CL04

AIR-QUALITY

Integration of existing approaches toward (bio)surveillance in relation with indoor and outdoor air quality

Cluster of the research projects : MIC-ATR – PARHEALTH – ANIMO – SHAPES

DURATION OF THE PROJECT
15/12/2009 - 31/01/2012

BUDGET
99.990 €

KEYWORDS
Indoor/outdoor air quality, biomonitoring, (cardio)respiratory diseases, environmental exposure, environment and health

CONTEXT

Exposure to air pollution (both outdoor and indoor) has many potential adverse effects on human health (Bernstein et al. , 2004). Recent studies have observed positive associations between outdoor air pollution and emergency department visits (VILLENEUVE, 2007) and between improved outdoor air quality and increased life expectancy (Pope et al. 2009).

This project is framed within international (WHO) and EU (CAFÉ (Clean Air for Europe, SCALE (Environment and Health Strategy) and drafting of a Green Book on indoor air quality and pollution) environmental health program. The project is in line with the strategic objectives of the program to strengthen the integration of outdoor and indoor air quality related to human health in the context of sustainable development.

PROJECT DESCRIPTION

Objectives

The cluster proposal aims to integrate existing approaches towards health surveillance in relation with indoor and outdoor air quality. This will be achieved by:

- An active interdisciplinary dialogue to :
  - Identify existing methods, data, information and (bio)surveillance programs in relation with indoor air, outdoor air, health effects and particularly (cardio)respiratory diseases and human biomonitoring;
  - Identify strengths, weaknesses and gaps and further perspectives in terms of research needs or actions;
  - Identify data comparability for further transfer;
- An activation of the dialogue between scientists and policy makers with the aim:
  - To propose an integrated strategy for human biomonitoring of indoor and outdoor air quality in Belgium by combining medical, biological and chemical expertise

Methodology

In order to develop an integrated strategy, 5 fields or themes of activities will have to be assessed in order to highlight their potential of integration into a multidisciplinary approach:

- indoor air quality aspects,
- outdoor air quality aspects,
- human biomonitoring aspects,
- time activity patterns,
- health effects, focusing on respiratory diseases.

1st step: identification of actors and programs

The cluster will identify, in collaboration with the authorities, the actors active in the surveillance programs within the 5 fields/themes considered.

2nd step: assessment process

The cluster will do an inventory of existing (bio)surveillance programmes, methods and data in the 5 fields/themes and will assess the methods used and the data collected. Therefore the strengths, weaknesses, opportunities and threats of the different methods will have to be evaluated to complete the inventory. This deep analysis will allow us to identify which data can be integrated or not, are complementary or are overlapping and highlight the research needs or the needs for policy and actions.

3rd step: integration process

Assessment of potential integration of datasets
In order to assess the possibilities of integration, disparate datasets resulting from different hitherto unrelated projects will be selected and statistically examined to reveal new relationships between the datasets and identify possible risk factors of exposure and health effects.

Proposal of an integrated strategy for human health surveillance
The cluster will identify appropriate indicators from environmental exposure to human exposure and health effects focusing on respiratory diseases and propose an integrated strategy for human health surveillance.

SSD SCIENCE FOR A SUSTAINABLE DEVELOPMENT

HEALTH & ENVIRONMENT

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INTERACTION BETWEEN THE PARTNERS

WP0: Coordination
Tasks 0.1: Coordination, follow-up and reporting => C + P1 + P2 + P3 + P4

WP1: Identification of actors and programs
Task 1.1. Organisation of a kick off meeting addressing partners and authorities => C
Task 1.2. Establishment of a data base per field of work => C + P1 + P2 + P3 + P4

WP2: Assessment process
Task 2.1. Inventarisation of data => C + P1 + P2 + P3 + P4
Task 2.2 : Establishment of a database => C + P1 + P2 + P4
Task 2.3. Organisation of workshop 1 => C + P1 + P2 + P4

WP3: Integration process
Task 3.1. Assessment of datasets integration => C + P1 + P2 + P3 + P4
Task 3.2. Organisation of workshop 2 => C + P1 + P2 + P4
Task 3.3. Develop integrated monitoring strategy => C + P1 + P2 + P3 + P4

(*) C = Hygiène Publique en Hainaut, P2 and P3 = VITO, P3, P4 = KULeuven

EXPECTED RESULTS AND/OR PRODUCTS

- database of the actors in Belgium in the fields of indoor air quality, outdoor air quality, human biomonitoring and health (focusing on (cardio)respiratory diseases)
- database of the methods used in these 5 fields of expertise, their strengths, weaknesses, opportunities for integration and threats;
- proposal of an integrated biosurveillance program related to the cumulated exposure to indoor and outdoor air quality and focusing on (cardio)respiratory diseases;
- proposal in terms of research, actions and policy needs;
- workshops and final reports.

PARTNERS

Four projects and one cluster within the SSD programme have specifically been chosen to be part of this cluster proposal. Each of these projects is an essential part.

Hainaut Vigilance Sanitaire (Hygiène Publique en Hainaut) worries about relations between health and environment. It plays actor's sharp role of risk prevention.

VITO provides innovative technological solutions as well as scientifically based advice and support in order to stimulate sustainable development and reinforce the economic and social fabric of Flanders.

K.U.Leuven engages in a free and disinterested search for the truth through its scientific research, education and service to society.

This part can contain a maximum of 750 characters (without spaces), for all the partners.

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Follow-up Committee
For the complete and most up-to-date composition of the Follow-up Committee, please consult our Federal Research Actions Database (FEDRA) by visiting
http://www.belspo.be/fedra or
http://www.belspo.be/ssd

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