



# MED HISS

Mediterranean Health Interview Surveys Studies:  
long term exposure to air pollution and health surveillance.

MAY 2015

## NEWSLETTER

# 01

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### MESSAGE FROM THE COORDINATOR

Much has been done in recent years to reduce air pollution and its harmful effects on the health of Europeans. Many European projects have focused their work on health impact assessment of air pollution, in order to fill pressing gaps that remain in stakeholders' knowledge and understanding of this continuing threat. Health risks are anyway changing over time, as suggested by last decade's findings, depending from many factors, and this also needs to be monitored. Monitoring the change of risks according to the changes of pollutants composition and distribution is nevertheless an important issue that requires a surveillance system, whose characteristics must match some requisites of inexpensiveness and validity.

MED HISS project aims to test the feasibility of a relatively inexpensive surveillance system of long term health effects of air pollution with multiple approaches, able to be implemented in other EU countries, in order to inform with its results policy makers and to support EU policies.

To reach this goal it is necessary to foresee a communication policy of results and methods, in order to share the information collected and to disseminate innovative tools and approaches across EU.

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[www.medhiss.eu](http://www.medhiss.eu)

There are two outputs of the project that will be important for policy makers and other EU researchers and that need to be communicated:

- **First output: a multilayer MAP (eg: air pollution levels, population, confounders, etc.)**
- **Second output: guidelines on how to implement the surveillance system**

With this newsletter we hope to give some information on the project, its structure, objectives and tools.

## BACKGROUND OF THE PROJECT (AIR POLLUTION AND HEALTH)

Air pollution is the principal environmental factor contributing to premature mortality and it importantly affects quality of life, given its contribution to the onset and worsening of cardiovascular and respiratory diseases.

The European Commission is engaged from many years in evaluating air pollution real impact on the human health and promoting effective measures to its reduction. Many studies have demonstrated an association between short-term exposure to air pollution and the occurrence of acute health events. However, less is known about the health effects of being chronically exposed to high air pollution levels, particularly outside urban areas, and particularly for a large part of the population in the Mediterranean area.

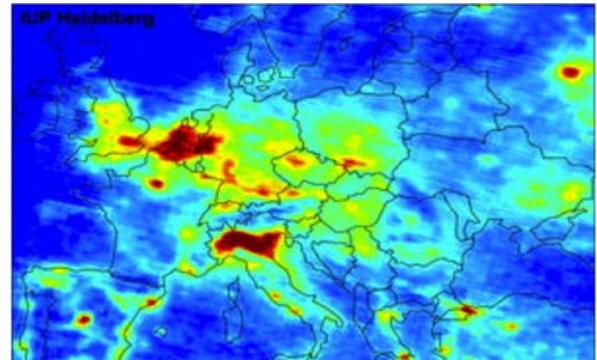
A better knowledge of the long-term health effects of air pollutants is mandatory in order to guide the European policy dealing with environment and health (Environment and Health Action Plan).

## OBJECTIVES AND METHOD OF THE PROJECT

The problems targeted by the MED HISS project are to estimate long-term health effects of air pollution in four Mediterranean countries (France, Italy, Slovenia and Spain), providing new evidence to support EU legislation and implementing an epidemiological cheaper surveillance system to monitor the variations of these effects over time. The project started on first of July 2013 in order to give the first results before the end of the project (June 2016).

The proposed low-cost approach, suitable for surveillance, is based on linking resources like air pollution prediction models, mortality and hospital admissions registries and National Health Interview Surveys, already available and mandatory in all European countries and on testing the feasibility of alternative ecological approaches.

In particular, the surveys contain representative samples of the general population, covering both urban and



rural areas. Each individual is linkable to mortality and hospital admissions information. A measure of exposure is assigned through the national deterministic dispersion models (in France-CHIMERE, in Italy-MINNI, in Slovenia-ARSO and in Spain-CALIOPE) integrated with monitoring stations information.

## WHY SUCH A PILOT STUDY?

The recent scientific literature is confirming that long-term air pollution (specially particulate matter) exposure has effects on mortality for cardiovascular and respiratory diseases, and for lung cancer too, in European population.

Nevertheless these studies were mainly focused on few big cities or on particular sub-population (susceptible groups). **MED HISS wants to settle an inexpensive way to monitor health effects of air pollution over time, covering the whole national territories (non urban areas included) and ideally all European population.**

The studies are mainly referred to health data at an individual level (behavior habits, socio-economic status etc.) and only sometimes to aggregated health data (e.g. measurement of characteristics to municipality level). Where the follow-up of population participating in Health Surveys would not be possible the robustness of this second kind of alternative approaches will be tested.

ARPA Piemonte (Italy) is the coordinator of the project. These analyses are possible thanks to a partnership which includes well-experienced epidemiological institutions together with experts in the field of environmental epidemiology and air quality monitoring and modeling.

## WHY SETTING UP A SURVEILLANCE SYSTEM?

It can be important for the EU to know the trend of health risks associated to air pollution over time. MED HISS surveillance system can be sustained for long periods of time and will allow exploring trends over different decades.

Some challenges ahead of the implementation of this system include the adoption of restrictive privacy policies that prevent the access to individual health information.

The aim of MED HISS is to demonstrate the feasibility of this kind of approach in France, Italy, Slovenia and Spain, in order to make it available in all European countries.

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## 02 The Main Actions

### THE MAIN ACTIONS

The project consists of 5 main actions:

- 1. Collection of air pollution existing dispersion models and pollutant mapping. Methods to improve exposure assessment.**
- 2. Collection of health data: NHIS data, mortality data, morbidity data and confounders.**
- 3. Pooling together health and air pollution data (data linkage), including harmonization between European countries.**
- 4. Risk estimation of long term effect of PM2.5, PM10, NO2, O3**
- 5. Health impact assessment (HIA) of air pollution in 4 EU countries: (Slovenia, Italy, France, Spain (Catalonia))**

Along with these technical actions, three groups of actions are also implemented, to ensure proper implementation of the project and the dissemination of its results:

- **Monitoring the impact of the project actions**
- **Communication and dissemination**
- **Co-ordination, management and monitoring**

We are using different experienced professionals working in environmental field that can assure high quality standards: atmospheric physics and chemists, epidemiologists, biostatisticians. Coordination and management will be under the responsibility of the coordinator; a Steering Committee including all partners and 2 external experts will help to define all the technical aspects in detail through regular meetings and teleconferences.

All the steps are following shared written protocols.

Air pollution dispersion models (which availability in each country was assessed as preparatory action) are acquired from data holders.

The final dataset containing individual characteristics, outcomes of interest and measures of exposure to air pollutants will be analyzed in order to calculate risk estimates for each outcome following a common statistical protocol.

HIA will be performed under the supervision of an experienced external expert.

Dissemination will be performed through the website, sending the relevant information to stakeholders, who will be contacted during preparatory actions, and presenting the results to the scientific community as well to decision makers and national and EU stakeholders.

## PAST EVENTS



### **Kick off meeting, 18-19 November 2013, Turin**

MED HISS kick off meeting took place in Turin at mid November 2013. All project partners has been invited

and has joined the meeting such as the two external experts did.

The meeting has been foreseen to present the project objectives, methods and results to the partners.

### **Health data protocol meeting, 20-21 January 2014, Paris**



20-21 January, Paris – The Health data protocol meeting was held in Paris in January and all partners joined it, someone was

connected in videoconference.

The meeting gave the chance to discuss about Health data protocol, action B2 of MED HISS project and to create a fruitful exchange of views.



### **Environmental data protocol meeting, 26 February 2014, Bologna**

The MED HISS Environmental data protocol

meeting took place in Bologna at the end of February 2014. The meeting has been foreseen to coordinate action B1 “Pollutant data mapping” job: summary of action objectives, deliverables and milestones, focusing the attention on the first deadline.

Summary of data available by all partners, with information gathered from the two previous meetings were presented. The methods to improve the goodness of exposure assessment for epidemiological purposes have been presented.

### **Mid term meeting, 29-30 October 2014, Barcelona**

The Agenda of the meeting comprised:

- State of the art of health data collection
- First results of air pollution maps
- Preliminary analysis on Italian cohort
- Set up of ecological study
- To point out main difficulties and the way to overcome them
- Next meeting date and venue

The focus of the meeting discussion was about big cities air pollutants levels exposure assessment, with the decision to perform sensitivity analysis on big cities

The participants highlighted some key aspects about the ongoing work plan:

- Update of the follow-up data
- Recommendation to harmonize the European Survey information useful to the control of confounding
- The best methodology for the comparison between the individual and the ecological approaches



## UPCOMING EVENTS

### **Technical meeting, 15th and 16th July, 2015, Ljubljana**





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