

# TOOLS FOR ADAPTING TO INFECTIOUS DISEASE IMPACTS FROM CLIMATE CHANGE

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**Background and Aims:** Europe will endure differential impacts from climate change with specific vulnerabilities in each biogeographic region. The dynamics of infectious disease transmission are intricate in their own right but particularly so under climate change scenarios when distribution and transmission patterns are projected to shift.

**Methods:** The European Centre for Disease Prevention and Control (ECDC) has developed three tools for adapting to these impending challenges.

**Results:**

1) Knowledge mapping for climate change and food and waterborne diseases (FWD) Information (key facts) was extracted from peer-reviewed 722 relevant publications for the period 1998 to 2009 and entered into an electronic knowledgebase. Key facts (~ 50,000 words) pertaining to temperature, precipitation, water, food, etc. for 6 selected pathogens were scrutinized, evaluated and compiled according to exposure pathways. Electronic data mining can facilitate management of future threats from infectious diseases.

2) A tool for Quantitative Microbial Risk Assessment (QMRA) for climate change and FWD ECDC has developed a highly versatile decision support tool to estimate infection risks from climate change. Through QMRA of FWD this tool can assist decision makers in prioritizing different adaptation options. The tool includes a total of 13 QMRA combinations, each existing of consecutively linked modules selected from a total of 22 modules which can be run under current location-specific climate conditions; projected climate; or specific conditions depending on the selected modules.

3) A handbook for vulnerability, impact and adaption assessment of climate change health threats from infectious diseases

ECDC has developed a toolkit with a set of decision-making algorithms to help assess vulnerabilities, impacts and adaptation. Criteria for evaluating health and economic variables and options for monitoring and evaluation are presented to guide prioritisation of adaptation strategies.

**Conclusions:** These three tools can help public health practitioners allocate scarce resources under climate change conditions.