countries of births of immigrants and top 10 nationalities of asylum seekers (average 2014-2016)

Top 10 countries of birth of immigrants to the EU/EEA*

	EU/EEA	
Total	**1,226,859**	**%**
Syria	94,356	8
China	83,883	7
India	77,002	6
Morocco	50,469	4
United States	43,132	4
Pakistan	35,764	3
Ukraine	35,384	3
Moldova	29,606	2
Russia	24,976	2
Brazil	24,915	2
Other	727,371	59

*Covering 56% of non-EU/EEA immigrants

Important to give primary healthcare workers and policy makers an indication of which infectious diseases are prevalent in the countries of origin, which can guide screening efforts at countries of destination

Top 10 origins (nationalities) of asylum seekers in the EU/EEA

	EU/EEA	
Total	**1,037,378**	**%**
Syria	270,728	26
Afghanistan	137,500	13
Iraq	99,930	10
Pakistan	41,447	4
Albania	39,595	4
Nigeria	38,535	4
Eritrea	31,682	3
Iran	28,159	3
Kosovo	27,200	3
Russia	18,121	2
Other	304,482	29

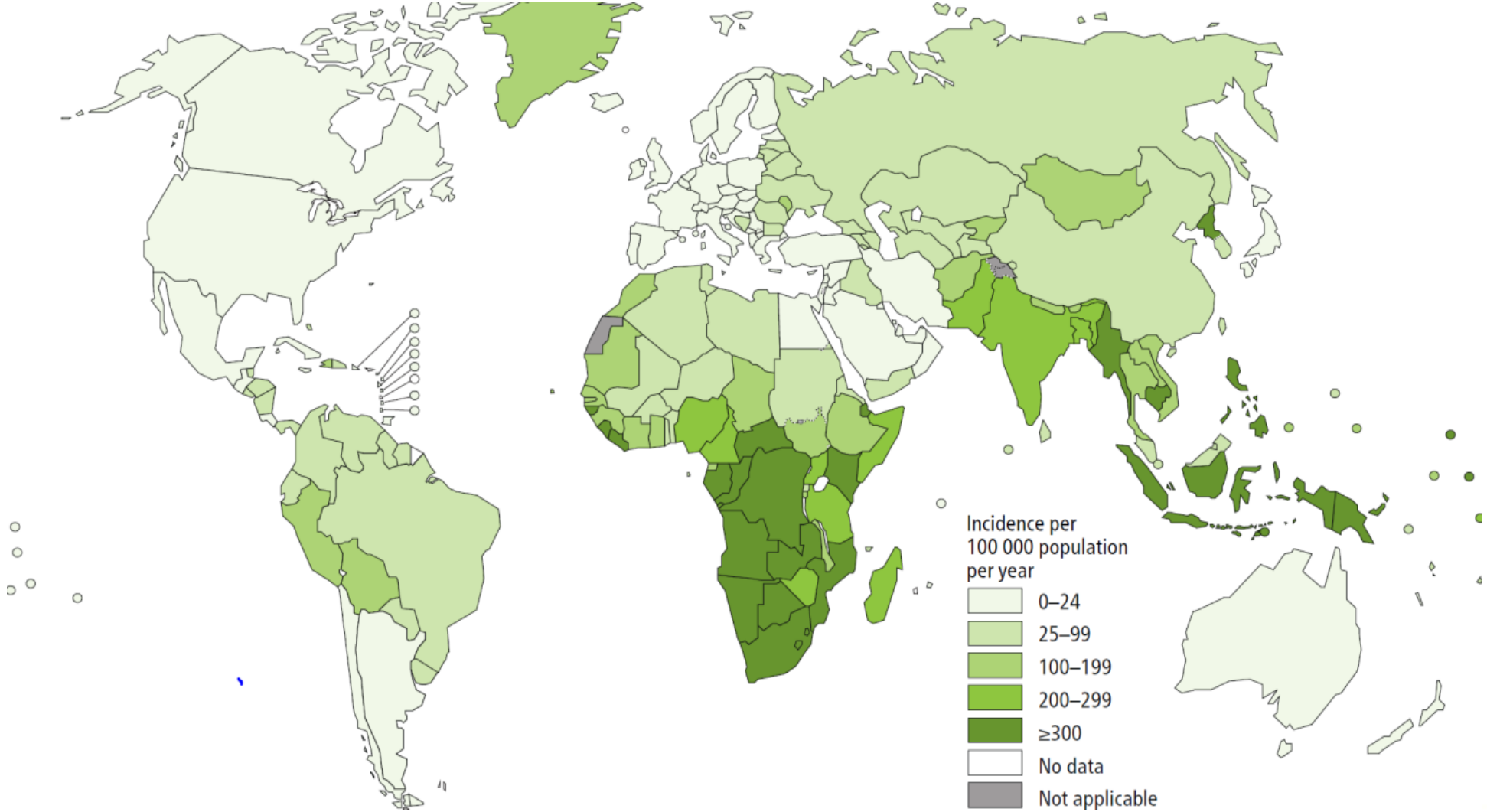
Source: Eurostat migr_asyappctza

Outline of the evidence for each condition in the ECDC screening guidance

- Burden of disease*
- Summary of evidence, focusing on effectiveness and cost-effectiveness
- Implementation considerations*
- Ad-hoc scientific panel opinion
- ECDC assessment*
- Evidence gaps and future research needs
- Recommendations from other national and international guidelines*

Burden of disease: TB

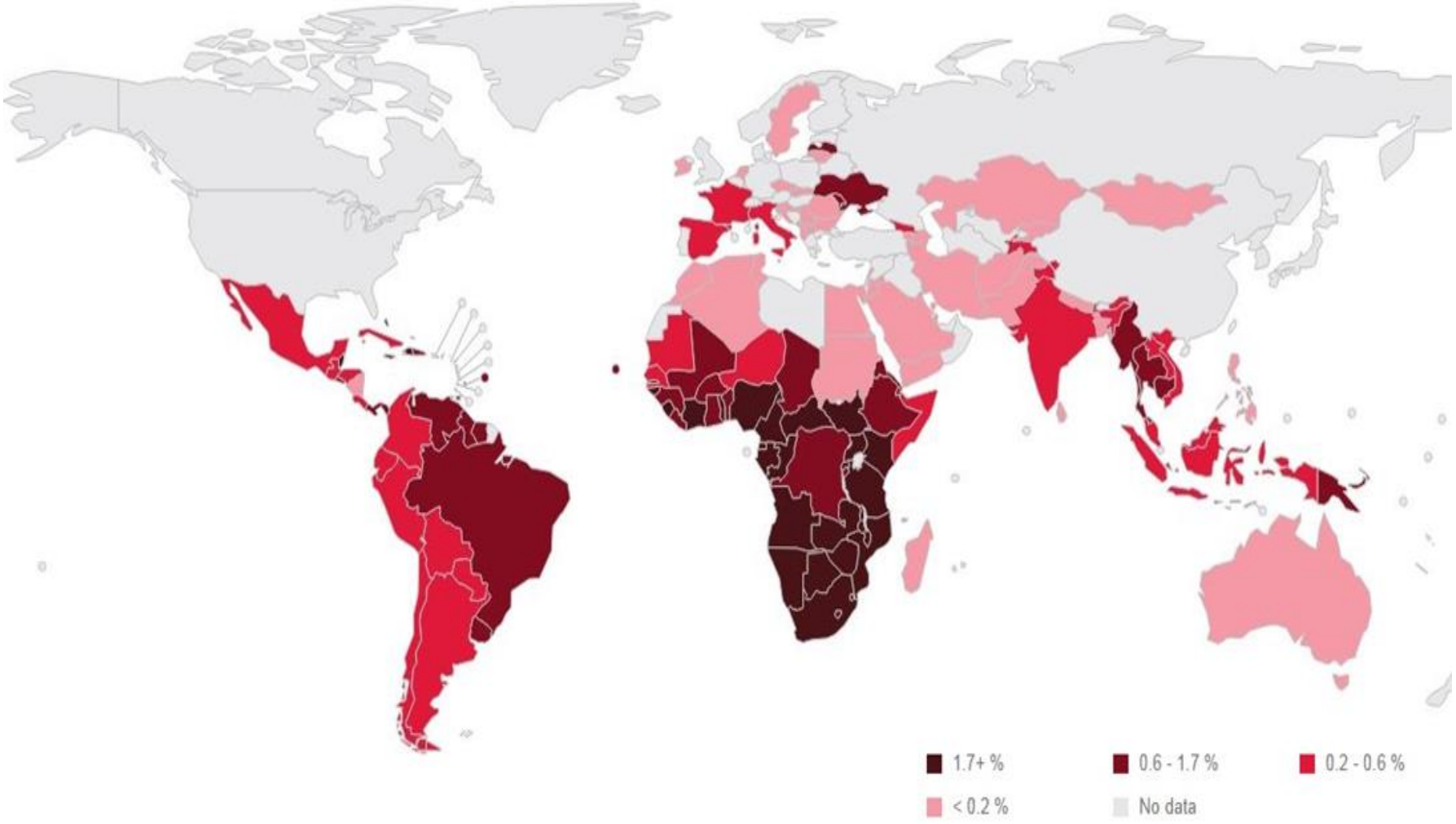
Figure 2. **WHO global map of TB incidence**



Source: Global tuberculosis report 2017. Geneva: World Health Organization; 2017.

Burden of disease: HIV

Figure 3. **UNAIDS global map of HIV prevalence**



Source: UNAIDS Report 2016. Geneva: 2016.

Key implementation considerations for infectious disease screening and vaccination programmes targeting newly arrived migrants

- Ensure all screening and vaccination is voluntary, confidential, non-stigmatising and carried out for the benefit of the individual

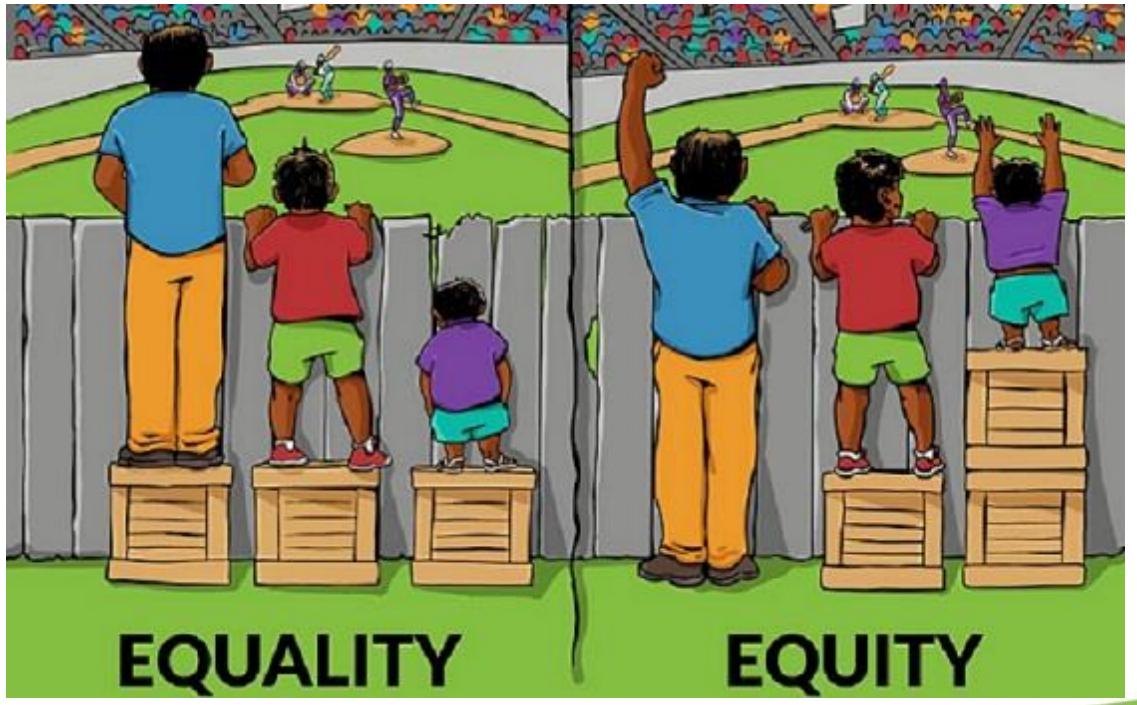
Key implementation considerations for infectious disease screening and vaccination programmes targeting newly arrived migrants

- Ensure all screening and vaccination is voluntary, confidential, non-stigmatising and carried out for the benefit of the individual

- Provide free screening, referral, and linkage to care and treatment for all individuals who require it, including undocumented migrants

Equity

Identifies differences and tries to reduce the gap between groups



Key implementation considerations for infectious disease screening and vaccination programmes targeting newly arrived migrants

- Ensure all screening and vaccination is voluntary, confidential, non-stigmatising and carried out for the benefit of the individual

- Provide free screening, referral, and linkage to care and treatment for all individuals who require it, including undocumented migrants

- Consider the unique needs of newly arrived migrants when offering screening and vaccination, in terms of delays to presentation, follow-up appointments, and uptake and completion of treatment, and take steps to reduce post-screening/testing drop-out from care

- Recognise that newly arrived migrants face a range of issues (e.g. shelter, sanitation, food, water, employment, mental health problems) that may take precedence over seeking preventative health care and that may increase the risks or consequences of infectious diseases

Final evidence-based statements

Active TB

Offer active TB screening using chest x-ray (CXR) soon after arrival for migrant populations from high TB incidence countries. Those with an abnormal CXR should be referred for assessment of active TB and have a sputum culture for *Mycobacterium tuberculosis*.

Schistosomiasis

Offer serological screening and treatment (for those found to be positive) to all migrants from countries of high endemicity in sub-Saharan Africa, and focal areas of transmission in Asia, South America and North Africa.

Adaptation of this guidance should be based on a country-specific assessment that considers:

- **The numbers and types of migrants arriving in the country**
- **The legal and organisational context in which national health systems operate**

Offer hepatitis B vaccination series to all migrant children and adolescents from intermediate/high prevalence countries (≥2% - 5% HBsAg) who do not have evidence of vaccination or immunity.

Hepatitis C

Offer hepatitis C screening to detect HCV antibodies to migrant populations from HCV endemic countries (≥2%) and subsequent RNA testing to those found to have antibodies. Those found to be HCV RNA positive should be linked to care and treatment.

Offer vaccination to all adult migrants without immunisation records according to the immunisation schedule of the host country. When this is not possible, adult migrants should be given a primary series of diphtheria, tetanus, and polio vaccines.

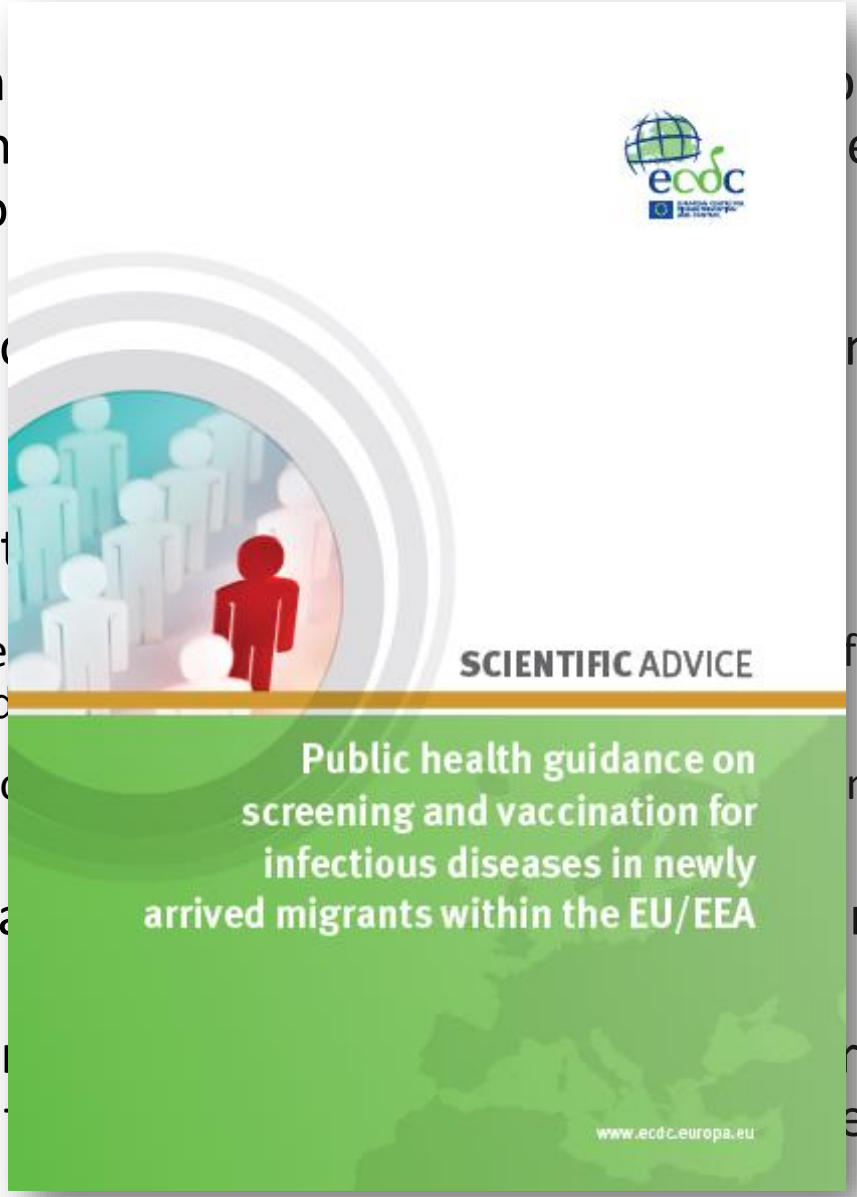
Recommendations from other national and international guidelines

Table 17. International guideline VPD recommendations for refugees and/or other migrant populations

Country	How and who to vaccinate
Ireland (8)	Assess all migrants for previous measles vaccination. MMR All migrants without documented evidence of previous measles vaccination should be offered MMR vaccination as follows: • All children in accordance with the routine childhood immunisation schedule at 12 months and 4–5 years of age (2 doses) • All others according to the 'late entrants catch-up schedule' for children and adults, as follows: – 12 months to 4 years, 1 dose MMR, 2nd dose at 4–5 years of age – 4 years to <18 years of age, 2 doses MMR at one month interval – Adults aged 18 years and older, 2 doses MMR at one month interval DTaP-IPV • Vaccinate all adult immigrants without immunisation records using a primary series of tetanus, diphtheria and inactivated polio vaccine (three doses), the first of which should include acellular pertussis vaccine. • Vaccinate all immigrant children with missing or uncertain vaccination records using age-appropriate vaccination for diphtheria, pertussis, tetanus and polio.
Italy (13, 393)	Primary prevention interventions (vaccinations) as well as secondary prevention interventions are recommended in the second reception phase. Children (0–14 years) never vaccinated or with uncertain or unknown vaccination status: vaccinations in accordance with the national schedule, depending on age. Adults with uncertain or no vaccination history: • polio • measles, mumps, rubella, chickenpox; excluding pregnant women • diphtheria, tetanus, pertussis, HBV for the entire adult population screened in accordance with guideline recommendations (migrants from HBV incidence of HBsAg >2%, migrants with risk factors, and pregnant women) and negative for serological markers.
UK (232, 233)	• The UK offers vaccinations in line with the national immunisation schedule to any migrant whose immunisation status is uncertain or incomplete, in accordance with guidance for individuals with uncertain or incomplete immunisation status. • All migrants are eligible for vaccines through the National Immunisation Programme and can access immunisation services the same way as the rest of the population. • Refugees who are to be resettled in the UK through a formal refugee resettlement scheme are offered vaccination pre-departure, in line with the national immunisation schedule. • Asylum seekers in initial accommodation centres in the UK are offered vaccination as part of their initial health assessment.

Conclusions

- Most migrants entering th -groups of migrants carry a disproportionate burden e lower vaccination coverage depending on co
- Major gaps in the scientific nd cost-effectiveness of screening and vaccination
- Available evidence suggest
  - It is likely to be both effe for active TB and LTBI, HIV, HCV, HBV, strongyloidiasis and
  - There is a clear benefit t mes as per national guidance
- However, this is conditiona nts' countries of origin
- Consensus on the need fo re for key infectious disease for all migrants in ed migrants



Acknowledgments

ECDC colleagues

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Scientific panel members

Angel Kunchev, Gabrielle Jones, Anna Kuenhe, Andreas Gilsdorf, Agoritsa Baka, Apostoles Veizis, Lelia Thornton, Silvia Declich, Francesco Castelli, Pierluigi Lopalco, Michael Vonk, Maria van den Muijsenbergh, Irene Veldhuijzen, Maria Axelsson, Sonia Dias, Henrique Barros, Manuel Carballo, Katherine Russell, Ines Campos-Matos, Dominik Zenner, Manish Pareek, Rebecca Hall, Isabel de la Mata, Olga Gorbacheva, Joao Pires, Ludovica Banfi, Cliona M Cheallaigh

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Sally Hargreaves, Laura Nellums, David Ingleby

Thank you

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