

BETTER WEATHER FORECASTS = BETTER HUMAN HEALTH? YES, WITH TRIGGER(S)



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1. INTRODUCTION

- As the impacts of climate change on human health become increasingly evident, so does the need for a **systemic and interdisciplinary understanding** on the climate-health connection.
- Achieving such an understanding is key to the development of effective and rational adaptation plans, including those involving the creation of **weather forecasts-driven systems** that can increase the preparedness and response to health hazards.

2. BRIDGING THE GAP

The Horizon Europe project TRIGGER (SoluTions for mltiGatinG climate-induced hEalth thReats) aims to generate and disseminate information about upcoming conditions detrimental to human health via an innovative prototype that integrates **state-of-the-art climate and weather indicators** with **personal exposure monitoring data** at multiple Climate-Health Connection (CHC) Labs across Europe.



WEATHER AND CLIMATE HAZARDS



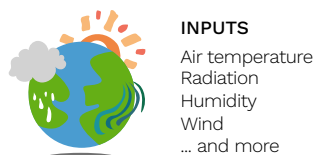
IMPACTS ON HUMAN HEALTH



LOCATION DIVERSITY

3. FORECASTING WEATHER-INDUCED HEALTH HAZARDS

We have implemented an **operational chain** that predicts health-impacting weather and climate variables twice a week. The forecast information is tailored to each Lab, spans from the short-range (hours) to sub-seasonal lead-time and is disseminated to health professionals automatically.



INPUTS

Air temperature
Radiation
Humidity
Wind
... and more



ECMWF ensemble forecasts
9-km resolution, hours up to 15 days

• DISPLAYS • DATA
• GRAPHS • DECISIONS

VARIABLE	FORCING MODEL	SPATIAL RESOLUTION	TEMPORAL RESOLUTION
Heat and cold stress	IFS	9 Km	1h (10 days)
UV index	IFS/CAMS	40 Km	1h (5 days)
Air quality	CAMS	10 Km	1h (4 days)
Allergenic pollen	CAMS	10 Km	1h (4 days)

4. THE TRIGGER SYSTEM

As soon as a hazard potentially detrimental to human health is forecast at a Lab, notification is sent to the Lab with detailed information (e.g. timing, intensity) on the upcoming event. Medics at the Lab's hospital receive the forecasts while recording the impact of the hazard on hospital admissions, as well as the extent to which people being affected have any pre-existing medical conditions. By merging weather and health information, periods when human health deteriorates because of the hazard are identified and used to define **health-meaningful thresholds that trigger actions against the hazard**.



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