

MAPPING CLIMATE CHANGE VULNERABILITIES FOR INFECTIOUS DISEASES IN EUROPE

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Background and Aims: Global climate change can shift the distribution of infectious diseases. Europe has a number of distinct climatic regions with specific climate change vulnerabilities. The quantitative outcome of these impacts on infectious diseases is less than certain.

Methods: Two surveys were conducted, one in 2007 and one from 2009/2010, with national infectious disease experts from 29 EEA countries. The aim was to capture their assessment of the projected epidemiologic situation for vector-, food-, water-, and rodentborne microorganisms under climate change scenarios.

Results: The large majority of experts agreed with the epidemic potential of these pathogens as a result of climate change. The proportion of countries reporting concerns was 83% for vectorborne; 68% for waterborne; 70% for foodborne; and 68% for rodentborne diseases. Specifically, 83% of countries were concerned about borreliosis; 69% about West Nile fever; 63% about tick-borne encephalitis; 62% about leptospirosis and 60% about salmonellosis. Observed changes in geographic distribution, seasonality, altitude and latitude were mapped by country. Planning and preparedness activities were captured as part of the survey along with surveillance activities for these pathogens. A number of shortcomings and deficiencies were identified that lend themselves to adaptation interventions.

Conclusion: In the absence of sufficient scientific data on climate change impacts on infectious diseases we resort here to an expert appraisal of projected changes in disease distribution. We map the landscape of this assessment and conclude that scarce resources can be allocated more effectively by conducting impact, vulnerability and adaptation assessments, on a regional or national scale. Surveillance activities should be tailored to the most appropriate region, season, and pathogen and guide strategic adaptation to climate change.