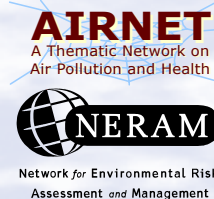




# PHEWE

## Assessment and Prevention of acute Health Effects of Weather conditions in Europe



### BACKGROUND

Epidemiological studies indicate that exposure to extreme weather conditions (e.g. warm and cold temperatures) are associated with an increase in mortality for cardiovascular and respiratory diseases. A large scale study in areas with different meteorological conditions applying a standardised methodology will produce estimates of the effects of environmental variables on health for Europe and contribute to policy development and public health decision making.

### AIMS

The objective of this study is to evaluate the association between weather conditions and acute health effects (mortality and hospital admissions) in 17 European cities, both during hot and cold season. The study will experiment the use of Heat/Health Watch-Warning Systems (HHWWS) in European cities, and provide information for public health policies on prevention and implementation of adaptive actions.

### SPECIFIC OBJECTIVES

- ✓ Create a European database of meteorological variables, health indicators, and air pollution data.
- ✓ Compare and classify specific weather conditions in different European cities according to selected meteorological indicators.
- ✓ Perform city-specific and pooled analysis on the effects of weather on daily mortality and daily hospital admissions, using a time-series approach (seasonal analysis).
- ✓ Analyse the role of air pollution as potential effect-modifier on weather related health effects.
- ✓ Implement and evaluate Heat/Health Watch Warning systems (HHWWS) to predict and to alert the population of oppressive weather conditions related to adverse health effects in 5 pilot cities (Rome, Paris, Barcelona, London, Budapest).
- ✓ Develop a framework of public health intervention strategies to minimise adverse health effects in the participating cities and in Europe.
- ✓ Disseminate the results to various groups: policy makers, health and environmental scientists, national, regional, and local governments, and the general public.

### PROGRESS DURING THE FIRST YEAR

(Project duration: August 1<sup>st</sup>, 2002 – July 31<sup>st</sup>, 2005)

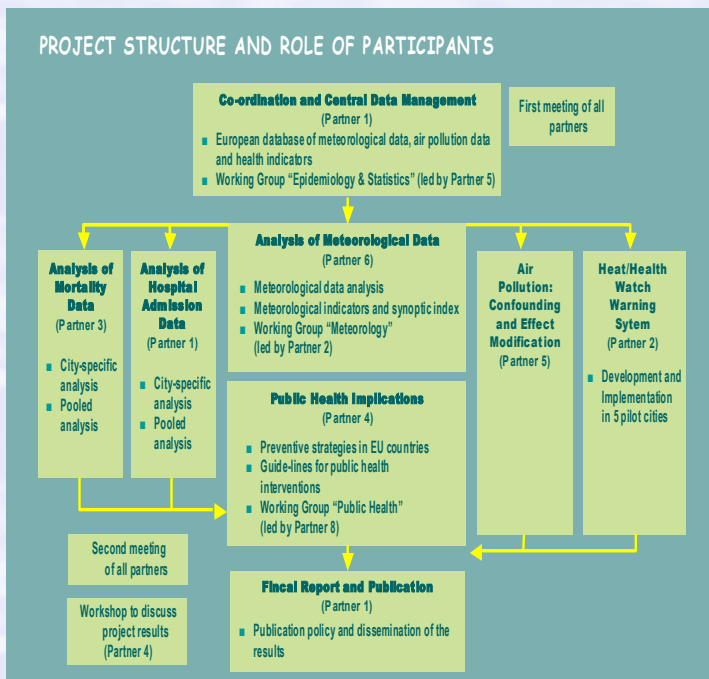
- ✓ The European database was completed. Health indicators collected were: mortality and hospital admission data for cardiovascular, cerebrovascular, and respiratory causes (Table 1). Meteorological data (air temperature, dew point temperature, wind speed, wind direction, sea level pressure, total cloud cover, solar radiation, precipitation, visibility) and air pollution data (SO<sub>2</sub>, TSP or BS, PM<sub>10</sub>, NO<sub>2</sub>, O<sub>3</sub>, CO) were collected for the same periods.
- ✓ The first all-participants meeting was held in Rome in March 2003.
- ✓ Three working groups "Epidemiology & Statistics", "Meteorology", and "Public Health" were established. Each of these WGs will discuss the specific methodological aspects and will follow the progress of the different work packages.
- ✓ The analysis of the meteorological variables for each city was performed.
- ✓ The protocol for the analysis of mortality and hospital admission data was defined and the city-specific analysis is in progress.
- ✓ In three of the five HHWWS pilot cities a collaborative network was created at a local level.
- ✓ Up-dated information on the progress of the project can be found on the website [www.epiroma.it](http://www.epiroma.it)

Table 1. Database

| city      | mortality data | hospital admission data | city      | mortality data | hospital admission data |
|-----------|----------------|-------------------------|-----------|----------------|-------------------------|
| Athens    | 1992-1996      |                         | Milan     | 1990-2001      | 1990-2001               |
| Barcelona | 1991-2000      | 1994-1997               | Paris     | 1991-1998      | 1991-2000               |
| Bucharest | 1992-1996      |                         | Prague    | 1992-2001      |                         |
| Budapest  | 1992-2001      | 1997-2000               | Rome      | 1992-2000      | 1995-2000               |
| Cracow    | 1990-1996      |                         | Stockholm | 1990-2000      | 1990-2000               |
| Dublin    | 1990-2000      |                         | Turin     | 1990-1999      | 1995-2000               |
| Helsinki  | 1988-2000      |                         | Valencia  | 1995-2000      | 1996-2000               |
| Ljubljana | 1997-1999      | 1997-2001               | Zurich    | 1990-1996      | 1990-1996               |
| London    | 1992-2000      | 1992-2000               |           |                |                         |

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