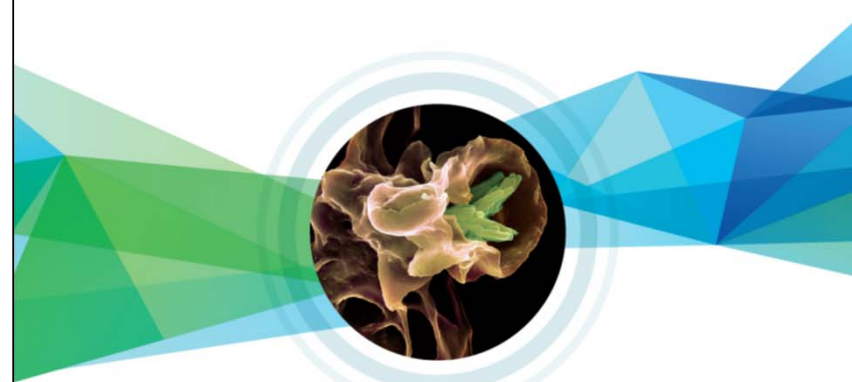




ECDC - Tuberculosis

Marieke J. van der Werf
European Centre for Disease Prevention and Control
Luxembourg May 2018



**Tuberculosis surveillance
and monitoring in Europe**

2018

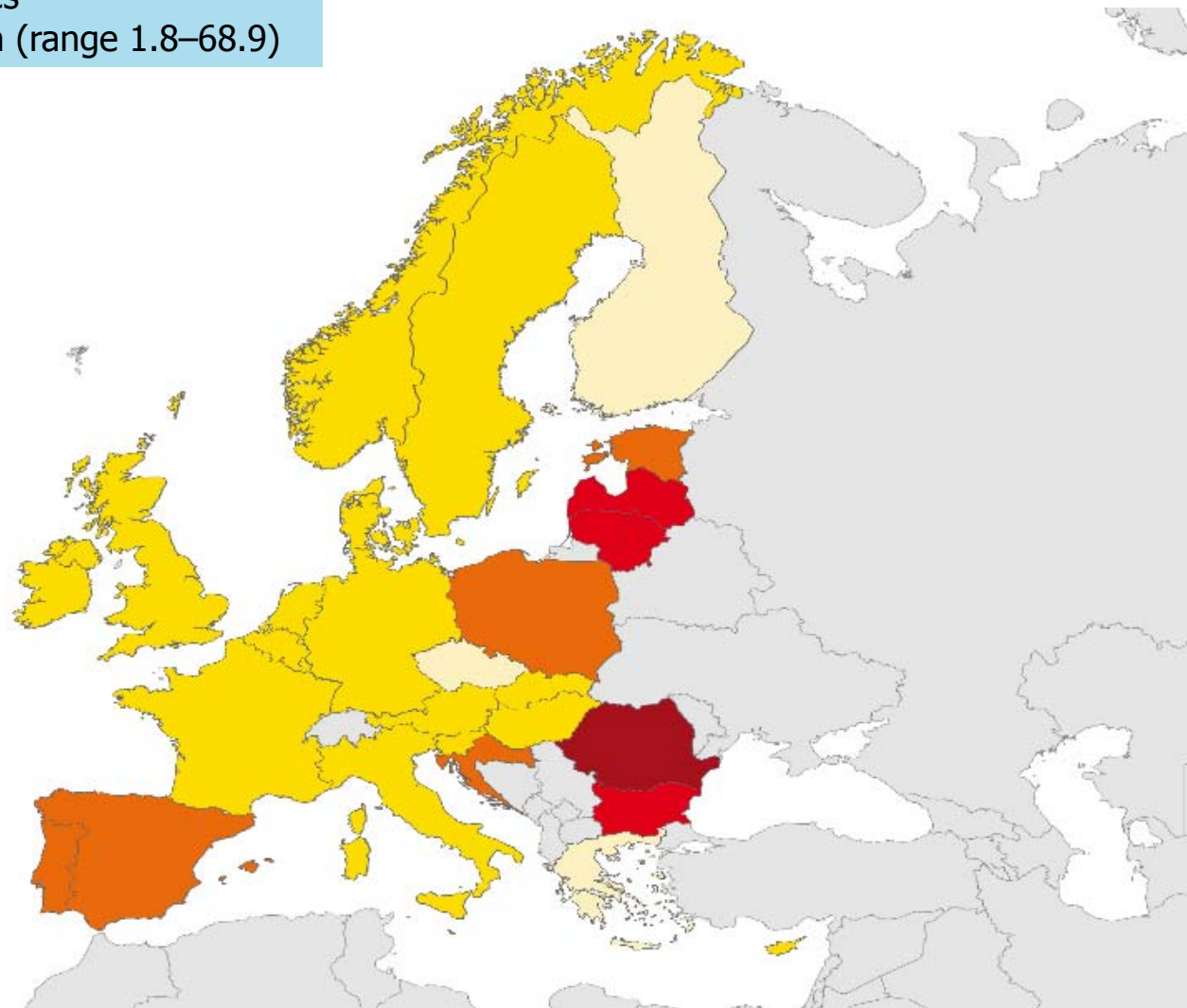
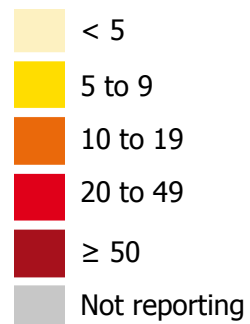
2016 data

TB notifications, EU/EEA, 2016



58 994 TB cases notified in 30 EU/EEA countries
Notification rate of 11.4 per 100 000 population (range 1.8–68.9)

Cases per
100 000 population

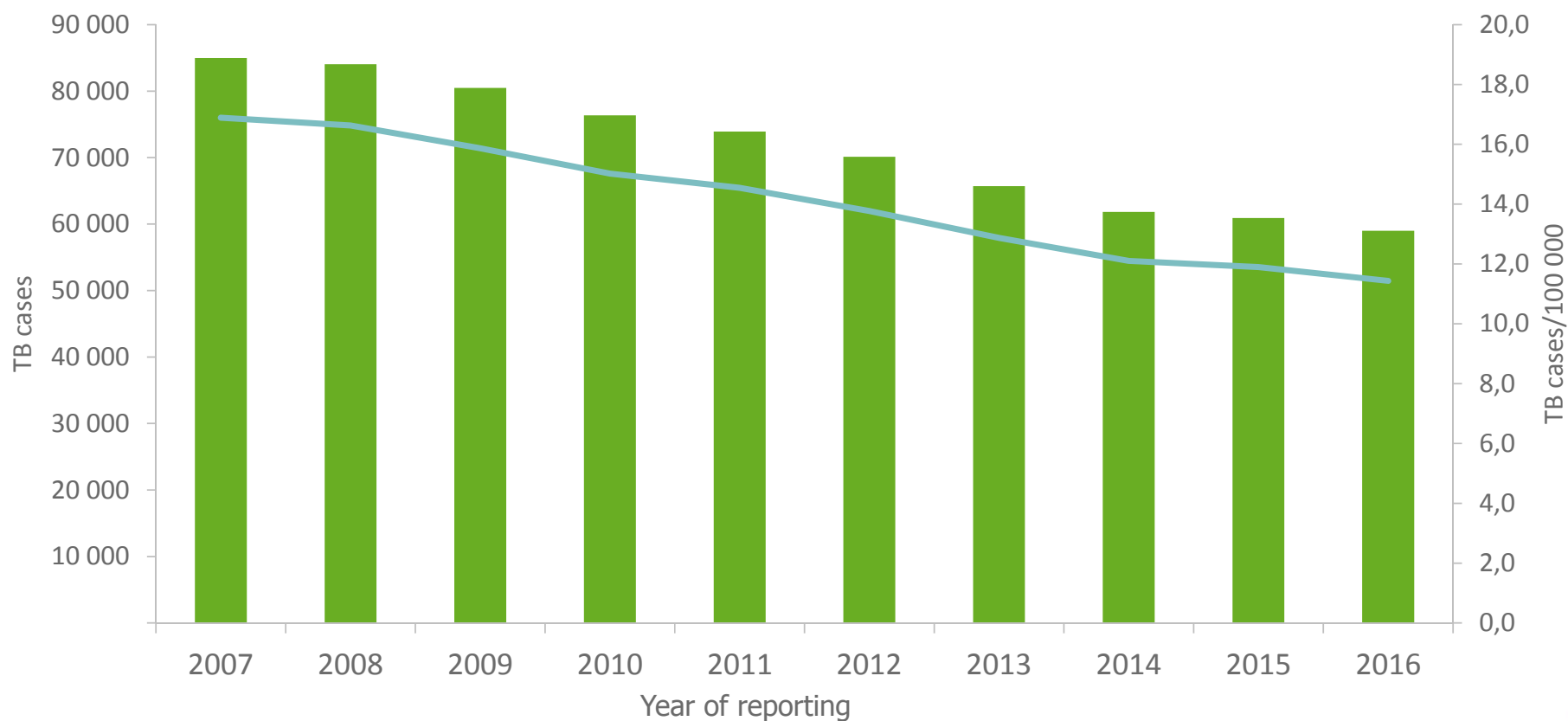


Notified TB cases, EU/EEA, 2007–2016



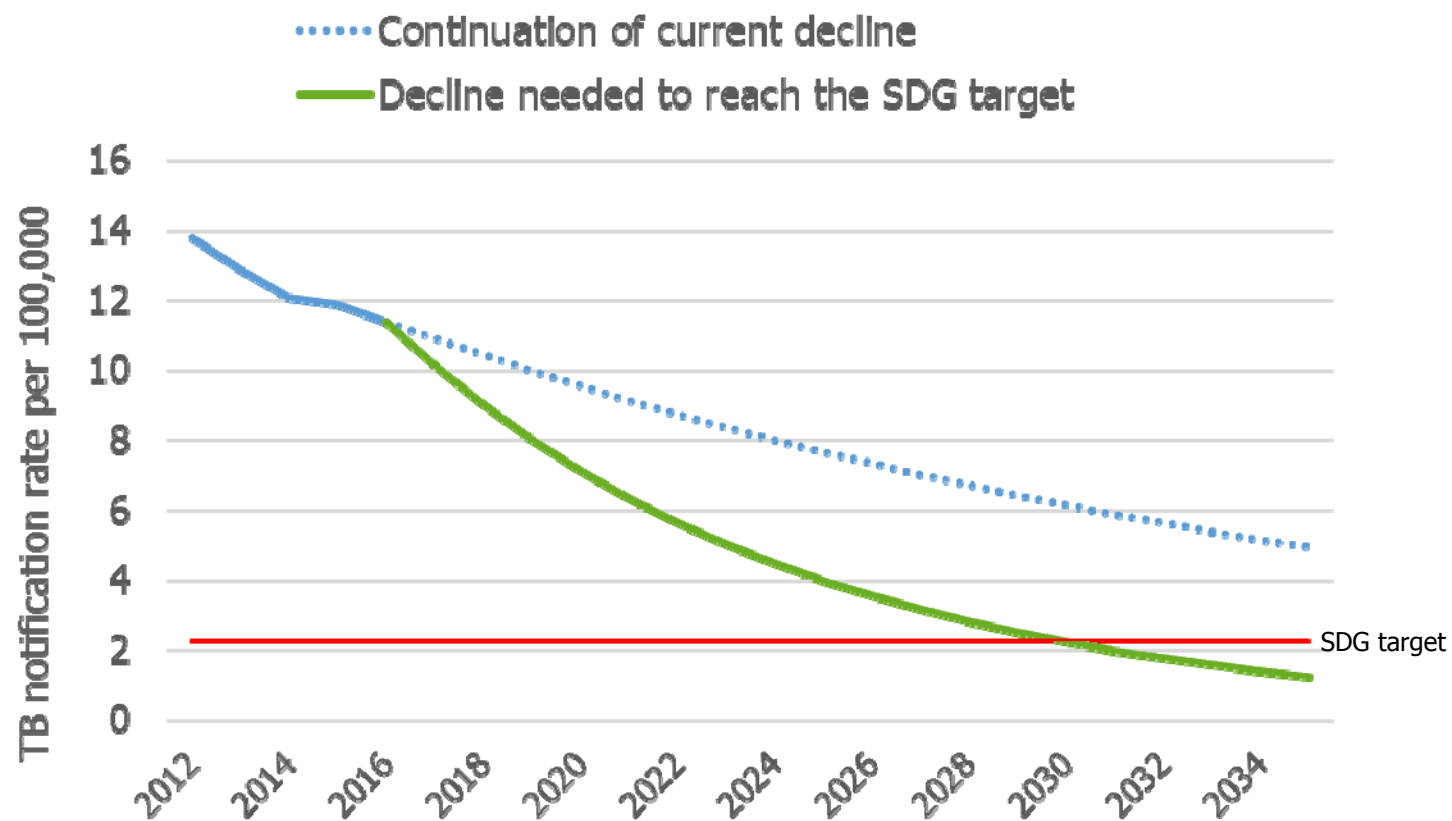
Continuous decline between 2007 and 2016:

- Number of TB cases decreased by **31%**
- Notification rate decreased by **32%**



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

SDG target: 80% reduction in TB incidence by 2030 compared to 2015

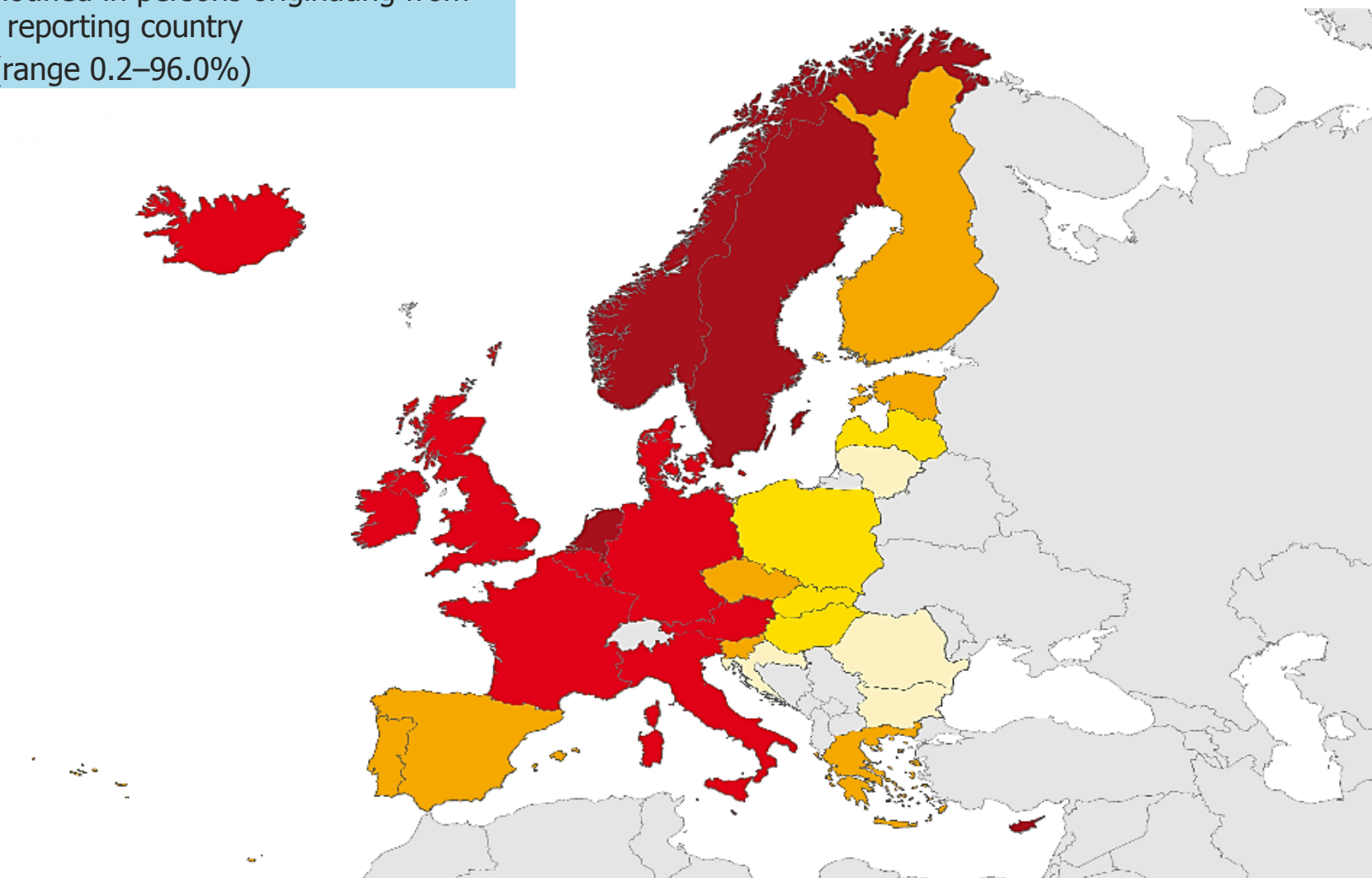
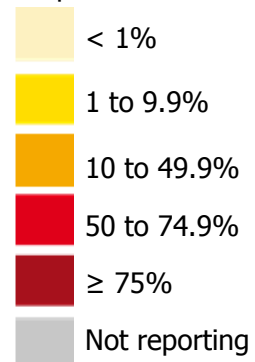


TB in persons of foreign origin, EU/EEA, 2016



19 312 TB cases were notified in persons originating from other countries than the reporting country
32.7% of all TB cases (range 0.2–96.0%)

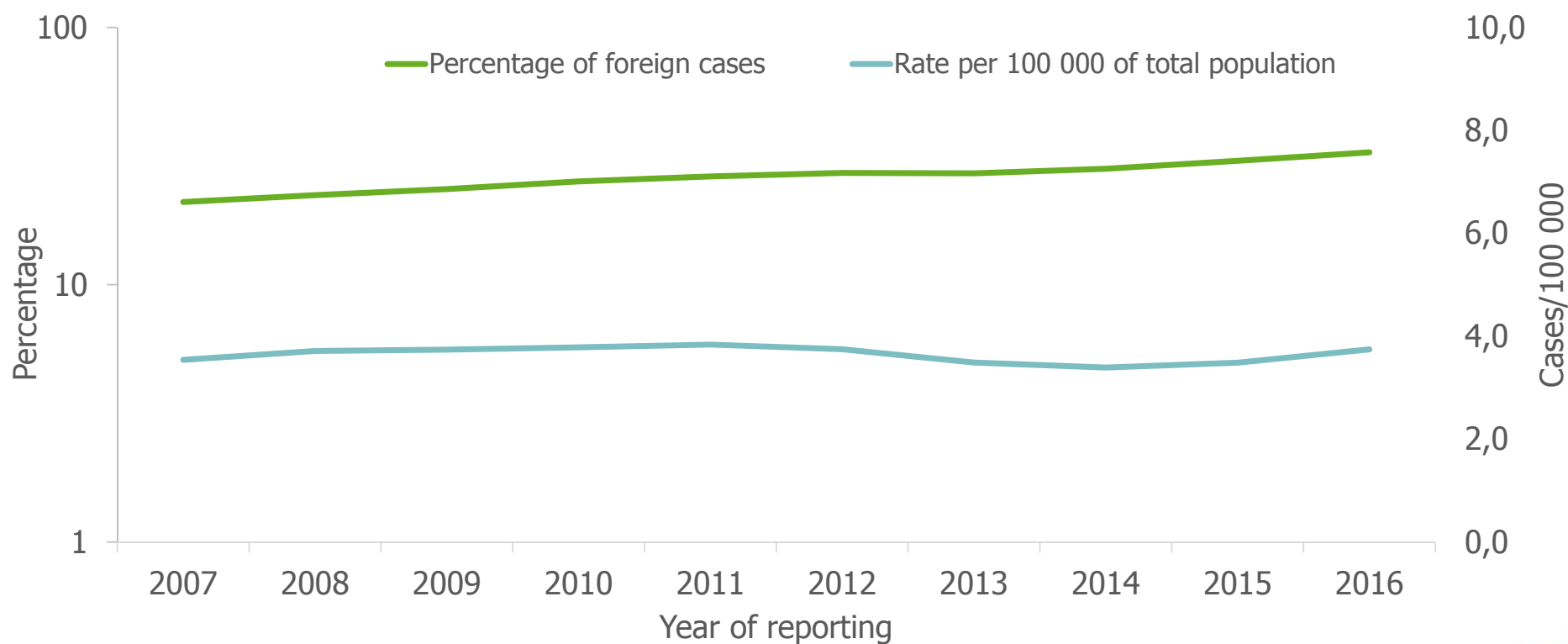
Proportion of cases



TB cases in persons of foreign origin, EU/EEA, 2007–2016



The percentage of cases in persons of foreign origin increased from **21.0%** in 2007 to **32.7%** in 2016
Rate per 100 000 total population was stable between **3.4** and **3.7**



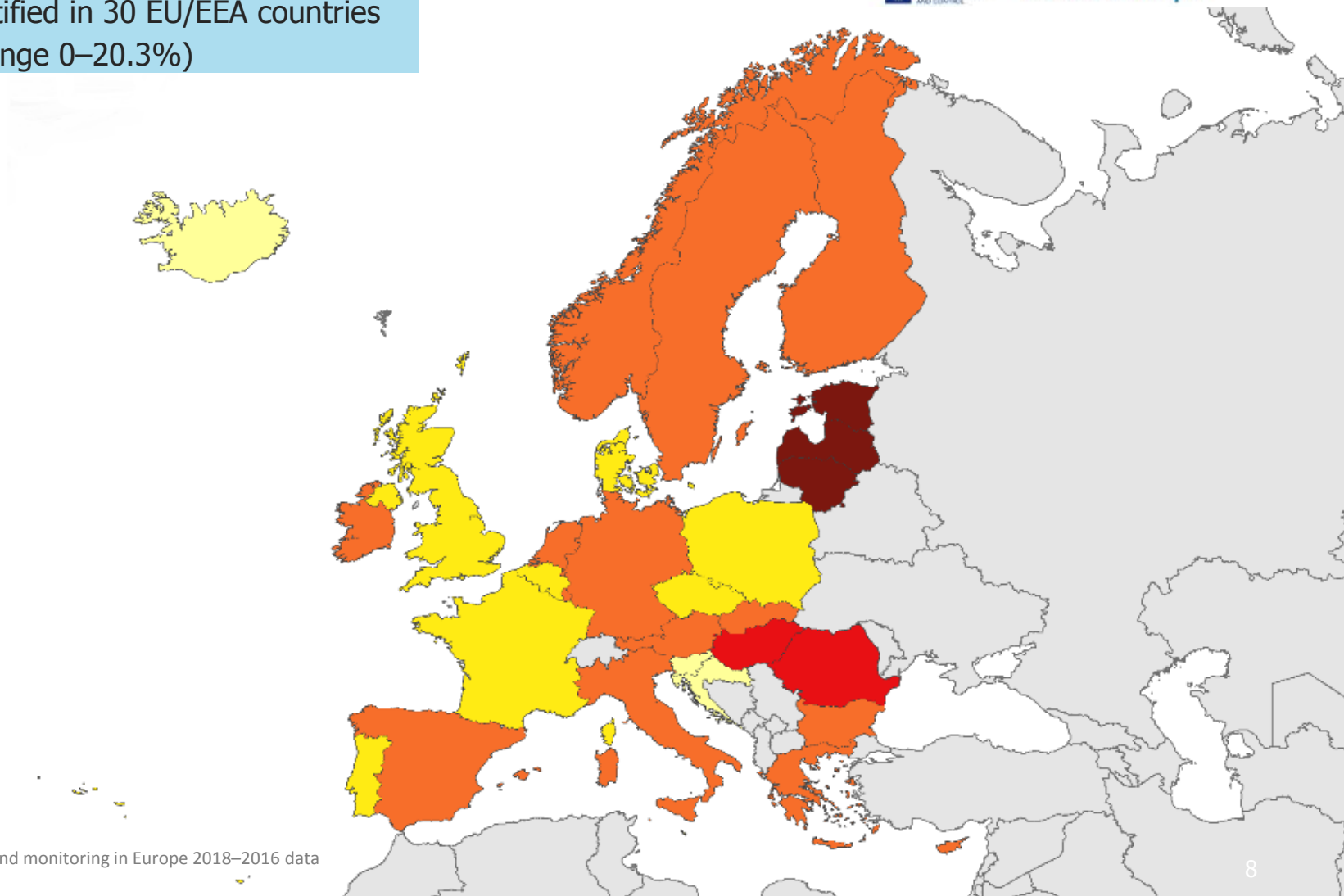
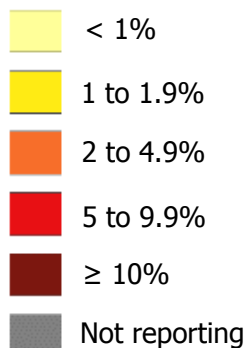
Source: ECDC/WHO (2018). Tuberculosis surveillance and monitoring in Europe 2018–2016 data

Multidrug-resistant TB (MDR TB), EU/EEA, 2016



1 322 MDR TB cases notified in 30 EU/EEA countries
3.7% of all TB cases (range 0–20.3%)

Proportion of cases



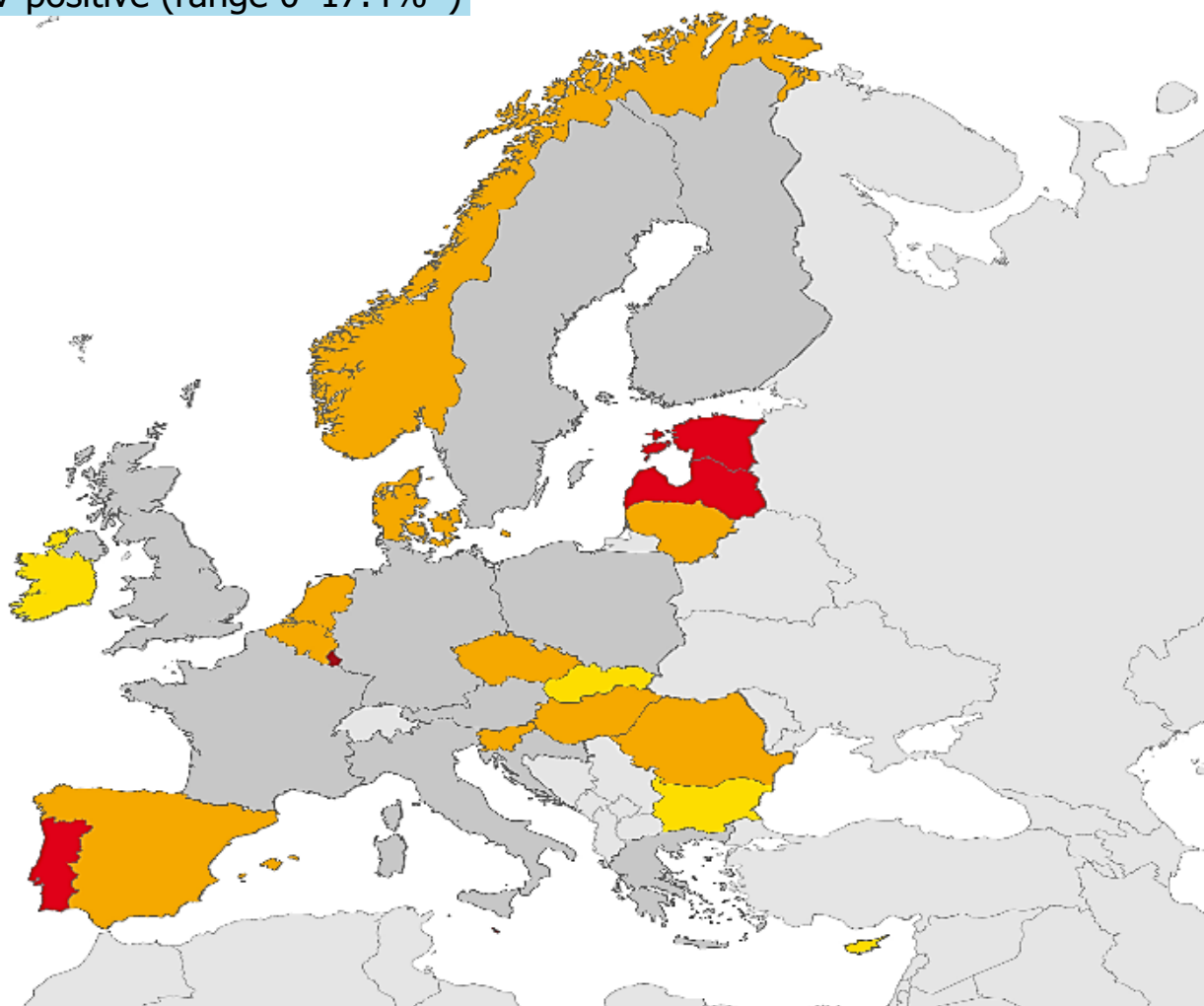
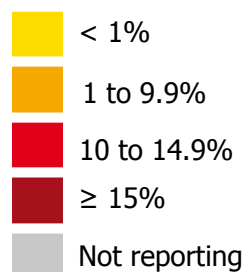
Source: ECDC/WHO (2018). Tuberculosis surveillance and monitoring in Europe 2018–2016 data

TB/HIV co-infection, EU/EEA, 2016



895 HIV-positive TB cases were notified by 20 EU/EEA countries in 2016
4.5% of TB cases with known HIV status were HIV-positive (range 0–17.4%*)

Proportion of co-infected cases



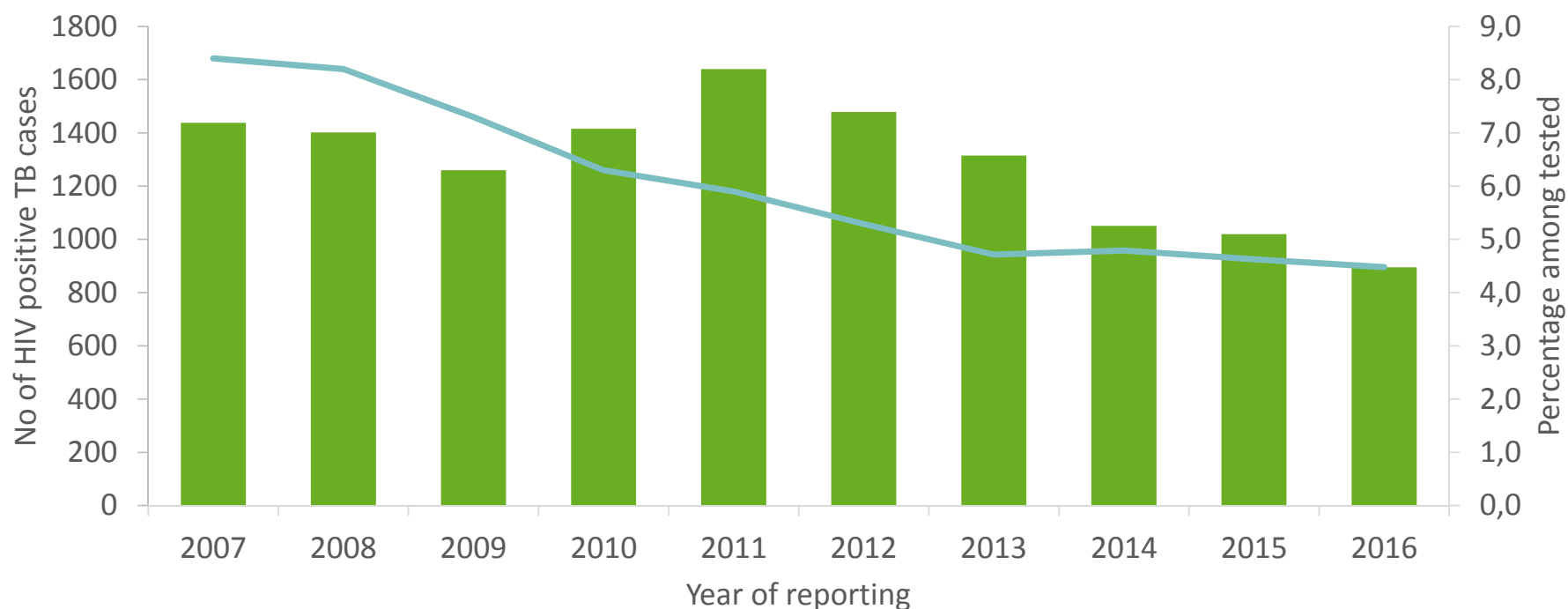
* Among countries reporting more than five HIV-positive TB cases

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

HIV-positive TB cases and percentages among all those tested, EU/EEA, 2007–2016*



The total number of HIV-positive TB cases decreased from **1 438** in 2007 to **895** in 2016
The proportion of HIV-positive TB cases among those tested decreased from **8.2%** in 2009 to **4.5%** in 2016



* Number of countries reporting HIV status increased from 14 in 2007 to 20 in 2016

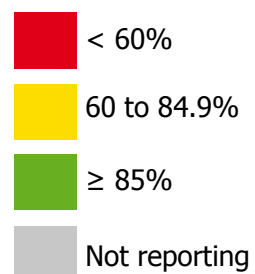
Source: ECDC/WHO (2018). Tuberculosis surveillance and monitoring in Europe 2018–2016 data

Treatment success, EU/EEA, 2016

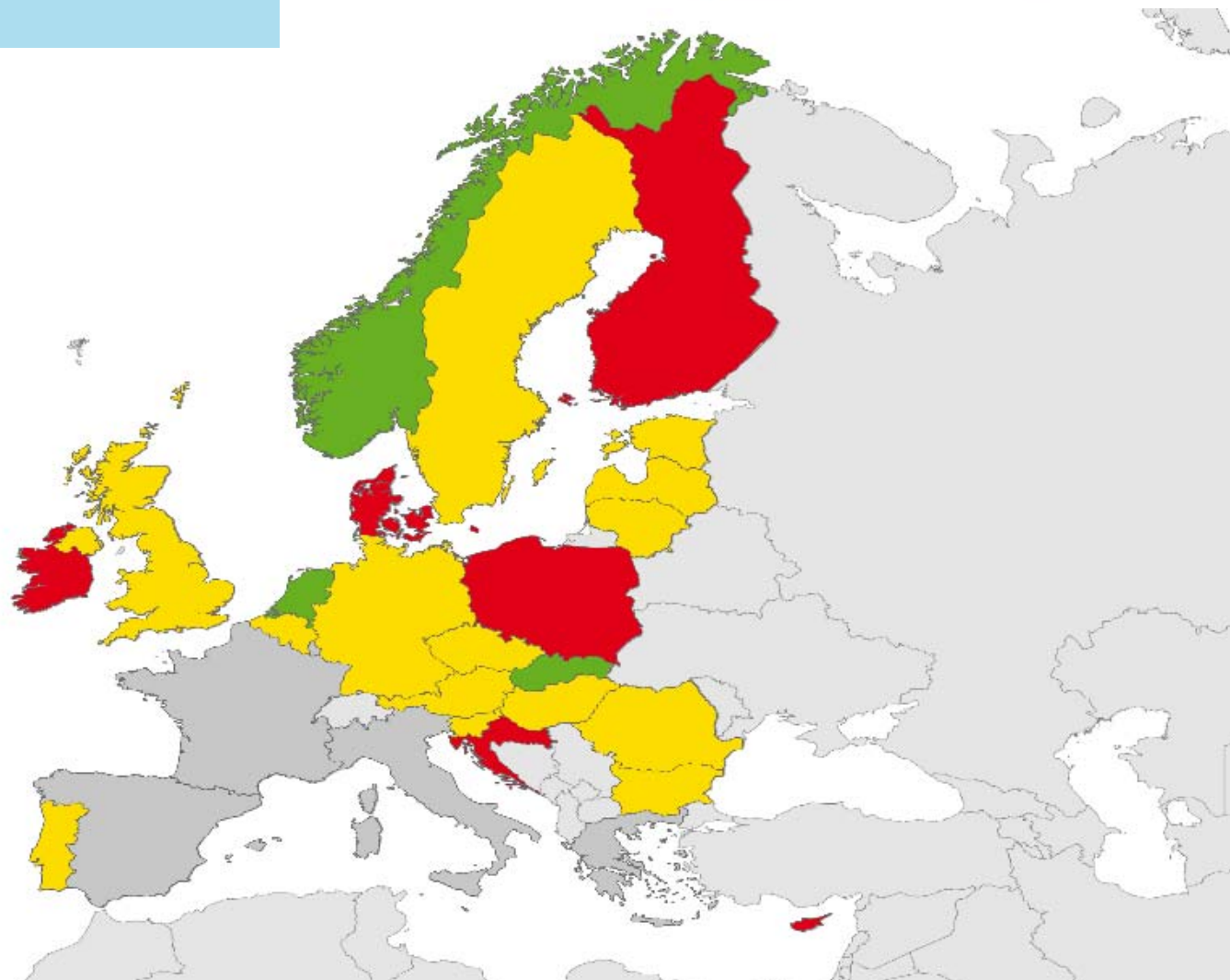


71.5% of all TB cases* had a successful treatment outcome after 12 months (range 10.3–100%)

Proportion of treatment success



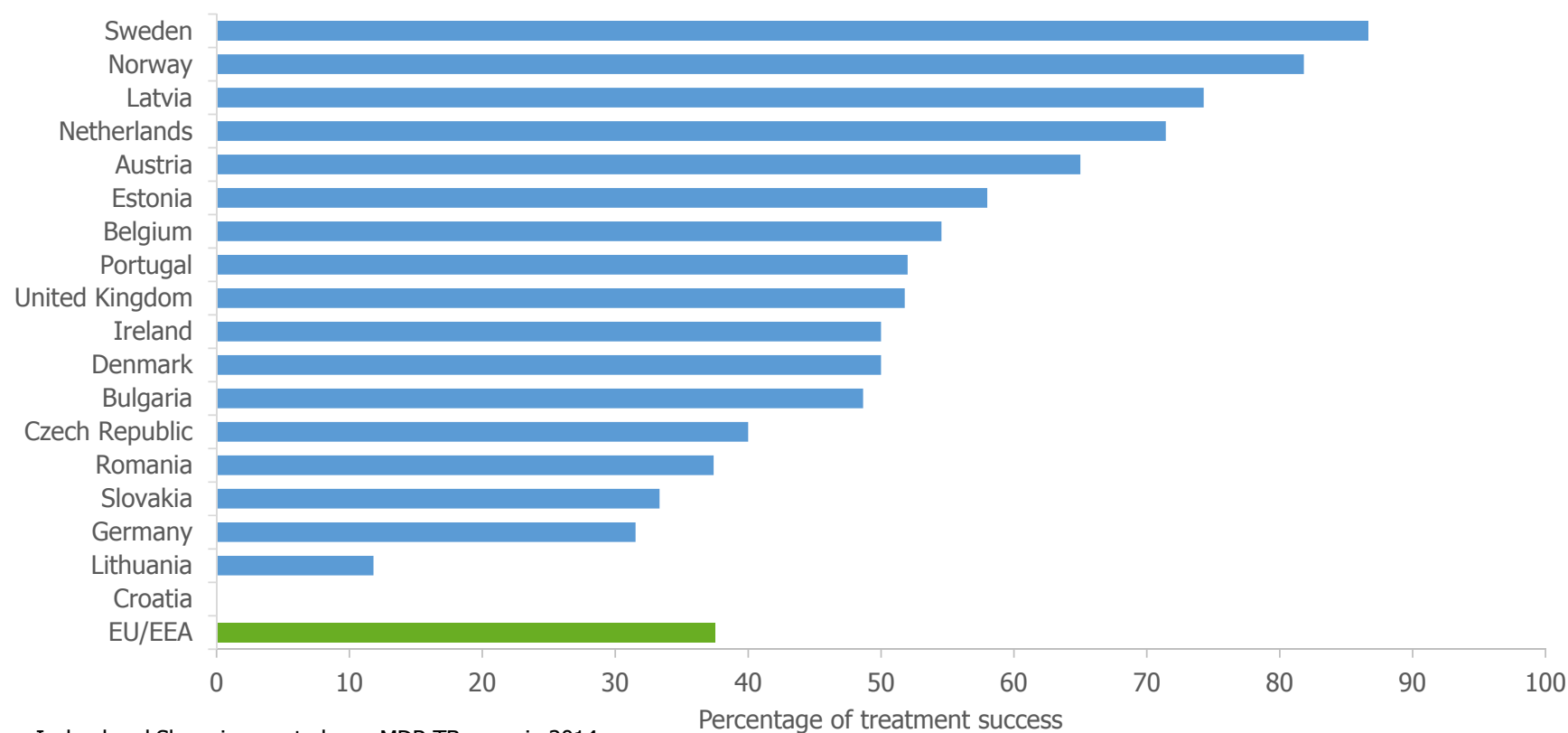
* Six EU/EEA countries did not report treatment outcome data



Treatment success as of 2016 for MDR TB cases reported in 2014*, EU/EEA



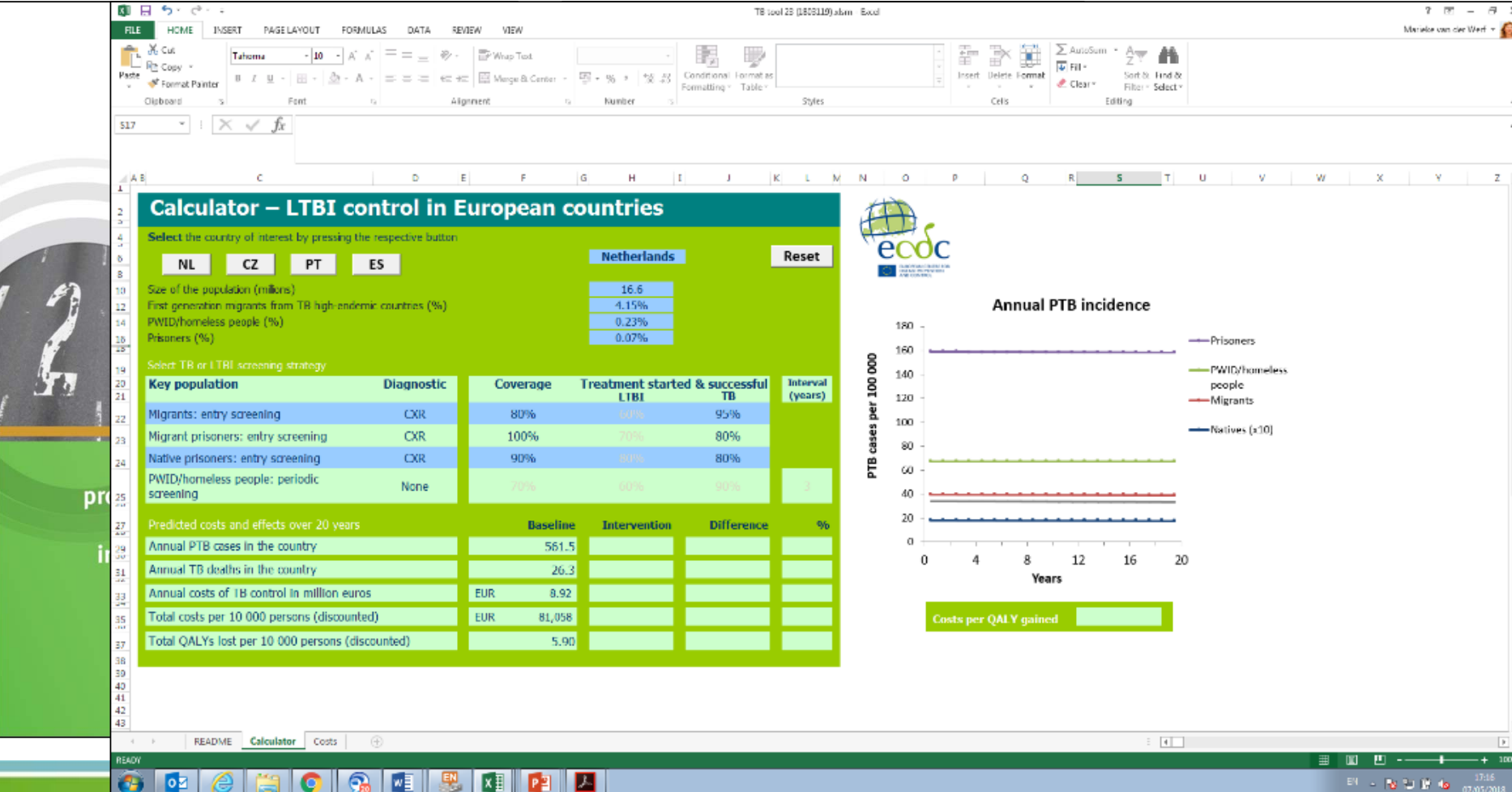
37.5% of all MDR TB cases notified in 2014 were successfully treated (range 0–86.7%)



* Cyprus, Iceland and Slovenia reported zero MDR TB cases in 2014

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

Guidance: Programmatic management of latent TB infection



Calculator – LTBI control in European countries

Select the country of interest by pressing the respective button:

NL CZ PT ES **Netherlands** Reset

Size of the population (millions): 16.6
 First generation migrants from TB high endemic countries (%): 4.15%
 PWID/homeless people (%): 0.23%
 Prisoners (%): 0.07%

Select TB or LTBI screening strategy

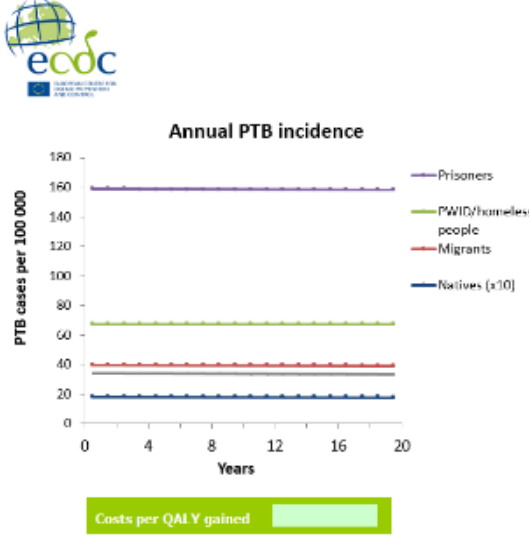
Key population	Diagnostic	Coverage	Treatment started & successful LTBI	Interval (years)
Migrants: entry screening	CXR	80%	90%	95%
Migrant prisoners: entry screening	CXR	100%	70%	80%
Native prisoners: entry screening	CXR	90%	80%	80%
PWID/homeless people: periodic screening	None	70%	80%	90%

Interval (years): 3

Predicted costs and effects over 20 years

	Baseline	Intervention	Difference	%
Annual PTB cases in the country	561.5			
Annual TB deaths in the country	26.3			
Annual costs of TB control in million euros	EUR 8.92			
Total costs per 10 000 persons (discounted)	EUR 81,058			
Total QALYs lost per 10 000 persons (discounted)	5.90			

Annual PTB incidence



PTB cases per 100 000

Years

Costs per QALY gained

Update of European Union Standards for Tuberculosis Care



EUROPEAN RESPIRATORY *journal*

FLAGSHIP SCIENTIFIC JOURNAL OF ERS

Early View

Task force report

ERS/ECDC Statement: European Union Standards for Tuberculosis Care - 2017 update

GB Migliori, G Sotgiu, S Rosales-Klintz, R Centis, L D'Ambrosio, I Abubakar, G Bothamley, JA Caminero, DM Cirillo, M Dara, G de Vries, S Aliberti, AT Dinh-Xuan, R Duarte, F Midulla, I Solovic, D Subotic, M Amicosante, AM Correira, A Cirule, G Gualano, H Kunst, F Palmieri, V Riekstina, S Tiberi, R Verduin, MJ van der Werf

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Pilot study on the use of Whole Genome Sequencing for molecular typing and characterization of *M. tuberculosis* in the EU/EEA



Correspondence

EUSeqMyTB to set standards and build capacity for whole genome sequencing for tuberculosis in the EU

In *The Lancet Infectious Diseases*, Timothy Walker and colleagues¹ reported on the use of whole-genome sequencing (WGS) for the investigation of a cross-border outbreak of multidrug-resistant tuberculosis

of WGS for molecular typing and characterisation of *M tuberculosis* strains in the EU and EEA. The project is led by the EUSeqMyTB Consortium.

The overall objective is to generate evidence on the use of WGS for a better understanding of strain diversity in multidrug-resistant tuberculosis, characterisation of emerging multi-drug-resistant clones, early detection and tracing of outbreaks, and mapping transmission routes of multidrug-resistant tuberculosis. This approach requires the establishment of analysis and

(ET, DMC); and European Centre for Disease Prevention and Control, Stockholm, Sweden (CK, MjvdW)



- 1 Walker TM, Merker M, Knoblauch AM, et al. A cluster of multidrug-resistant *Mycobacterium tuberculosis* among patients arriving in Europe from the Horn of Africa: a molecular epidemiological study. *Lancet Infect Dis* 2018; published online Jan 8. [http://dx.doi.org/10.1016/S1473-3099\(18\)30004-5](http://dx.doi.org/10.1016/S1473-3099(18)30004-5).
- 2 ECDC, WHO Regional Office for Europe. Tuberculosis surveillance and monitoring in Europe 2018-2016 data. Stockholm: European Centre for Disease prevention and Control (ECDC), 2018.
- 3 Kendall EA, Fofana MO, Dowdy DW. Burden of transmitted multidrug resistance in epidemics of tuberculosis: a transmission modelling analysis. *Lancet Respir Med* 2015; 3: 963-72.