Risks of infections among migrant children

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CEVAG

A voluntary association of private individuals and legal entities to promote the efficient and safe use of vaccines to prevent, control, and if possible, eradicate infectious diaseses

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Who is at risk of infections???

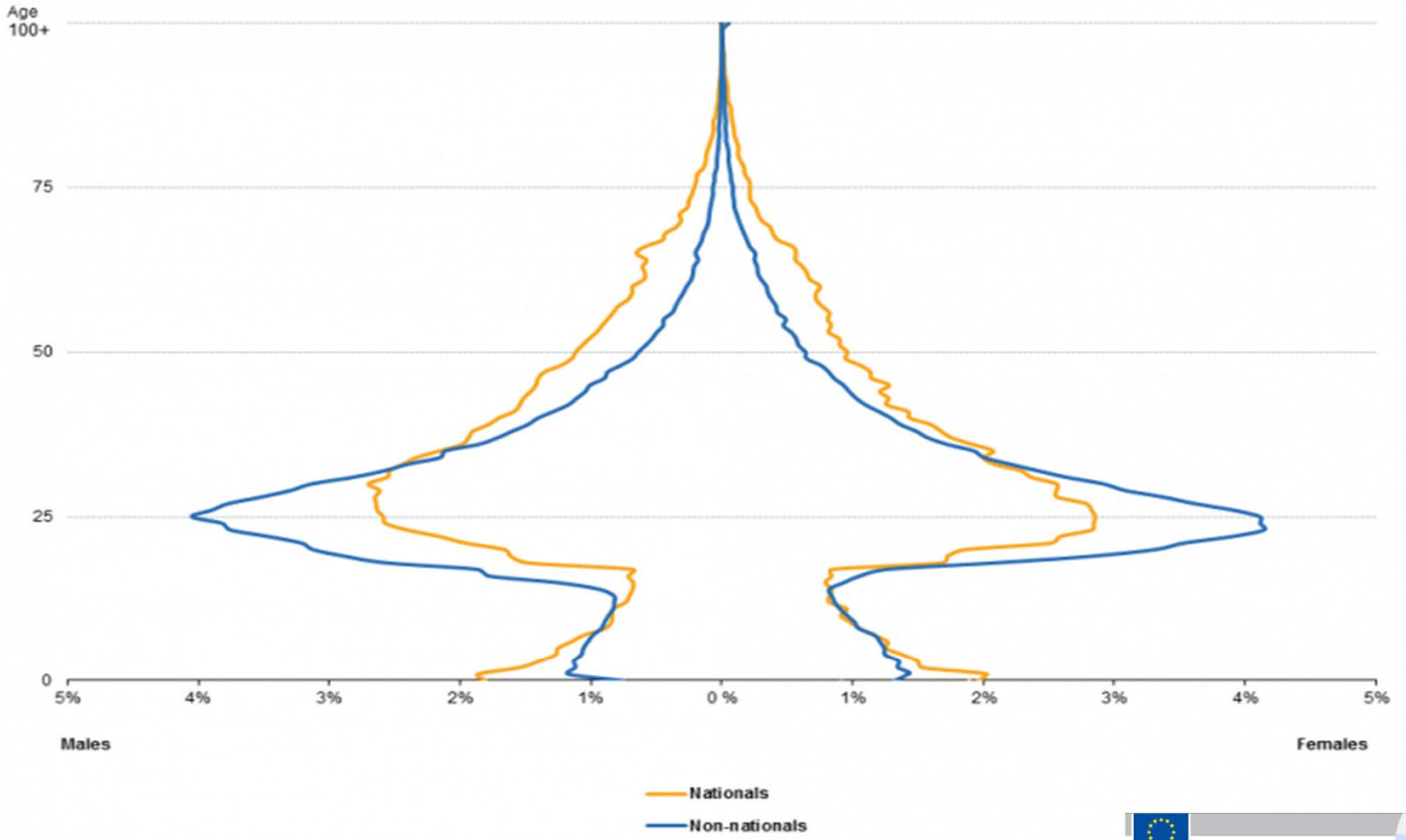
- Children in resident population ??

- „Children on the move”??

According to Eurostat (2015) , there were **34.3 million people born outside of the EU-28** living in an EU Member State on 1 January 2015, and **there were 18.5 million people born in a different EU Member State** from the one where they were resident.

File:Age structure of immigrants by citizenship, EU-28, 2015 (1) (%).png

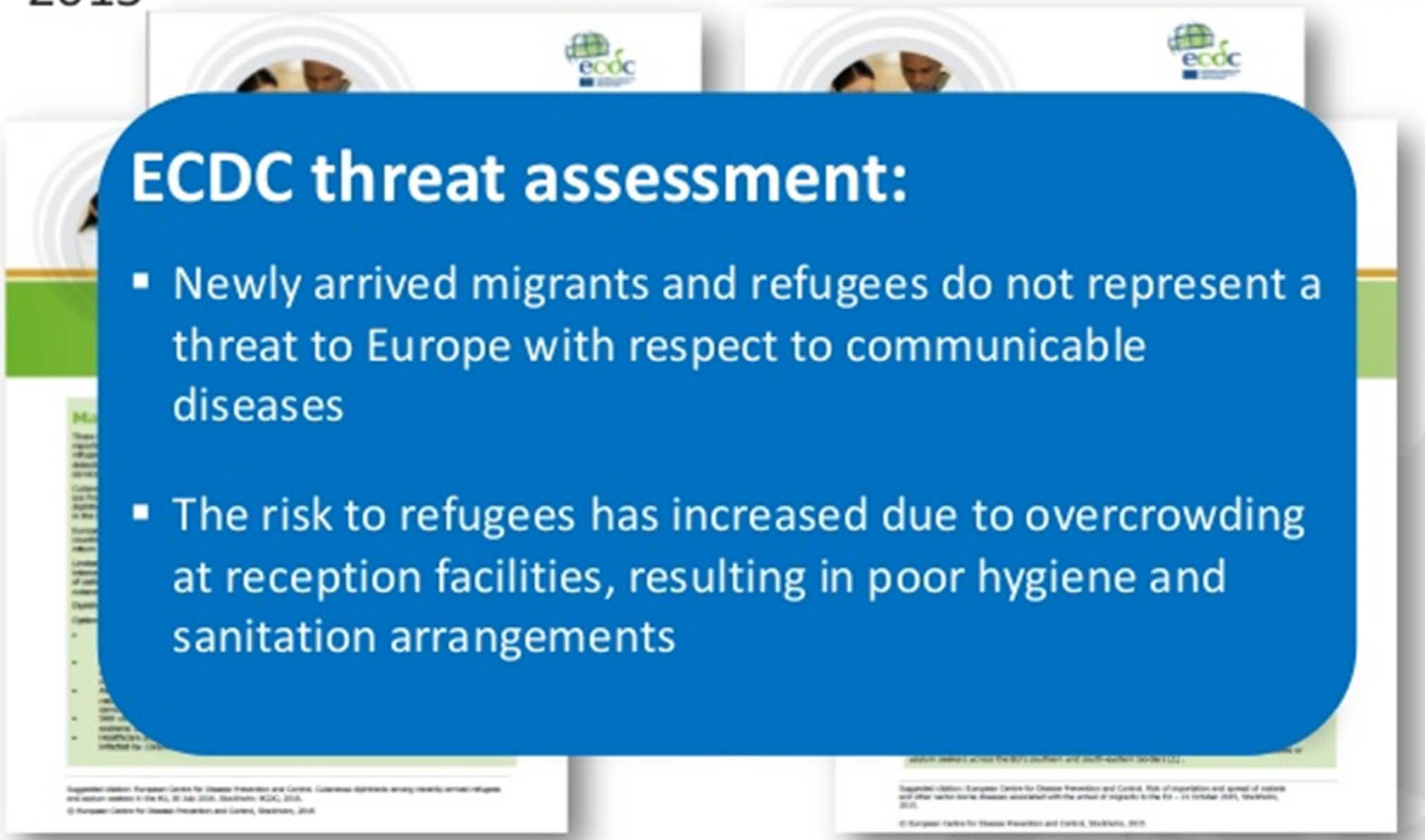
File File history File usage



eurostat
Statistics Explained

Risk assessments

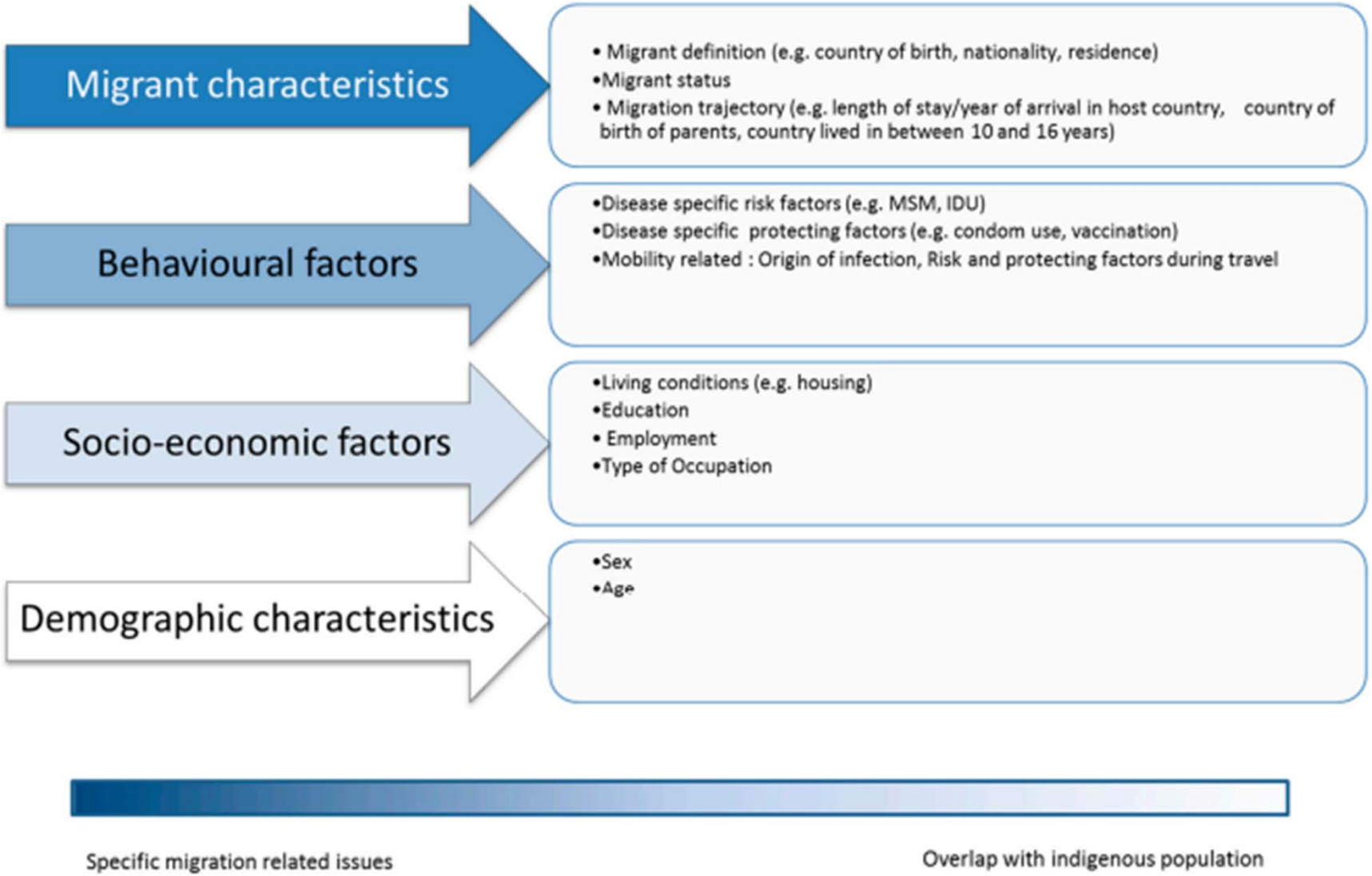
2015



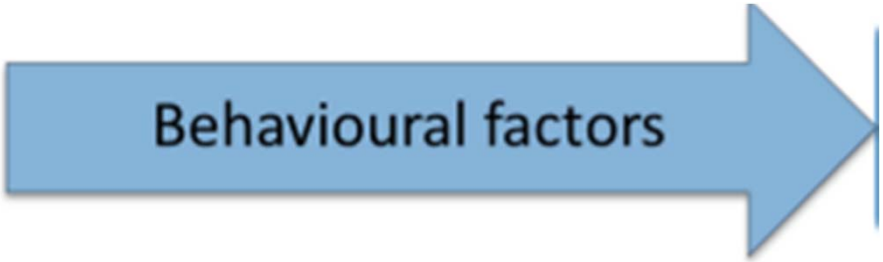
ECDC threat assessment:

- Newly arrived migrants and refugees do not represent a threat to Europe with respect to communicable diseases
- The risk to refugees has increased due to overcrowding at reception facilities, resulting in poor hygiene and sanitation arrangements

Factors/characteristics identifying the four data collection domains and examples of type of variables under each domain*



*Riccardo et al. in Int. J. Environ. Res. Public Health 2015, 12, 11640-11661



- Country of birth, nationality, rezidence
  - E.g.malaria
- Length of stay/year of arrival in host country
- Country of birth of parents
- Country lived in between 10 to 16 years of life
  - Disproportional burden of TB, HIV, HBV

- Disease specific risks factors
  - IDU, MSM, inborn, …
- Disease specific protecting factors
  - condom use, **immunizations..**
- Mobility related

Roggelin *et al. Malar J (2016) 15:325*
DOI 10.1186/s12936-016-1366-7

Malaria Journal

RESEARCH Open Access

Sharp increase of imported *Plasmodium vivax* malaria seen in migrants from Eritrea in Hamburg, Germany

Louise Roggelin[1*], Dennis Tappe[2], Bernd Noack[2], Marylyn M. Addo[1,3], Egbert Tannich[2,3] and Camilla Rothe[1]

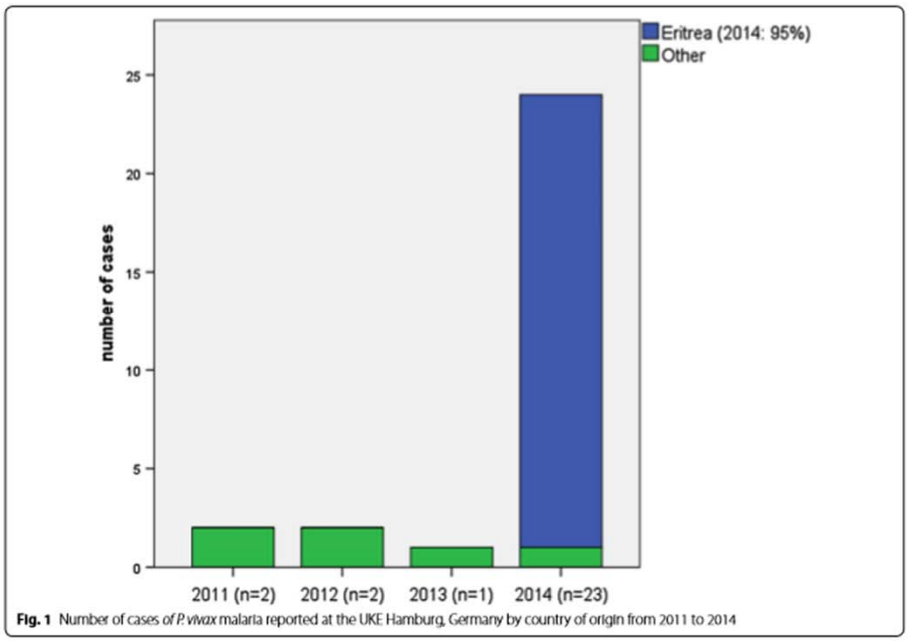


Fig. 1 Number of cases of *P. vivax* malaria reported at the UKE Hamburg, Germany by country of origin from 2011 to 2014

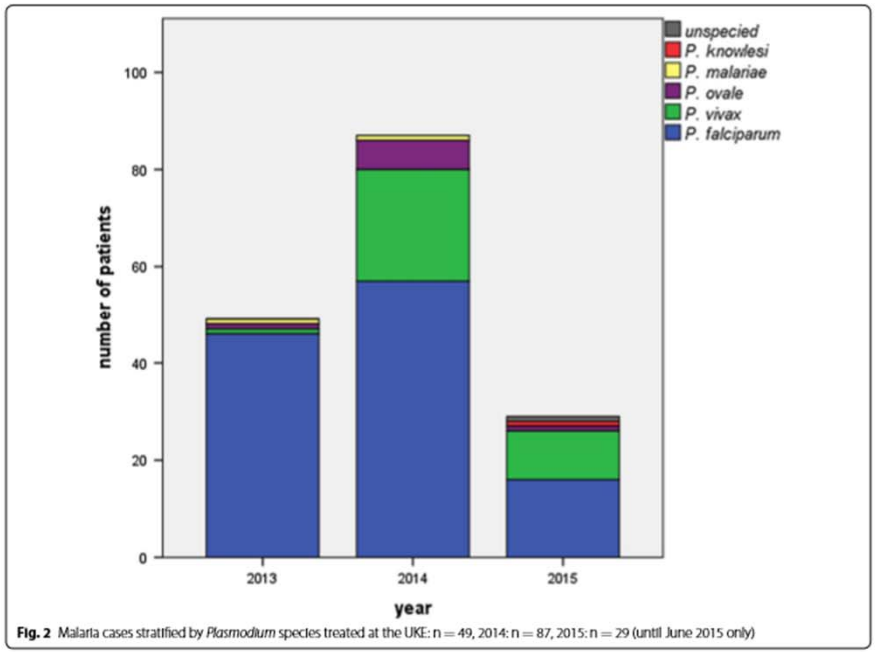


Fig. 2 Malaria cases stratified by *Plasmodium* species treated at the UKE: n = 49, 2014: n = 87, 2015: n = 29 (until June 2015 only)

Patient numbers are small, though the vector - *Anopheles atroparvus* is present in Germany!

Tuberculosis as a risk…*

- Much of TB burden is concentrated in high-burden settings of **Africa and Asia (28 and 58%, respectively**) where TB continues to be a cause of morbidity and mortality.
- Although many countries have developed and documented immigration TB screening programs to suit the needs of adults, **attention to migrant children lacks intensive studies**.
- **TB screening in high-risk children from high-incidence countries should form part of all immigration TB screening** programs.
- Furthermore, due to its “paucibacillary” nature, which makes **it rarely infectious**, when they develop the disease, it **is more severe**, resulting in increased morbidity and mortality compared with adults.

*The Impact of Tuberculosis among Immigrants: Epidemiology and Strategies of Control in High-Income Countries... http://dx.doi.org/10.5772/66823

Tuberculosis as a risk…*

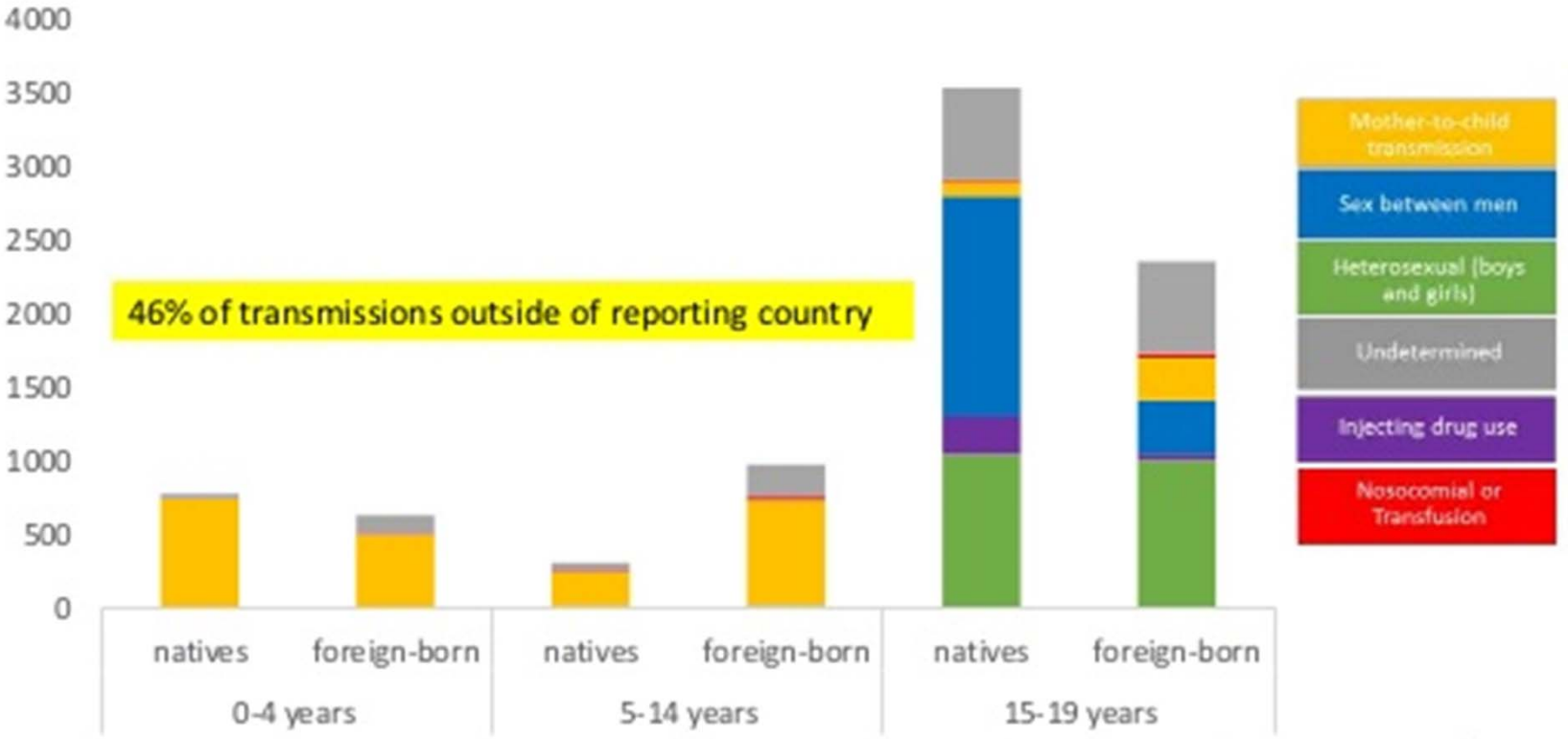
- A recent survey compared various screening tools (history, physical examination, **TST,** interferon-gamma release assays (IGRAs), CXR,3 and MTB (M. tuberculosis) bacteriology) among migrant children.
- History and physical examination was often normal in children with active TB disease, and **TST emerged as a better predictor** of TB infection or disease.
- **Sociocultural and behavioral factors** have shown to be involved in the acceptance of LTBI treatment in these populations.
- In pediatrics, although **TB may not be of immediate public health concern**, individual morbidity and mortality is high.
- **The goal of TB screening is to identify children with LTBI** who are at risk for progression to active TB, as early LTBI treatment prevents extended and disseminated disease.

*The Impact of Tuberculosis among Immigrants: Epidemiology and Strategies of Control in High-Income Countries... http://dx.doi.org/10.5772/66823

HIV/AIDS

"Native" vs. "migrant" children diagnosed in EU/EEA

HIV-infections diagnosed among children and adolescents (0-19 years), **by region or origin** and modes of transmission 2006-2015, EU/EEA, N=8 617



Source: The European Surveillance System, 30 EU/EEA reporting countries

Int. J. Environ. Res. Public Health 2017, 14, 459;

International Journal of
Environmental Research and Public Health

MDPI

Article

Immunization Strategies Targeting Newly Arrived Migrants in Non-EU Countries of the Mediterranean Basin and Black Sea

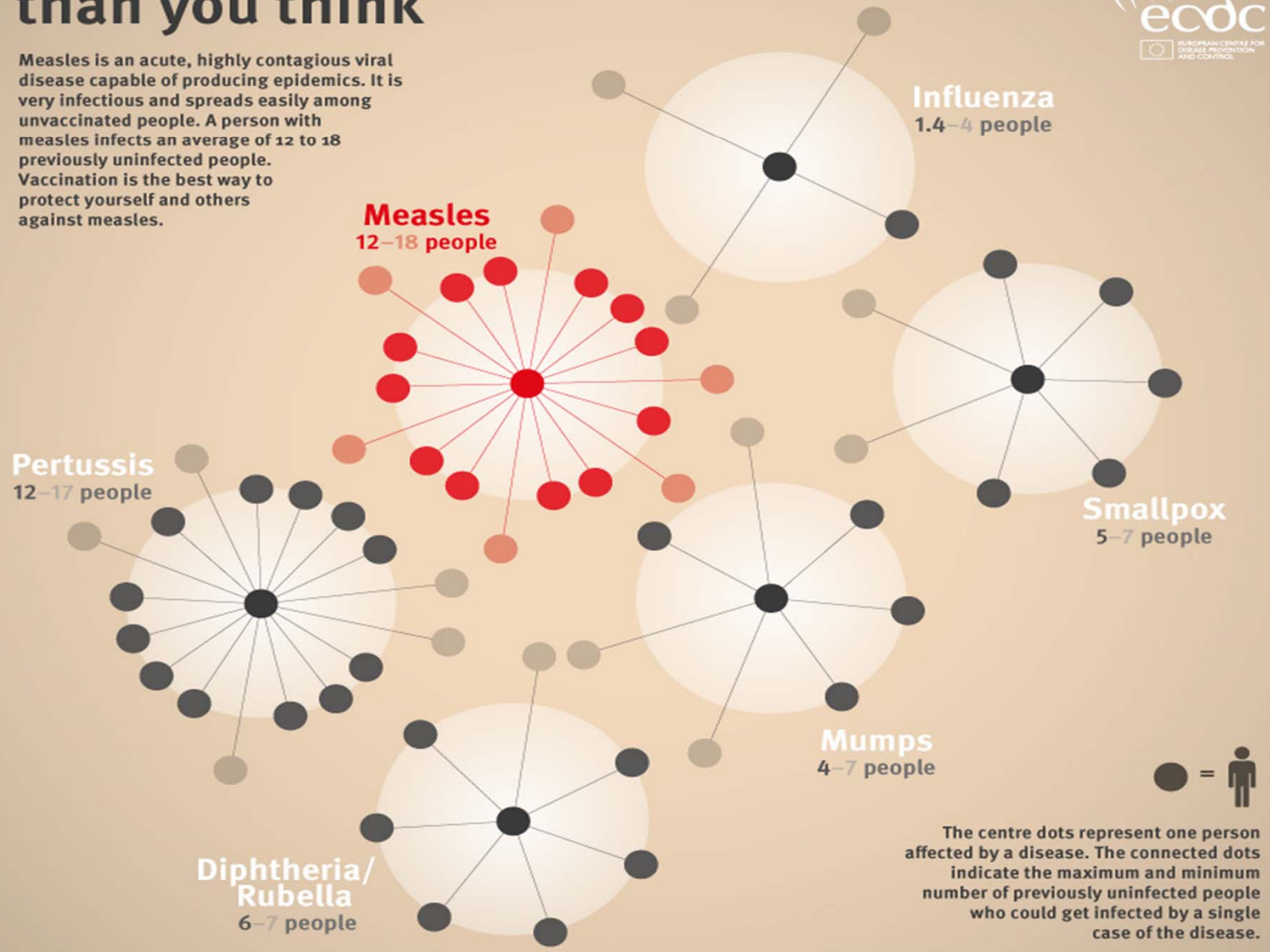
Cristina Giambi [1,*], Martina Del Manso [1], Maria Grazia Dente [1], Christian Napoli [2], Carmen Montaño-Remacha [3], Flavia Riccardo [1], Silvia Declich [1] and Network for the control of cross-border health threats in the Mediterranean Basin and Black Sea for the ProVacMed project [4]

Conclusions:

- Although differing among countries, **indications for immunizing migrants are in place in most countries.**
- However, we cannot infer from our findings whether those strategies are **currently functioning and whether barriers to their implementation** are being faced.
- Further studies focusing on these aspects are needed to **develop concrete and targeted recommendations for action.**
- Since migrants are moving across countries, **development of on-line registries** and cooperation between countries could allow keeping track of administered vaccines in order to **appropriately plan immunization series and avoid unnecessary vaccinations**.

Measles is more contagious than you think

Measles is an acute, highly contagious viral disease capable of producing epidemics. It is very infectious and spreads easily among unvaccinated people. A person with measles infects an average of 12 to 18 previously uninfected people. Vaccination is the best way to protect yourself and others against measles.



The centre dots represent one person affected by a disease. The connected dots indicate the maximum and minimum number of previously uninfected people who could get infected by a single case of the disease.

Source: Plotkin S, Orenstein W, Offit P. Vaccines. Fifth Edition, 2008, Elsevier Inc.

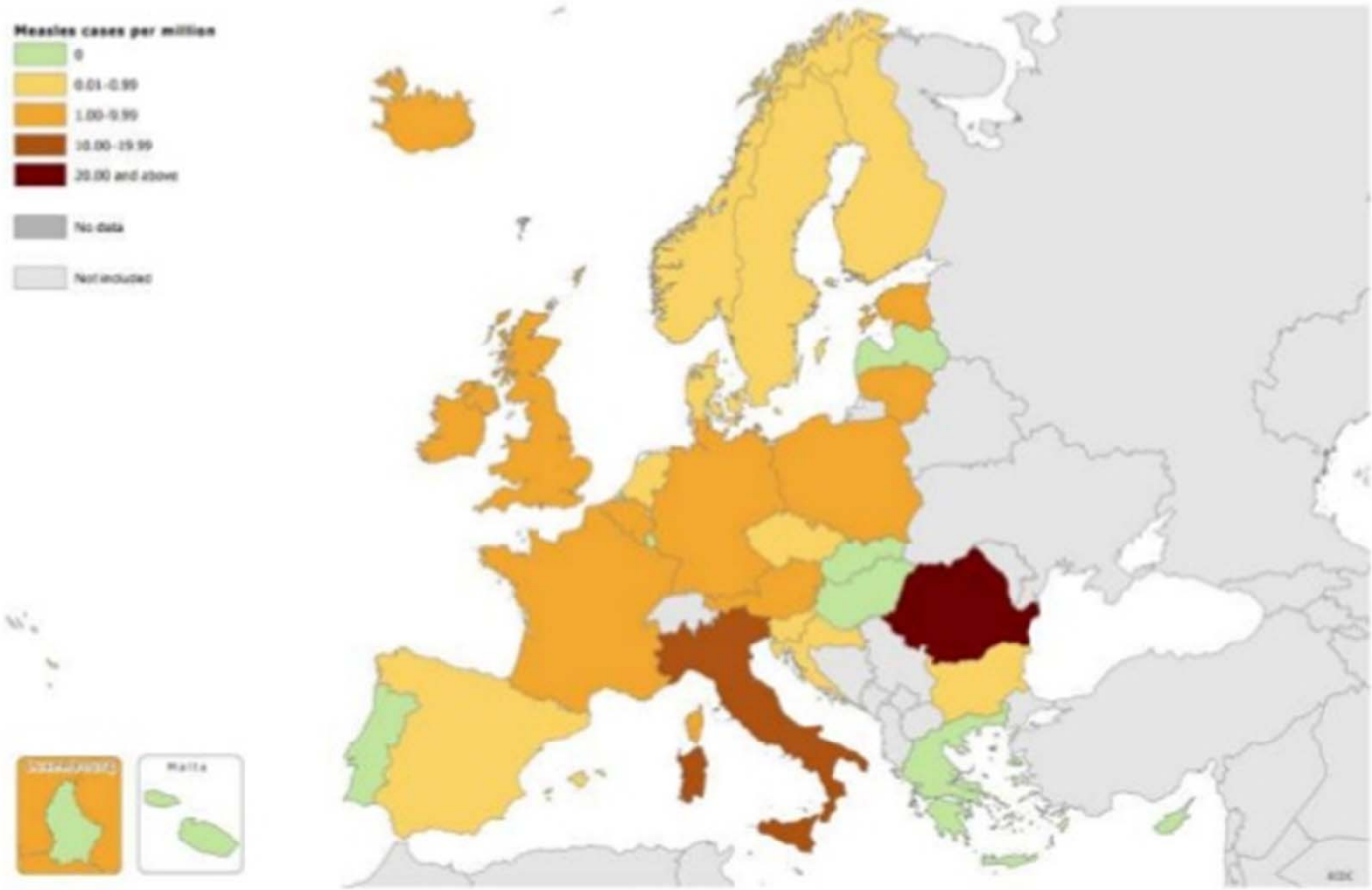
ECDC: Disease specific challenges

- **Measles:**
  - remains problematic (**4499 cases in EU in 2008*).**
  - **~28000 cases in 2010**, due to large outbreak in Roma – Bulgaria
    - tipically „difficult to reach" (wandering) population
  - UK, Germany, Italy, France, etc.
    - the problem of the „anthroposophics" (PIDJ, 2011, March)
  - WHO Euro 2010 elimination goal not reached
  - **Vaccine preventable!!!**
    - **MMR -Priorix/GSK**

* ECDC Annual Epidemiological Reports (2012)

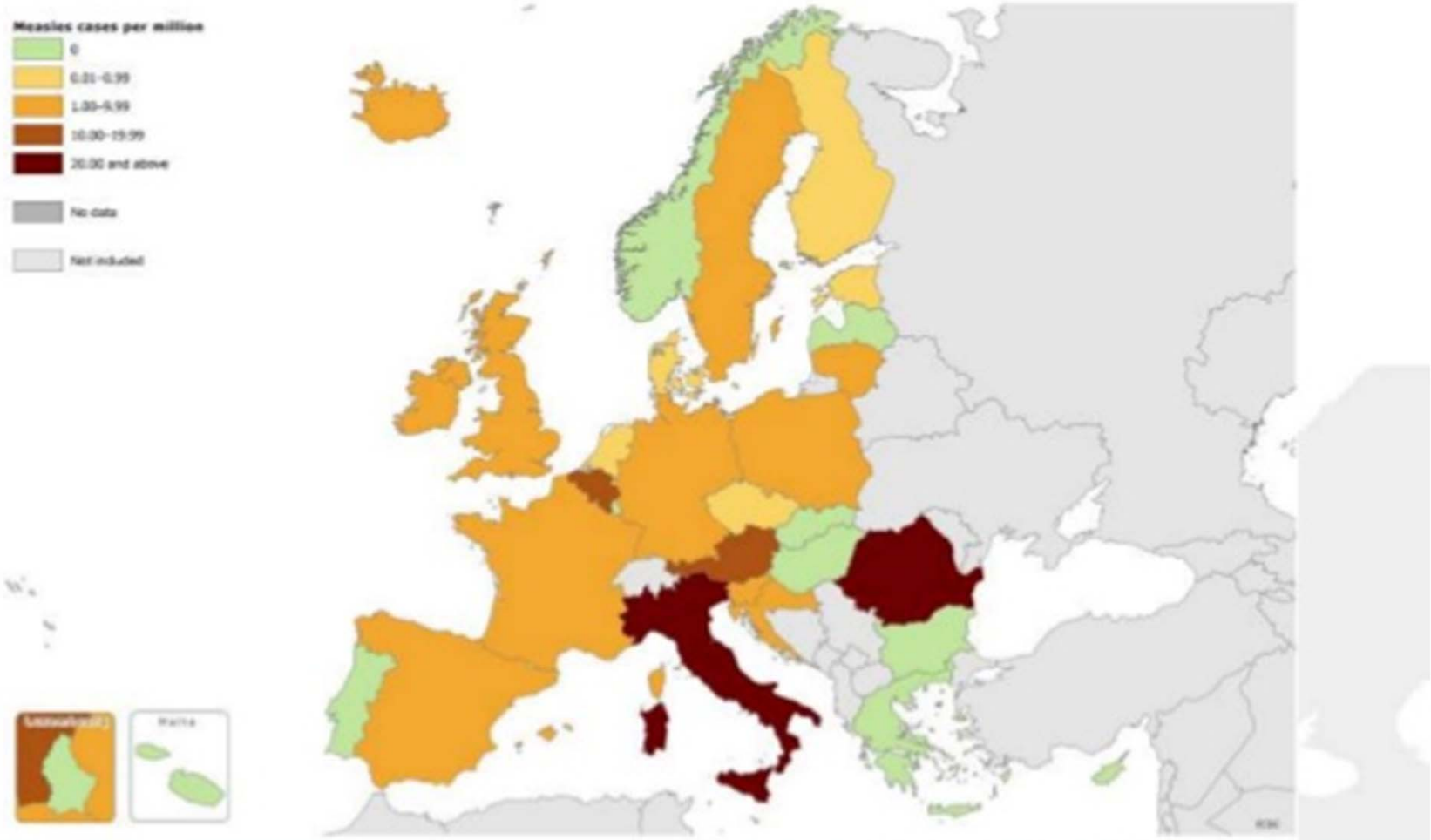
Morbilli – as a risk…

Measles **notification rate per million population** by country, **2016**, EU/EEA countries (n=3 767)



Source: The European Surveillance System TESSy as of 26 January 2017

Measles notification rate per million population by country, March 2016 – February 2017 EU/EEA countries (n=5 881)

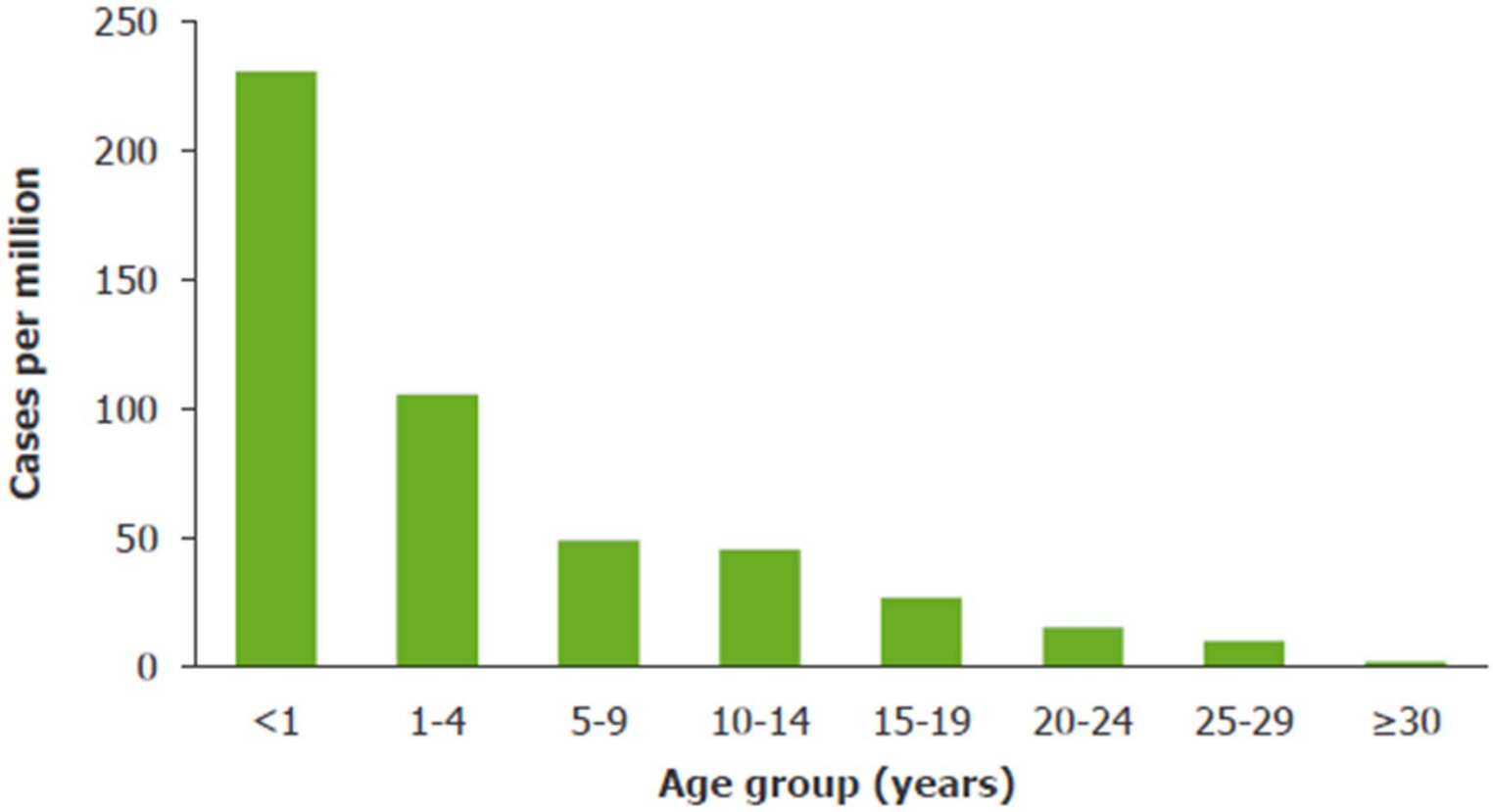


Source: ECDC, The European Surveillance System TESSy as of 27 March 2017

- Between **1 January and 31 December 2016, 3 767 cases of measles** were reported by 30 EU/EEA countries.
- **Twenty-eight countries** reported consistently throughout this 12-month period. • **Romania accounted for 42% of all** cases reported during this period.
- Of all cases with known age, 94% had a known vaccination status and of these, **87% were reported as unvaccinated**. In the target group for the first dose of routine childhood MMR (measles-mumps-rubella) vaccination (children 1–4-years), 84% of all cases were unvaccinated.

Morbilli – age – ECDC-EU

Figure 2. Measles notification rates (cases per million) by age group, May 2012 to April 2013, EU/EEA countries and Croatia (N=8 530 cases with known age)



Current major morbilli outbreaks in Europe

- The largest current measles outbreaks in Europe are taking place in **Romania, Italy, Germany/Berlin and Greece**.

- **Romania** has reported **over 9 000 cases and 34 deaths** since January 2016 (as of 22 Sept 2017). The majority of cases are concentrated in areas where immunization coverage is especially low.

- According to reported data, **the 3 measles genotypes circulating in Romania since January 2016 were not spreading in the country before**, but were reported in several other European countries and elsewhere in 2015.

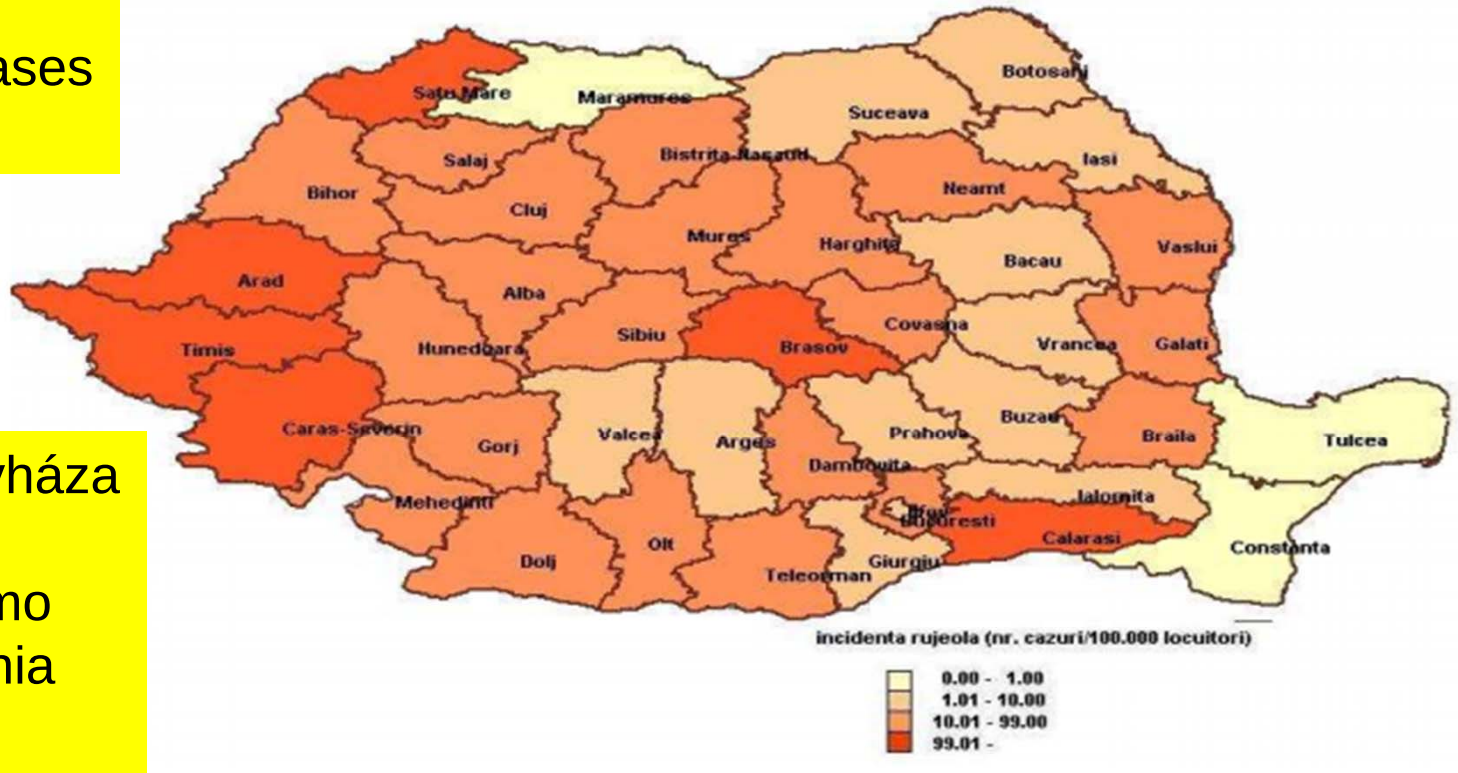
Morbilli epidemic in the neighbourhood – 34 fatal cases in Romania! (22nd Sept 2017)

Nr. doze vaccin in antecedente	Grupa de varsta										Total
	<1 an	1-4 ani	5-9 ani	10-14 ani	15-19 ani	20-24 ani	25-29 ani	30-34 ani	35-39 ani	>40 ani	
0	1771	3491	1539	664	443	257	236	183	195	141	**8920**
1	0	137	67	32	15	4	4	3	6	0	**268**
2	0	1	30	24	20	9	8	2	0	0	**94**
Necunoscut	0	5	2	0	0	0	0	0	0	0	**7**
TOTAL	**1771**	**3634**	**1638**	**720**	**478**	**270**	**248**	**188**	**201**	**141**	**9289**

Distributia geografica a incidentei rujeolei in perioada mentionata este prezentata in figura de

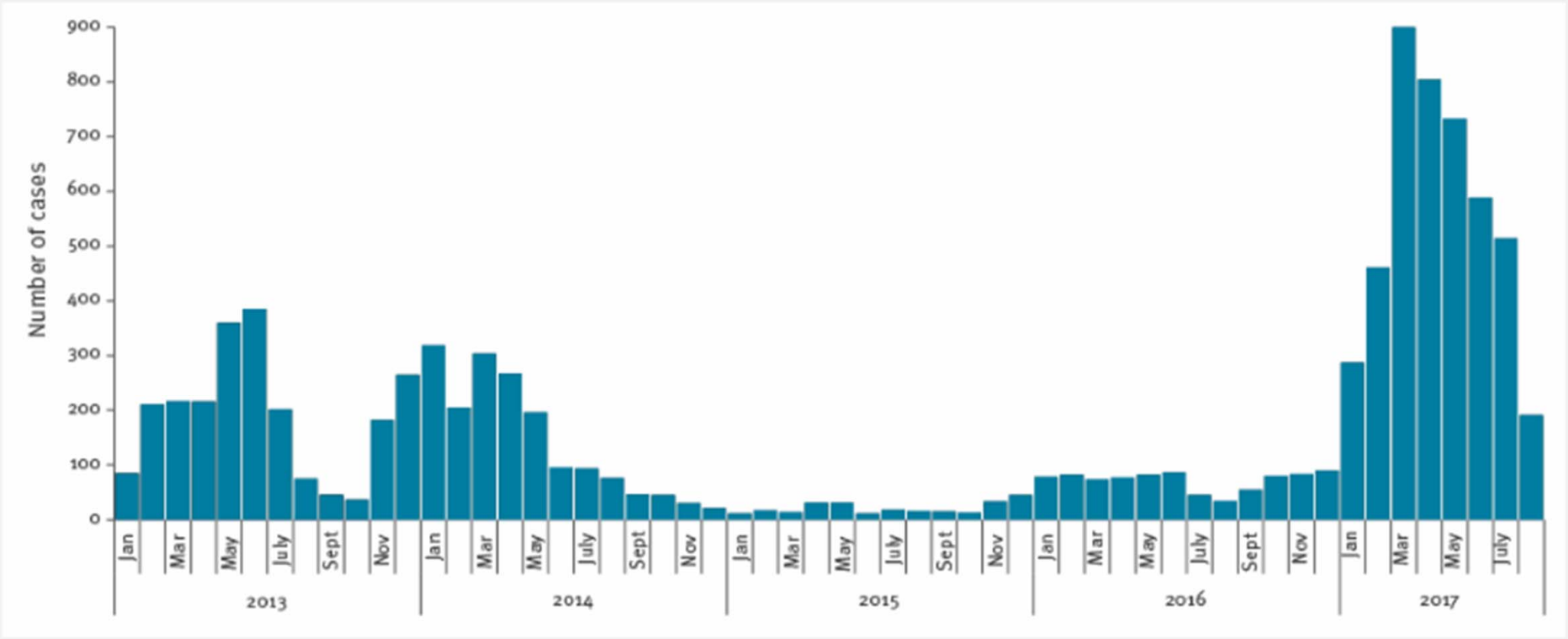
Hungary/Makó:
- March 2017
-52 suspected cases
-12 confirmed

Hungary/Nyíregyháza
-July 2017
-5 children with mo
-- Korond Romania



Measles in Italy…2017

Figure 1 Reported measles cases by month of rash onset, Italy, January 2013–August 2017 (n=9,559)



Eurosurveillance

Volume 22, Issue 37, 14/Sep/2017

Figure 2 Incidence per 1,000,000 population of reported measles cases by Region, Italy, January–August 2017

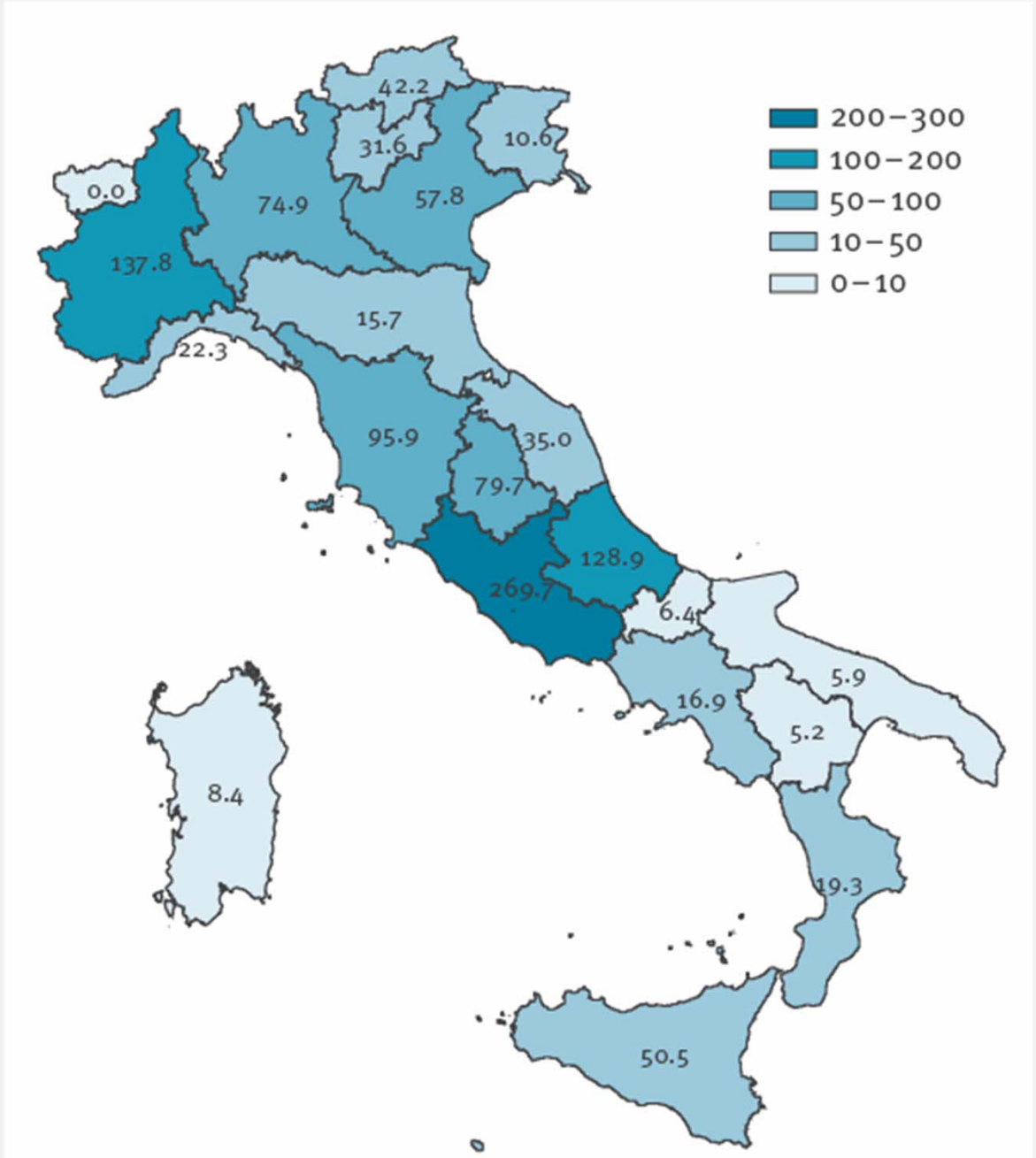


Table 2

Number and percentage of complicated cases and hospitalisations by age group, measles outbreak, Italy, January–August 2017

Age group	Number of cases	Complicated cases (at least one complication)		Cases with more than one complication		Cases hospitalised	
		n	%	n	%	n	%
< 1 year	253	63	24.9	34	13.4	140	55.3
1–4 years	543	159	29.3	87	16.0	246	45.3
5–19 years	614	169	27.5	78	12.7	201	32.7
> 20	3,065	1,180	38.5	726	23.7	1,345	43.9
Total	4,475[a]	1,571	35.1	925	20.7	1,932[b]	43.2

- **Two cases of encephalitis** were reported, one in a 37-year-old adult, and the other in a one-year-old child.
- **Three deaths** due to respiratory insufficiency occurred among children aged 16 months, 6 years and 9 years respectively. **All were unvaccinated** and one child was immunocompromised due to ongoing chemotherapy for a malignancy.

Measles was laboratory confirmed in all three children.

Overall, 43.2% (n = 1,933) of cases were hospitalised and an additional 22.4% (n = 1,005) consulted an emergency department.

Eurosurveillance

Surveillance and outbreak report

Large measles outbreak introduced by asylum seekers and spread among the insufficiently vaccinated resident population, Berlin, October 2014 to August 2015

Table

Case characteristics in a large outbreak of measles in Berlin, October 2014–August 2015 (n = 1,344)

Characteristics	Berlin resident		Asylum seeker		Unknown		Total	
	n	%	n	%	n	%	n	%
Number of cases	1,101	100	146	100	97	100	1,344	100
Male	612	55.6	76	52.0	49	50.5	737	54.8
Laboratory-confirmed	777	70.6	99	67.8	67	69.1	943	70.2
In clusters	349	31.7	107	73.3	24	24.7	480	35.7
Unvaccinated [a]	888	85.2	127	94.1	71	87.6	1,086	86.3
Hospitalised [b]	265	24.1	35	24.0	45	46.9	345	25.7
Death	1	0.1	0	0	0	0	1	0.1
	Median	IQR	Median	IQR	Median	IQR	Median	IQR
Age (years)	18	5–30	5	2–18	21	9–29	17	4–29

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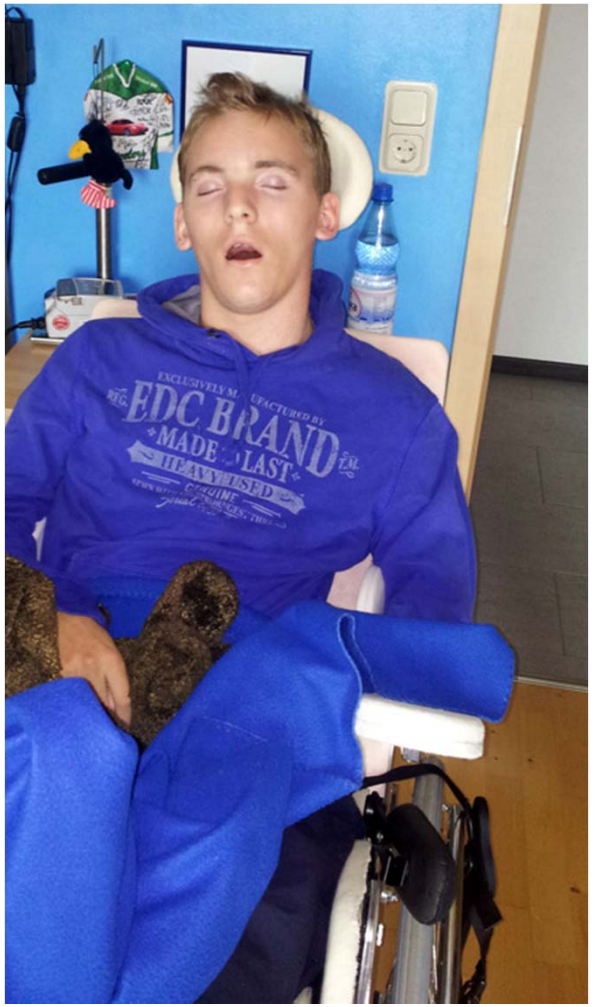
Morbilli

↓

10 years

↓

SSPE



www.vaccinestoday.eu

Table 3. Vaccinations offered to newly arrived migrants by age group (children, adolescents and adults) and site for vaccination delivery, in countries from Mediterranean Area and Black Sea Basin.

Country	Children	Adolescent	Adult	Site for Vaccine Delivery
Albania	All vaccinations according to the NIP [1]	dT, poliomyelitis, MMR	dT, poliomyelitis, MMR	Detention centres; community level
Armenia	All vaccinations according to the NIP	dT, MMR, poliomyelitis	dT, MMR	Community level
Egypt	All vaccinations according to the NIP for children less than 4 years Poliomyelitis vaccine to children at any age coming from a country at polio risk	Poliomyelitis vaccine to arrivals from a country at polio risk	Poliomyelitis vaccine to arrivals from a country at polio risk	Community level; Poliomyelitis vaccination at entry level
Georgia	Poliomyelitis vaccine to arrivals from Nigeria, Syria, Afghanistan and Pakistan	Poliomyelitis vaccine to arrivals from Nigeria, Syria, Afghanistan and Pakistan	Poliomyelitis vaccine to arrivals from Nigeria, Syria, Afghanistan and Pakistan	Entry level in airports and seaports
Israel	All vaccinations according to the NIP; Meningococcal and BCG vaccine to arrivals from Horn of Africa (BCG to children <4 years)	All vaccinations according to the NIP to adolescents aged 11–14 years; Poliomyelitis vaccine to adolescents aged 11–17 years; Meningococcal vaccine to arrivals from Horn of Africa	Meningococcal vaccine to arrivals from Horn of Africa; vaccination in case of outbreaks	Community level; Meningococcal vaccine for Ethiopian Jews at public health clinics set in Ethiopia by Israeli government

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Table 3. Vaccinations offered to newly arrived migrants by age group (children, adolescents and adults) and site for vaccination delivery, in countries from Mediterranean Area and Black Sea Basin.

Country	Children	Adolescent	Adult	Site for Vaccine Delivery
Jordan	All vaccinations according to the NIP, specially for Syrian refugees	Measles to adolescents aged 11–15 years	Tetanus to child bearing age females (15–49 years) according to NIP	Community level; Measles vaccine to people 6 months–15 years and poliomyelitis vaccine to children <5 years also in holding centres
Moldova	All vaccinations according to the NIP	All vaccinations according to the NIP	All vaccinations according to the NIP (hepatitis B vaccine to risk groups)	Community level; Poliomyelitis, DTP, MR, pneumococcal vaccine also in holding centres
Palestine	All vaccinations according to the NIP			Community level
Republic of Macedonia-FYROM	Poliomyelitis and MMR vaccine	Poliomyelitis and MMR vaccine		Entry level in two transit centres
Serbia	Poliomyelitis, DTP, MMR vaccine	Poliomyelitis, DTP, MMR vaccine	Tetanus according to NIP	Community level
Tunisia	All vaccinations according to the NIP, with particular attention to Libyan and Syrian foreigners	Poliomyelitis, DTP, MMR vaccine		

[1] NIP: National Immunization Plan.

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NIP – Hungary 2017*

- ☑ General recommendation
- ☑ Recommendation for specific groups only
- ☑ Catch-up (e.g. if previous dosed missed)
- ☐ Vaccination recommended but not funded by the National Health system

	Birth	Months						Years				
		2	3	4	12	15	18	6	11	12	13	≥ 60
tuberculosis	BCG											
diphtheria		D	D	D			D	D	d			
tetanus		TT	TT	TT			TT	TT	TT			
pertussis		acP	acP	acP			acP	acP	acp			
poliomyelitis		IPV	IPV	IPV			IPV	IPV				
Haemophilus influenzae type b infection		Hib	Hib	Hib			Hib					
hepatitis B	HepB[1]										HepB	
pneumococcal disease		PCV13[2]		PCV13[2]	PCV13[2]							PPSV23
measles						MEAS			MEAS			
mumps						MUMPS			MUMPS			
rubella						RUBE			RUBE			
human papillomavirus infection										HPV2[3]		
influenza												TIV

Schedule version date: 08.01.2015: HPV vaccination introduction ▼

Footnotes

1: Babies born to a mother infected with hepatitis B or unknown immune status will be offered a first vaccine dose within 12 hours after birth and simultaneously with HB immunoglobulin in case of HbsAg positive mother. Following vaccine doses are given 1 month later and the third dose, 6 months after first dose.
2: mandatory for those born from 30.06.2014 (schedule 2, 4, 12 months)
3: school-based vaccination campaign. 7th grade girls

*http://vaccine-schedule.ecdc.europa.eu/Pages/Scheduler.aspx

Complaints by children

In some EU Member States covered, which have established a complaint mechanism, children can only file complaints through their legal representatives (for example in Finland and Hungary). In others, such as Austria, Bulgaria or Sweden, children can lodge complaints also in their own name.

Offering child-friendly complaint mechanisms

In **Sweden**, children are provided with an opportunity to speak with the Health and Social Care inspectors alone. It is also possible to lodge complaints through the Inspectorate's website or via a special phone number.

Source: Sweden, Health and Social Care Inspectorate (Inspektionen för Vård och Omsorg, IVO)

Who is at risk of infections???

- Children in resident population ??

If paediatricians would and could reach high NIP coverage in there relevant resident populations, that would mean indirect portection for the „children on the move" as well .

- „Children on the move"??

These children should be offered all NIP vaccines in the relevant country ASAP!!!

Thank You for your attention!!

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