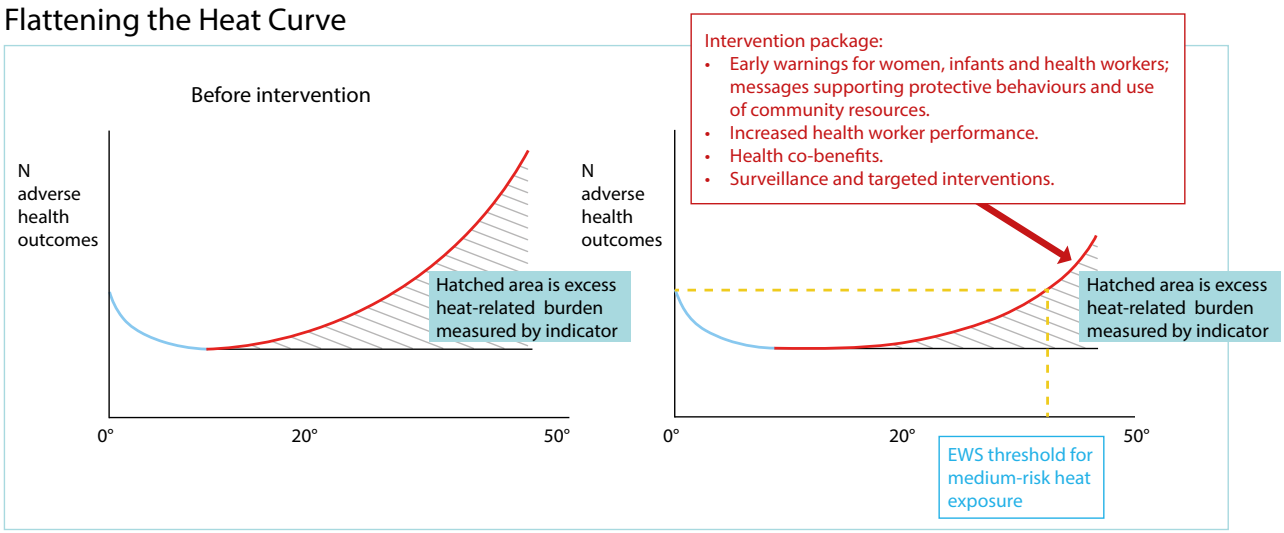
# HEAT INDICATORS FOR GLOBAL HEALTH

Monitoring, Early Warning Systems and Health Facility Interventions for pregnant and postpartum women, infants and young children and health workers

# PROJECT SUMMARY

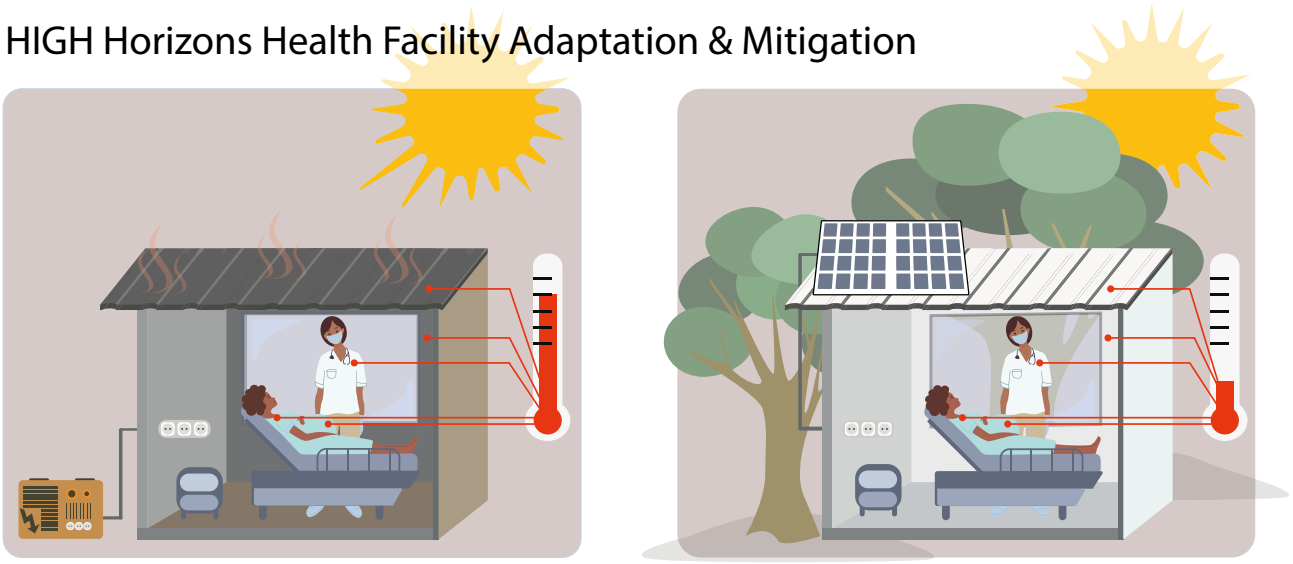
The HIGH Horizons project addresses a number of key knowledge gaps around the quantification and monitoring of direct and indirect impacts of heat exposure on maternal, newborn and child health. In the project, pregnant women, infants and health workers serve as sentinel populations for tracking climate change impacts, adaptations and co-benefits. These are key populations and protecting them is critical for creating a living and working life that is health promoting, and for ensuring a healthy future for the next generation. The project includes eleven partners across ten countries in Europe and Africa and encompasses activities in both the EU and sub-Saharan Africa.

We quantify and monitor direct and indirect health impacts of extreme heat; test a personalised Early Warning System (EWS); and implement integrated adaptation-mitigation actions in health facilities.




Analyses of heat impacts and data science predictive modelling using health data from Sweden, Italy, Greece, Kenya and South Africa underpin all activities. Specific biomarkers are measured during pregnancy and in infants in a prospective mother-child birth cohort in Greece to explain the role of heat exposures on adverse health effects. These analyses and systematic reviews inform testing and selection of global, EU and national indicators as well as cut-off thresholds for the EWS, stratified by risk groups. Through a smartphone app (ClimApp-MCH) the EWS delivers notifications and setting-specific messages, co-designed locally. The app will be evaluated among 600 mothers and infants in Sweden, South Africa and Zimbabwe, from antepartum through 12 months of infant age.

## HIGH Horizons Health Facility Adaptation & Mitigation



Simultaneously, we document impact of heat exposure on health worker wellbeing, health, productivity and quality of care, including through time-motion studies. Modifications to health facilities are co-designed and modelled to reduce heat exposure for health workers and to limit facilities carbon emissions. Health worker outcomes and facility emissions are compared before and after the mitigation and adaptation interventions of which the cost-effectiveness is evaluated.

Throughout we engage relevant stakeholders in both conduct of the research and dissemination of project findings, prioritising country partners, EU and global policy makers and leveraging existing networks.

# OBJECTIVES

The HIGH Horizons project has five specific objectives:

1. Identify and select suitable indicators for quantifying and monitoring the global, EU and national-level health impacts of extreme heat among pregnant and postpartum women, newborns and nfants in Europe and sub-Saharan Africa;
2. Develop and test an Early Warning System using a smartphone app to provide individualized heat stress warnings, and locally adapted messaging for protecting pregnant and postpartum women, infants and health workers;
3. Identify cost-effective, integrated adaptation-mitigation interventions to alleviate heat impacts on health workers, and to reduce carbon emissions associated with health care;
4. Support global and EU climate policies and activities on the monitoring of direct and indirect impacts of climate change on health, and the strengthening of Early Warning Systems through guidance documents, and risk assessment and cost-benefit analysis tools.
5. Investigate the biological and thermal physiological pathways from heat effects on adverse health outcomes among pregnant women and their infants in the first year of life.

These five objectives are addressed in the work packages around assessment, design, implementation and evaluation, and in the cross-cutting work packages for project management and dissemination and communication.

## PROJECT INFORMATION

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The project runs from 1 September 2022 till 31 August 2026.

## PROJECT CONSORTIUM

Read more on
www.high-horizons.eu

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