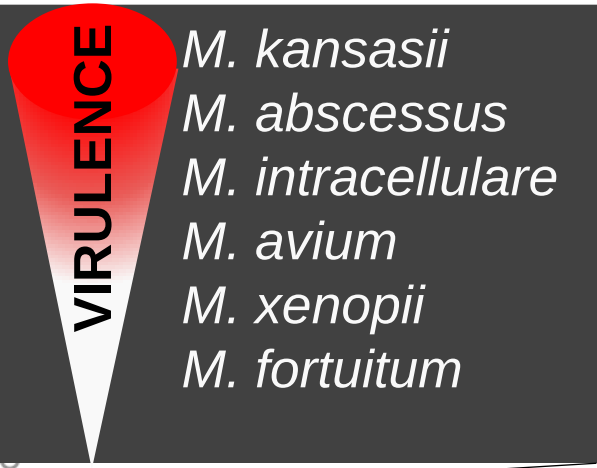
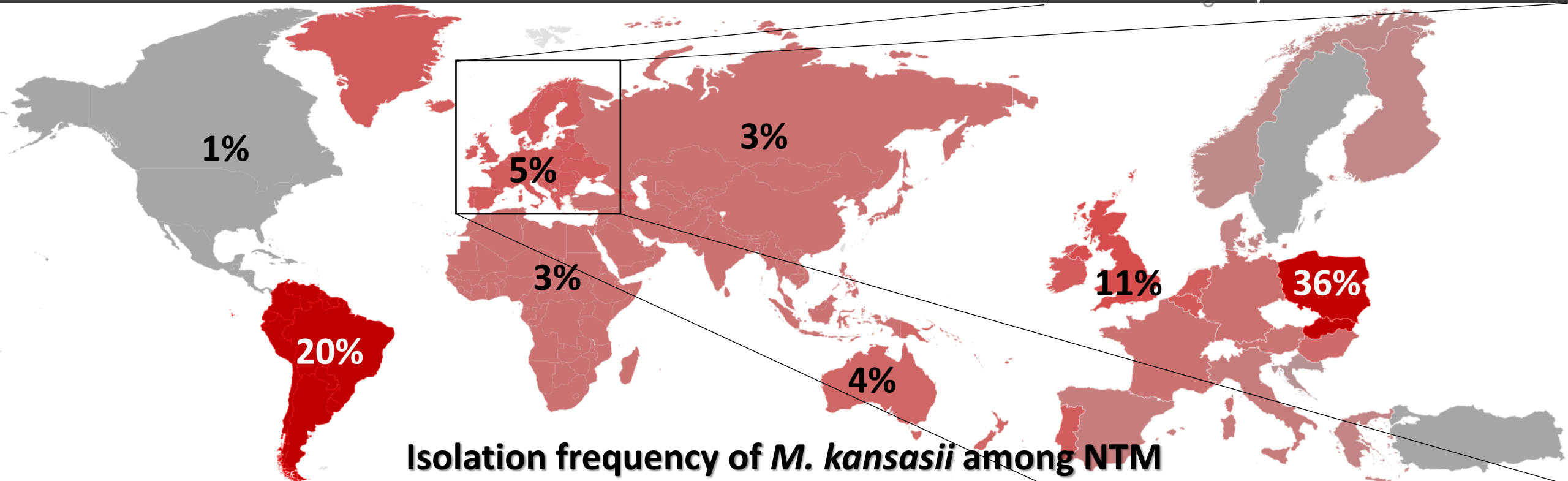
Molecular typing of *Mycobacterium kansasii* clinical isolates from Europe

28th ECCMID Madrid, Spain 21 – 24 April 2018
ESCMID EUROPEAN SOCIETY OF CLINICAL MICROBIOLOGY AND INFECTIOUS DISEASES

- *M. kansasii* is the 6th most frequently isolated non-tuberculous mycobacterial (NTM) species worldwide and one of the most virulent
- The genetic heterogeneity of *M. kansasii* is defined by the presence of seven genetic subtypes (I-VII)
- Types I and II are associated with disease, whereas types III-VII are commonly isolated from the environment and rarely cause disease





Isolation frequency of *M. kansasii* among NTM

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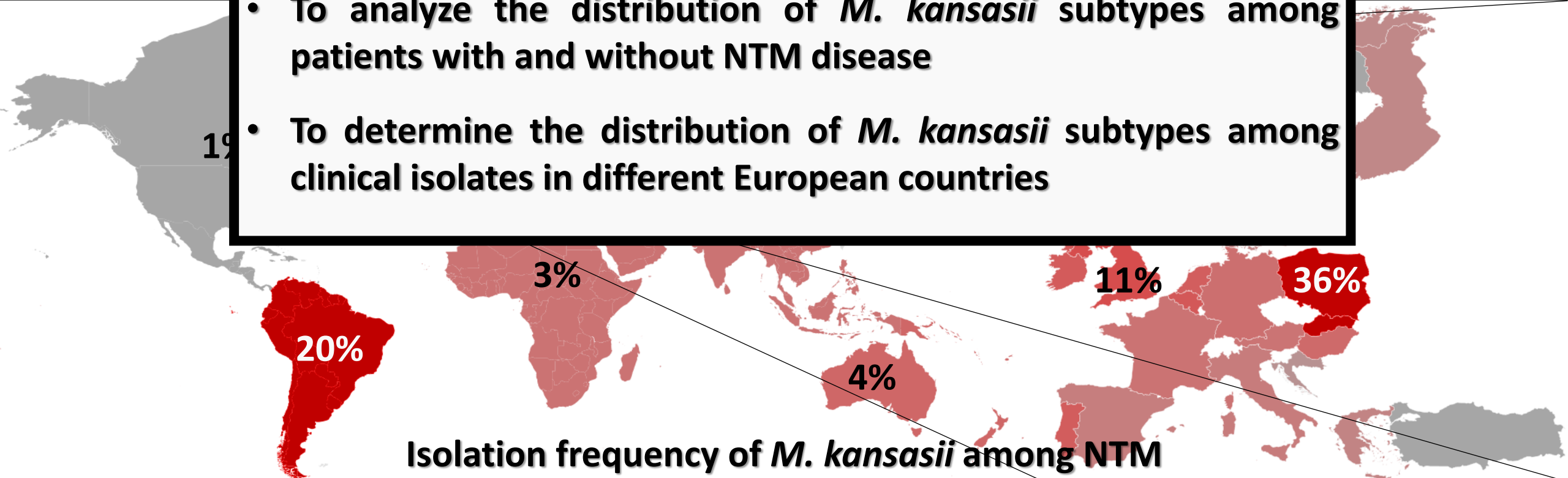
ULENCE

M. kansasii
M. abscessus
M. intracellulare
avium
xenopii
fortuitum

PURPOSE OF THE STUDY:

- To analyze the distribution of *M. kansasii* subtypes among patients with and without NTM disease
- To determine the distribution of *M. kansasii* subtypes among clinical isolates in different European countries



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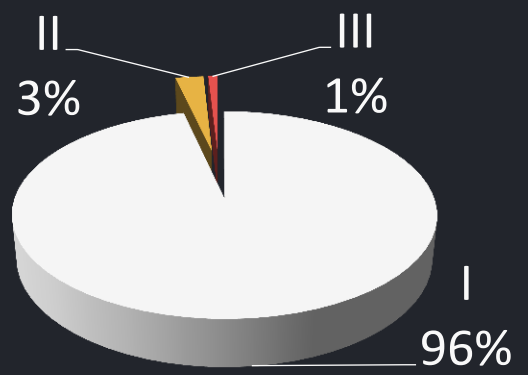
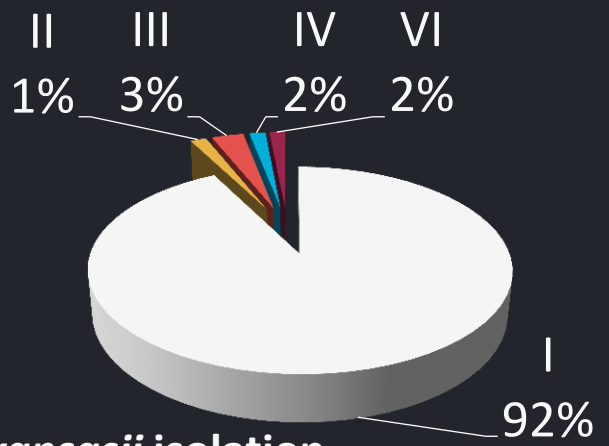
MATERIALS AND METHODS:

- **279** isolates recovered between **2000-17** from **9** European countries, i.e.: (Bulgaria, Czech Republic, Estonia, Greece, Italy, Poland, Russia, Slovenia, the UK)
- **PCR-REA-based genotyping**:
  tuf (Bakuła et. al., 2016)
  hsp65 (Telenti et al., 1993)
- The patients were categorized as having *M. kansasii* disease following the ATS (2007) diagnostic criteria

RESULTS:



***M. kansasii* disease**



***M. kansasii* isolation**

	M. KANSASII SUBTYPE DISTRIBUTION						
Country	I	II	III	IV	V	VI	**TOTAL**
Poland	140 (98.6%)	1 (0.7%)	0 (0%)	0 (0%)	1 (0.7%)	0 (0%)	142 (100%)
UK	45 (95.8%)	0 (0%)	1 (2.1%)	0 (0%)	0 (0%)	1 (2.1%)	47 (100%)
Slovenia	30 (90.9%)	3 (9.1%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	33 (100%)
Czech Republic	14 (82.3%)	0 (0%)	2 (11.8%)	1 (5.9%)	0 (0%)	0 (0%)	17 (100%)
Italy	8 (50%)	7 (43.8%)	1 (6.2%)	0 (0%)	0 (0%)	0 (0%)	16 (100%)
Russia	5 (55.6%)	4 (44.4%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	9 (100%)
Estonia	2 (28.6%)	0 (0%)	3 (42.8%)	0 (0%)	0 (0%)	2 (28.6%)	7 (100%)
Bulgaria	2 (50%)	0 (0%)	1 (25%)	0 (0%)	0 (0%)	1 (25%)	4 (100%)
Greece	4 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	4 (100%)
TOTAL	250 (89.6%)	15 (5.4%)	8 (2.9%)	1 (0.35%)	1 (0.35%)	4 (1.4%)	279 (100%)

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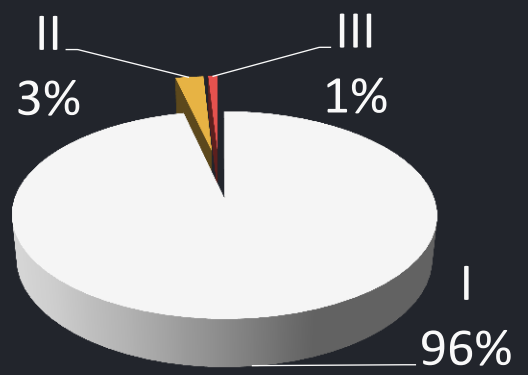

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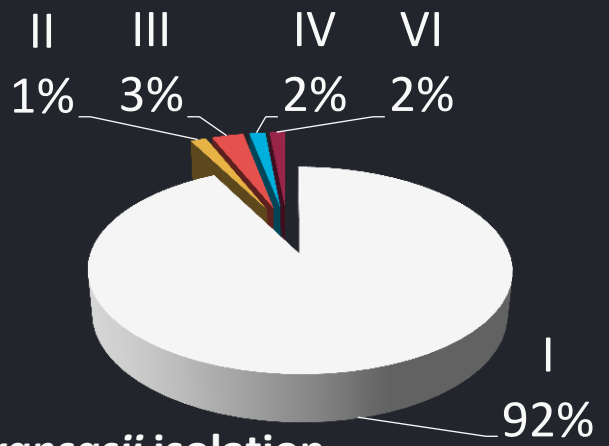

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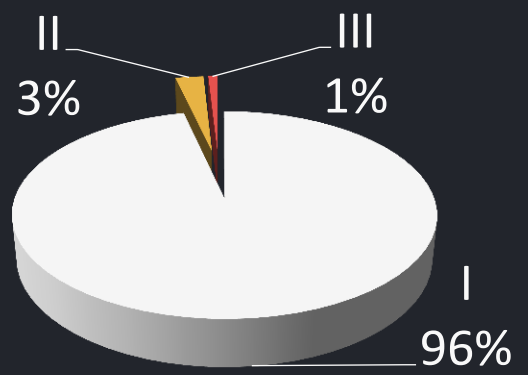

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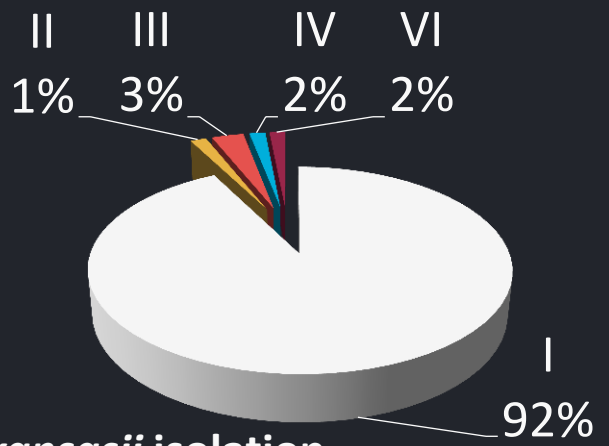

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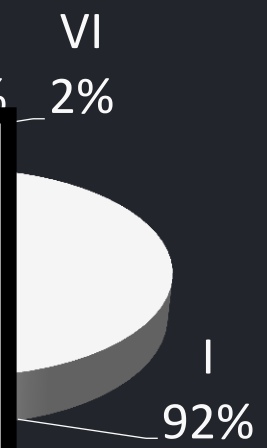

CONCLUSIONS:

- **Subtypes I, II, and III were identified in both disease-related and isolation (non-disease) cases**
- **Subtype I accounted for nearly 90% (250/279) of *M. kansasii* isolates**
- **Subtyping does not permit differentiation between isolates of clinical relevance and those representing isolation**
- **The genetic diversity of the European *M. kansasii* population shows regional variation**

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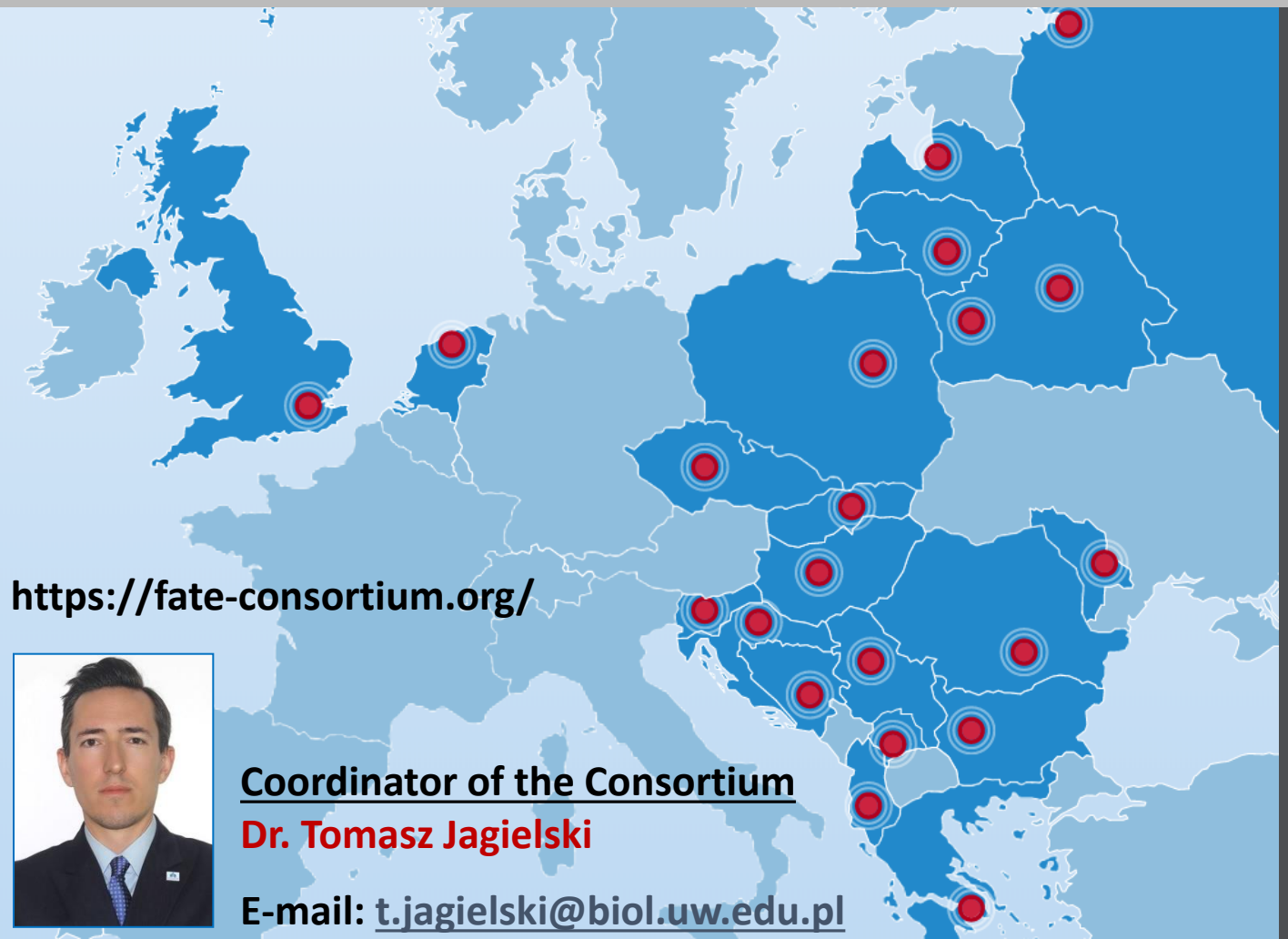
FIGHT AGAINST TUBERCULOSIS IN CENTRAL & EASTERN EUROPE

International Research Consortium on Tuberculosis and Other Mycobacterial Diseases



https://fate-consortium.org/

Coordinator of the Consortium

Dr. Tomasz Jagielski

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