Newsletter Dynamo-HIA
June 2009

Welcome and purpose

Welcome to the second issue of the newsletter of DYNAMO-HIA. The purpose of this newsletter is to inform policy makers, staff members, and researchers throughout Europe and beyond about the DYNAMO-HIA project. This second newsletter gives background information on the project and describes the achievements in the second year, i.e. from May 1 2008 to May 1 2009.

DYNAMO-HIA

DYNAMO-HIA is funded by the Executive Agency for Health and Consumers (EAHC, formerly known as PHEA) as part of the EU Public Health Program 2003-2008 of the European Commission's Directorate General for Health and Consumer Affairs (DG SANCO), with co-financing from the Erasmus Medical Center Rotterdam, the National Institute of Public Health and the Environment in the Netherlands, the Catalan Institute of Oncology, the International Obesity task force, the London
School for Hygiene and Tropical Medicine, the Haughton Institute in Dublin, and the Instituto Tumori in Milan.

Aims of the project

The DYNAMO-HIA project will develop and build an instrument to quantify the health impact of changes in health determinants as a result of different policies and applies it to selected life-style related health-determinants and resulting diseases across EU countries. The instrument, a dynamic model called DYNAMO-HIA, will be generic (adaptable to various health determinants and outcomes relevant for the policy in question), applicable throughout the EU, and made publicly available. Where possible, it will be based on existing instruments.

The specific objectives of the project are:

1. To develop and implement a stand-alone software tool (DYNAMO-HIA) to estimate the health impact of policies by comparing the population health impact of one or more policy interventions with a baseline scenario. This tool translates changes in health determinants into changes in population health.
2. To compile and make publicly available data sets (consistent across EU countries) on a few example health determinants/risk factors (smoking, obesity, and alcohol consumption) and their effects on four example diseases (cancer, cardio vascular disease (CVD), diabetes, and chronic obstructive pulmonary disease (COPD)).
3. To illustrate the tool by assessing the health effects of several health-relevant policy options with
   regard to these health determinants.

Work Packages

The DYNAMO-HIA consists of 11 work packages:

1. Coordination of Project: Johan Mackenbach, Wilma Nusselder, Jet Smit
2. Dissemination of the Results: Jet Smit
3. Evaluation of the Project: Johan Mackenbach
4. Model Specification: Wilma Nusselder, Stefan Lhachimi
5. Construction of Software Tool: Hendriek Boshuizen, Pieter van Baal

6. Smoking: Estevez Fernandez Munoz
7. Overweigh/Obesity: Tim Lobstein, Rachel Jackson-Leach
8. Alcohol: Martin McKee, Joceline Pomerleau, Kate Charlesworth
9. CVD and diabetes: Kathleen Bennett, Simon Capewell, Julia Critchley, Bernie McGowan
10. Cancer: Andrea Micheli, Paolo Baili, Camilla Amati, Ilaria Casella, Natalia Sanz
11. Definition of Scenarios: Wilma Nusselder, Stefan Lhachimi

Major activities during the second year

1. Data collection and estimation of risk factor exposure data by age, sex for alcohol consumption, overweight (categories and continuous), smoking (categories and time since quitting)

2. Data collection and estimation of incidence, prevalence and excess mortality data by age and sex for COPD, diabetes, stroke, IHD, breast-, colorectal-, esophageal-, lung-, and oral-cancer)
3. Data collection of population data by age and sex: population size, total mortality rates, overall disability weights, and of projected births (by year)
4. Construction of the prototype of the tool

Data collection and estimation (1-3):
The process of data collection and estimation was more challenging than we expected. The tool requires exposure data, and incidence, prevalence and excess mortality data for each disease by sex and single year of age for the age range 0-95 years. We experienced problems in finding qualitative good data and data processing was needed to obtain age and sex specific data for the entire age range. A step-by-step approach was followed to increase gradually the number of countries, starting with the Netherlands and yielding by the end of this year risk factor data and cancer data for Netherlands, Poland, UK, Spain, Sweden, Denmark, Finland, Germany. For diabetes, ischaemic heart disease, stroke and COPD incidence, prevalence and mortality data became available in this year for the Netherlands and UK. Data collection of population data by age and sex of projected births (by year) was completed.

Prototype of the tool (4):
Large progress is made with the construction of the prototype of the tool during this year. The tool has the following specifications:

- DYNAMO-HIA is a dynamic simulation model with discrete time steps in 1-year intervals.
- DYNAMO-HIA features a general disease model (allowing to model multiple chronic diseases) and is based on a multi-state modeling approach.
- The tool models explicit risk factor states and hence allows for mortality selection.
- Risk factors can come in three different forms: continuous, in classes (up to 9 categories), and in classes where duration of class membership is important. Apart from health determinants, diseases can be risk factors for other diseases.
- The model accommodates up to three different types of disease process: (1) chronic diseases, (2) partly acutely fatal diseases, and (3) diseases where the excess mortality depends on the duration of the disease.
- The model needs standard epidemiological data such as disease incidence, prevalence, mortality, and relative risk (by sex and age).
- The user will define the policy-induced change in risk factor prevalence or risk factor transition rates. The step from epidemiological data to transition rates of the model is included. Several population based health outcome measures (such as life expectancy or DALE) are readily available to quantify the difference between the reference and the different policy scenarios.
- DYNAMO-HIA allows importing data from other countries, regions, or populations (next to the following data will be made available for a number of EU countries).

Excel worksheets were constructed to export data in the format (XML) readable by the tool.

Meetings in the second year:

4th Steering group meeting May 22, 2008, Rotterdam, the Netherlands

- Participants: all Work package leaders + coordinating team EMC-RIVM
- Topic: Model specification + selection of cancer sites + data+ input formats

1st Expert meeting May 23, 2008, Rotterdam, the Netherlands.

- Topic: model specification
- Audience: 34 participants from 19 countries being experts in the field of heath modeling, HIA and epidemiology

5th Steering group web meeting October 7, 2008

- Participants: all Work package leaders + coordinating team EMC-RIVM
- Topic: Pilot data for the Netherlands

6th Steering group phone meeting December 1, 2008

- Participants: all Work package leaders + coordinating team EMC-RIVM

- Topic: Discussion of pilot data for Poland and the Netherlands

Special meeting on January 19-21, 2009 on DISMOD and IPM modelling, Bilthoven, the Netherlands

- Participants: Work package 9 and 11 + coordinating team EMC-RIVM
- Topic: Dismod and IPM modelling

7th Steering group phone meeting February 2, 2009

- Participants: all Work package leaders + coordinating team EMC-RIVM
- Topic: Discussion of pilot data for UK and Spain

Presentations:

Stefan Lhachimi. "DYNAMO-HIA a tool for the quantification of health impact of policies" presentation on 9th International Health Impact Assessment Conference, 9-10 October 2008, Liverpool, Ireland.

Coming Presentations/workshops:

Workshop "Quantification in HIA: DYNAMO-HIA as an assistive device to make it work",
10th International Health Impact Assessment Conference, Rotterdam, 16th October, 2009

Workshop: "Quantifying health impact of policy proposals: DYNAMO-HIA as assistive device from change in risk factor prevalence to change in population health", EUPHA Conference, Lodz, November 28, 2009

Presentation: "DYNAMO-HIA - A ready to use tool to determine the health impact of policies and actions", HIA-Workshop, EUPHA Conference, Lodz, November 28, 2009

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