



The potential for reduction of health inequalities in Europe

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## ANNEX I DESCRIPTION OF THE ACTION

### **Overview**

#### **Title**

The potential for reduction of health inequalities in Europe

#### **Priority area and action**

Priority area 3: generate and disseminate health information and knowledge (hi-2008)

Action: 3.1 Development of a sustainable health monitoring system

#### **Summary (objectives, methods, expected results)**

Strategic relevance:

Previous EU sponsored projects, particularly the Eurothine project, have shown that health inequalities were substantial throughout the European Union in the 1990s, but that there were important variations between countries in the magnitude of health inequalities. This suggests that there is great scope for reducing health inequalities.

General Objective:

We propose a study that will assess the potential for reduction of inequalities in health outcomes and risk factors in Europe.

Methods and means:

We will collect and present data on socioeconomic inequalities in mortality, self-reported morbidity, and risk factors for the period 2000-2005 in all European Union countries with available and comparable data. Mortality data will be census-linked, and inequalities in Healthy Life Years and loss of Disability-Adjusted Life-Years will be calculated. We will then carry out analyses with several types of “counterfactual” distributions of socioeconomic determinants and specific risk factors, in order to assess the potential for reduction of health inequalities in the European Union. These “counterfactual” scenarios will be derived from the intervention evaluation literature as well as from observed variations between countries. We will collaborate with the Global Burden of Disease Study group to take advantage of their methodologies, and to be able to use their updated analyses of the impact of risk factors on specific diseases in our estimates.

Expected outcomes:

- Updated estimates of the magnitude of socioeconomic inequalities in health in Europe.
- Estimates of the contribution of risk factors to the explanation of these health inequalities in Europe.
- Estimates of the extent to which health inequalities in Europe can realistically be reduced by policies and interventions on socioeconomic determinants as well as on specific risk factors.

## **Objectives**

### **General objectives**

This project aims at assessing the potential for reduction of health inequalities in Europe, by identifying the determinants and risk factors associated with variations in the magnitude of health inequalities between European countries. Europe offers excellent opportunities for doing this type of analysis, because data on inequalities in mortality, morbidity, and risk factors are available in many countries, and variations in the magnitude of health inequalities between countries have already been found. On the basis of the analysis, recommendations for health policy and health-in-all-policies will be formulated at the European and national levels.

### **Specific objectives**

- To elaborate methods for assessing the potential for reduction of socioeconomic inequalities in health in Europe
- To build a database on socioeconomic inequalities in mortality, morbidity, and risk factors in Europe in 2000-2005
- To develop “counterfactual” distributions of socioeconomic determinants and specific risk factors in Europe
- To estimate the magnitude of socioeconomic inequalities in health in Europe, and to assess the contribution of risk factors
- To estimate inequalities in summary measures of population health, and the contribution of diseases and risk factors
- To estimate inequalities reduction under “counterfactual” distributions of socioeconomic determinants and risk factors
- To formulate recommendations for health policy and health-in-all-policies at the European and national levels

### **Indicators chosen**

1. Documents and reports: Timely completion of 10 deliverables and related documents by each WP with contents being in full agreement with specific objectives, including an interim report and a final report.
2. Papers: Publication of the results of the project by submission of at least three papers in international peer reviewed scientific journals according to deliverables list.
3. Database: A high-quality database on mortality (total and by cause of death), self-reported morbidity, and risk factors by socioeconomic status in the European Union, comprising data for at least 20 countries.
4. Analysis: Ensuring adherence to protocol for the analysis of data according to high-quality standards of data analysis techniques

### **Rationale and relative merits of the project**

Inequalities in health between socioeconomic groups are increasingly recognized as one of the main challenges for health policy. Substantial inequalities in mortality and morbidity by level of education, occupational class, or income have been found in all European countries with available data. These inequalities often amount to more than 5

years difference in Healthy Life Years at birth, and more than 10 years difference in disability-free life expectancy, between those with the lowest and highest socioeconomic position. Research into the explanation of health inequalities has identified many possible entry-points for interventions, and a search for evidence-based policies is currently ongoing in several European countries. Despite these promising developments, it is currently unknown to what extent socioeconomic inequalities in health are actually modifiable, and which entry-points provide the best choice for making a substantial impact on the magnitude of health inequalities. This is a serious barrier for effective policy-making, because it hinders both priority setting and the formulation of realistic quantitative targets for reducing health inequalities.

International-comparative studies can help to identify the scope for reduction of health inequalities, by providing information on variations in the magnitude of inequalities, and their determinants. In a recent study of variations in the magnitude of inequalities between 22 European countries in the 1990s, we found that relative and absolute inequalities in mortality varied up to twenty-fold, with some Southern European populations having much smaller inequalities, and many countries in Eastern Europe and the Baltic having much larger inequalities than the European average. These studies suggest that important reductions of health inequalities are feasible, and that further work to identify the main determinants of these variations is urgently needed.

This project will (1) elaborate new methods for assessing the potential for reducing health inequalities, and (2) apply these methods to more recent data on health inequalities than were previously available. (1) We know that inequalities in smoking and other risk factors between socioeconomic groups are larger in some countries than in others, and that countries with smaller inequalities in risk factors have smaller inequalities in mortality. Also, some countries have a more skewed distribution of socioeconomic determinants in their populations than others, e.g. larger income inequalities, which may also translate into larger health inequalities. Until recently, however, no methods were available to quantify the impact on health inequalities of modifying the distribution of underlying socioeconomic determinants or specific risk factors. The most important innovation is that we will apply a methodology recently developed within the Global Burden of Disease study, to estimate the contribution of risk factors to health inequalities, as well as the reduction in health inequalities that would be obtained, if the distribution of determinants of health inequalities would be more equal than is currently the case. Such “counterfactual” distributions will be created both for socioeconomic determinants (e.g. a more equal distribution of level of education or income in the population) and for specific risk factors (e.g. a more equal distribution of smoking or high blood pressure across socioeconomic groups in the population). (2) Previous studies of health inequalities in Europe used data on the 1980s and 1990s, because more recent data, particularly on socioeconomic inequalities in mortality in the early 2000s, had not yet become available. In view of the clear tendency for widening health inequalities that has been observed in many European countries, an analysis of the magnitude of health inequalities in Europe in the 2000s is urgently needed.

Two major practical applications of the results of this project are foreseen: (1) The project will provide information on the major determinants and risk factors on which interventions and policies should focus in order to reduce health inequalities in Europe. Such information is at the moment fragmentary and only available for a few countries. By expanding this knowledge-base, the project will support the development of packages of essential policies and interventions for tackling inequalities in health, on the basis of evidence-based “counterfactual” scenarios. (b) The project also serves as a basis for

monitoring health inequalities in Europe. By providing several “counterfactual” scenarios, the project will support the development of realistic targets for the reduction of health inequalities in the coming years. It will also provide a new perspective on monitoring health inequalities, and for assessing the effectiveness of interventions and policies. This increases the sustainability of the project, which will remain relevant for many years after its end. Findings will contribute to develop strategies to increase Healthy Life Years in Europe as a whole.

This project will also provide a crucial European contribution to the Global Burden of Disease 2010 study. Europe offers excellent opportunities for comparing and analysing health inequalities and their determinants, because data on inequalities in mortality, morbidity, and risk factors are available in many countries, and because European countries differ widely in their political, social, economic, and epidemiological histories. The results of this project are therefore likely to make a major contribution to worldwide knowledge on how to explain and reduce health inequalities.

### **expected results**

#### **Outcome**

- Updated estimates of the magnitude of socioeconomic inequalities in health in Europe.
- Estimates of the contribution of risk factors to the explanation of these health inequalities in Europe.
- Estimates of the extent to which health inequalities in Europe can realistically be reduced by policies and interventions on socioeconomic determinants as well as on specific risk factors.

## Deliverables

<i>Deliverable No</i>	<i>Deliverable title</i>	<i>Delivery date</i>	<i>Nature</i>	<i>Confidentiality level</i>	<i>Dissemination</i>
D 1	Research protocol for “counterfactual” analysis	M 12	Protocol for application of the “counterfactual” methodology, including data specifications and framework for specifying “counterfactual” distributions of socioeconomic determinants and risk factors	Restricted	Project website and project meetings (internal dissemination only). Chapter in final report.
D 2	Harmonized data base	M 12	The harmonized data base on socioeconomic inequalities in mortality, morbidity, and risk factors in the European Union from national and international sources.	Confidential	Project website and project meetings (internal dissemination only). Chapter in final report.
D 3	“Counterfactual” distributions	M 24	Report with detailed description of “counterfactual” scenarios of the distribution of socioeconomic determinants and risk factors in Europe	Public	Report with detailed description of “counterfactual” scenarios of the distribution of socioeconomic determinants and risk factors in Europe. Chapter in final report.

D 4	Inequalities in mortality and morbidity	M 24	A report with estimations of the magnitude of socioeconomic inequalities in mortality, morbidity, and risk factors in Europe in the early 2000s.	Public	Presentations at national and international conferences, papers in scientific and other journals, (links to) the project website, chapter(s) in final report, and input in the GBD expert group on socioeconomic determinants.
D 5	Inequalities in summary measures of population health	M 24	A report with estimations of the magnitude of socioeconomic inequalities in Healthy Life Years and Disability-Adjusted-Life-Years lost in Europe in the early 2000s.	Public	As deliverable 4
D 6	Potential for reduction of inequalities	M 36	A report with estimations of the potential for reduction of inequalities in health in Europe on the basis of attainable “counterfactual” distributions of socioeconomic determinants and risk factors.	Public	As deliverable 4
D 7	Policy recommendations	M 36	A report with recommendations for health policy and health-in-all-policies at European and national levels, based upon results of the analyses, particularly of WP 6, and focus groups of policymakers	Public	Involvement of groups of policymakers. Presentations at national and international conferences, papers in scientific and other journals, (links to) the project website, and chapter in final report.

D 8	Interim & Final report	M 18, M 36	D8a: Mid-term report summarizing the preliminary results of the project and work carried out by all work packages (M 18). D8b: Report summarizing the main and final results of the project, together with separate chapters from most individual WPs (M 36).	Public	Presentations at national and international conferences, summary paper in journals, networks of experts and policy makers, and project website
D 9	Website	M 36	Project website with all materials available	Public	Promotion through presentations, papers and networks
D 10	Evaluation report	M 36	Report on the evaluation of the project results and impact	Public	On the website, communication to the EC



## Methodology

### Methods used, references, significances

#### *Relevant Evidence-base*

Evidence has documented persistent socioeconomic inequalities in health in Europe: Europeans with a lower level of education, income, wealth or occupational class have a lower life expectancy and experience many more health problems throughout life<sup>1-7</sup>. This leads to huge differences between socioeconomic groups in the number of years that people can expect to live in good health ('health expectancy'), which typically amount to 10 years or more. Several reviews of socioeconomic inequalities in health in EU member states<sup>1, 3, 5, 8, 9</sup> have shown that these socioeconomic inequalities in health exist in all countries with available data.

International-comparative studies can help to identify the scope for reduction of health inequalities, by providing information on variations in the magnitude of inequalities, and their determinants. The most recent European effort comprises data for 22 countries and shows that there are enormous variations in the magnitude of socioeconomic inequalities in health between countries<sup>5</sup>. In this study we found that in the 1990s relative and absolute inequalities in mortality varied up to twenty-fold, with some Southern European populations having much smaller inequalities, and many countries in Eastern Europe and the Baltic having much larger inequalities than the European average<sup>5</sup>. These studies suggest that important reductions of health inequalities are feasible, and that further work to identify the main determinants of these variations is urgently needed.

These cross-country differences in socioeconomic inequalities health can be hypothesized to represent variations in macro-level factors such as social stratification systems, levels of economic development, and the impact of welfare system and policies<sup>10-12</sup>, all of which can lead to variations in individual factors such as the social patterning of health determinants, e.g., smoking<sup>11, 13</sup>. Understanding to what extent modifying socioeconomic inequalities in these determinants will lead to reducing inequalities in health is an essential step for the development of policy.

#### *Methods*

We will link mortality to census data on socioeconomic status, and analyse self-reported health by socioeconomic position. Data for the period 2000-2005 have become available in many countries, and will be used to measure inequalities in mortality and morbidity in the early 2000s. The reason for choosing this time-frame is that census data need to be linked to follow-up mortality data in subsequent years in order to obtain information on socioeconomic inequalities in mortality. In most countries, the most recent linkage covers the period 2000-2005. Because the time-period for the morbidity and risk factor data has to be consistent with the time-period for the mortality data, we will use the time-period 2000-2005 for all the data in this project.

We will use these data to estimate inequalities in summary measures of population health (particularly Healthy Life Years (HLY) and loss of Disability-Adjusted Life-Years (DALYs)). Socioeconomic inequalities in HLY will be calculated with all-cause mortality and generic measures of morbidity. Socioeconomic inequalities in DALYs

lost will be calculated with the Global Burden of Disease (GBD) methodology. This will also enable us to link up with other strands of the new GBD Study (which started in 2007 and is due for completion in 2010), and to benefit from updated estimates of the contribution of risk factors to disease occurrence.

To determine to what extent distributions of socioeconomic determinants and specific risk factors can be modified, a number of different “counterfactual” scenarios will be developed, which together give a good picture of the potential for reduction of health inequalities. (1) Complete elimination of inequalities, by upward levelling of determinants or risk factors to the level currently seen in the highest socioeconomic groups. (2) Partial elimination of inequalities, by reducing inequalities in determinants or risk factors to the level currently seen in countries with the smallest inequalities. (3) Partial elimination of inequalities, by reducing inequalities in determinants or risk factors to the level seen in evaluation studies of interventions and policies to reduce health inequalities. (4) Partial elimination of inequalities, by reducing inequalities in determinants or risk factors by the amount specified in current policy targets, e.g. 25%. While scenario 1 gives an indication of the theoretical upper limit to what can be achieved, scenarios 2, 3 and 4 provide a more realistic picture of what be achieved in the real world.

In addition to developing a metric to estimate the health loss associated with morbidity and mortality (i.e. DALYs lost), the original Global Burden of Disease study also developed methods to assess the expected changes in population health that would result from modifying the population distribution of exposure to a risk factor. These Comparative Risk Assessment methods were derived from the well-known epidemiological measure of the Population Attributable Fraction, and will be adapted for use in this project to estimate the impact of “counterfactual” distributions of socioeconomic determinants and specific risk factors on the magnitude of health inequalities (and on average health) in the population. As yet, the GDP project methodology has never been systematically applied to the problem of socioeconomic inequalities in health in Europe. The present project is the first European-wide effort to use this methodology in the context of socioeconomic inequalities in health.

There are substantial differences between men and women in how socioeconomic status relates to health, and in the determinants of socioeconomic inequalities in health<sup>13, 14</sup>. Therefore, the project will assess the potential for reduction of socioeconomic inequalities in health in Europe separately by gender. This gender perspective will be applied at all levels of the project, so that ‘counterfactual’ distributions of socioeconomic determinants and specific risk factors, estimates of inequalities, and the potential for reduction of health inequalities will be assessed separately by gender. Where appropriate, policy recommendations will also specifically refer to the potential for reducing health inequalities separately for men and women.

#### *Project management*

The Steering Committee (SC) will be the main decision making body of the project. Prof. J. P. Mackenbach of the project coordinating centre at Erasmus MC will act as chair of the SC, with associated partners as SC members. Associated partners have been selected on the basis of their involvement in previous European projects on health inequalities, their active research on explaining health inequalities, and the expertise needed for each of the work packages. In addition, the Steering Committee (SC) will include a key collaborating partner from Central and Eastern European countries (Dr Mall Leinsalu, Estonia), who will assist the coordinating centre and the associated

partners to include Eastern and Central European countries in all project activities. In the previously EU-funded Eurothine project, a first network of researchers in the area was identified. For the current project, we will expand our efforts to obtain data of higher quality for these countries and include as many of them as possible.

The SC will guide overall project activities, project progress, and decisions related to the work envisaged. It will monitor data quality and the end product of each WP. The SC will provide input for the preparation of progress reports for the European Commission, and will be responsible for tackling problems that may emerge. The SC will meet six times during the project. Finally, collaborative partners were chosen from the EU Network on Inequalities in Health, taking into account their specific expertise and representativity for the entire European region.

A centralized management structure will be set up, whereby the Erasmus MC in the Netherlands will be responsible for the administrative and financial management of the project. The Erasmus MC will thus be responsible for the day-to-day coordination and financial administration. Work packages will report directly to the Erasmus MC, which will be responsible for dealing with administrative and management tasks envisaged in project implementation. The Erasmus MC will be the central body responsible for communication with the European Community. The overall financial management of the project will be carried out by the financial Department of the Erasmus MC, which has extensive experience in the financial co-ordination of EU-funded projects.

### **Analysis of the risks and contingency planning**

There is a potential risk that some of the data required are not available in sufficient detail for certain countries and/or risk factors. To address this, protocols will be developed to extrapolate findings from comparable regions or studies to those for which data are incomplete.

Data may not be fully comparable across all countries, because of differences in data collection or causes of death registration. This risk will be addressed by thorough investigation of selected country specific data, and sensitivity analyses based on different sets of assumptions of the comparability level.

A third risk involves a potential lack of consensus on the methodology applied to examine counterfactuals of risk factors and their impact on health inequalities. This risk will be addressed by involving European and international experts in the field from an early stage of the project, and through discussions at consortium meetings scheduled in the first and third year of the project.

## Work package overview

<i>Work-package (WP) No</i>	<i>Work package title</i>	<i>Lead partner</i>	<i>Starting date</i>	<i>Ending date</i>	<i>Deliverable No</i>
WP 1	Coordination of the project	Erasmus MC	1	36	D-8
WP 2	Dissemination of the results	Erasmus MC	1	36	D-9
WP 3	Evaluation of the project	Erasmus MC	1	36	D-10
WP 4	Development of methods to assess potential for reduction of health inequalities	Erasmus MC	1	12	D-1
WP 5	Building a harmonized database on health inequalities in the European Union	INSERM	1	12	D-2
WP 6	Developing "counterfactual" distributions of socioeconomic determinants and risk factors	UBAH	13	24	D-3

WP 7	Estimating the magnitude of inequalities in mortality and morbidity	CHES	13	24	D-4
WP 8	Estimating the magnitude of inequalities in summary measures of population health	UH	13	24	D-5
WP 9	Estimating the potential for reduction of health inequalities	Erasmus MC	25	36	D-6
WP 10	Formulating policy recommendations	ASL TO3	25	36	D-7

### Time schedule

Work package	M 1	M 2	M 3	M 4	M 5	M 6	M 7	M 8	M 9	M 10	M 11	M 12	M 13	M 14	M 15	M 16	M 17	M 18	M 19	M 20	M 21	M 22	M 23	M 24	M 25	M 26	M 27	M 28	M 29	M 30	M 31	M 32	M 33	M 34	M 35	M 36	
WP 1			SCM						SCM & CM						SCM						SCM						SCM							SCM & CM		D-8	
WP 2																																				D-9	
WP 3																																				D10	
WP 4												D-1																									
WP 5												D-2																									
WP 6																									D-3												
WP 7																									D-4												
WP 8																									D-5												
WP 9																																				D-6	
WP 10																																				D-7	

SCM= Steering Committee meeting; CM= Consortium meeting

## **work packages decription**

### **Work package n° 1: Coordination of the project**

*List of partners involved*

Erasmus MC

*Description of the work*

Tasks:

- To ensure the achievement of the specific objectives of the project within the agreed time and budgetary limits.
- To maintain the harmonized database on socioeconomic inequalities in mortality, morbidity, and risk factors in the European Union.
- To ensure efficient communication within the project, including through the organization of meetings of steering committee and full consortium, the provision of email newsletters, website and web conferencing facilities.
- To ensure efficient general administrative and financial management of the project, and to coordinate liaisons with the European Union.

Methods:

Task 1: This WP will monitor the activities and progress towards deliverables of all WPs. Where needed, it will give advice to the WP leaders in order to ensure that the objectives of their WP are reached within the time and budgetary limits. Problems with the progress of specific WPs will be presented to the Steering Committee (SC, which constitutes of all main and associated partners).

Task 2: This WP will provide data management for the harmonized data on socioeconomic inequalities in mortality, morbidity, and risk factors as prepared in WP5. It will give access to data which have been collected in previous projects, and will safely store new data which are collected in this project, taking into account privacy regulations and other quality assurance procedures. It will also provide full data management support to WP5.

Task 3: The WP will serve as the focal point for communication within the project and with external parties. Communication will be via personal visits, e-mail, telephone contact, newsletters, web conferencing facilities and the project website. The WP will organize and chair 6 Steering Committee (SC) meetings planned in the following dates and places: Kick-off meeting at month 3 (Rotterdam, The Netherlands); meeting at month 9 (Rotterdam, The Netherlands); meeting at month 15 (Paris, France); meeting at month 21 (Stockholm, Sweden); meeting at month 27 (Turin, Italy); and meeting at month 34 (Rotterdam, The Netherlands). In addition, two meetings of the entire consortium will be organized at month 9 (Rotterdam, The Netherlands) and 34 (Rotterdam, The Netherlands). The WP will prepare minutes to all SC meetings.

Task 4: This WP will handle all financial and administrative issues. The WP will prepare interim and final financial reports for the European Commission. This WP will also ensure all other communication with the European Union, particularly with DG-SANCO, for the administration of the project and the monitoring of progress.

*Milestones*

<i>Date</i>	<i>Milestone</i>
M-3	Steering Committee 1 and kick-off meeting report
M-9	Steering Committee meeting 2 and Consortium meeting 1 report
M-15	Steering Committee meeting 3 report
M-18	Interim Report
M-21	Steering Committee meeting 4 report
M-27	Steering Committee meeting 5 report
M-34	Steering Committee meeting 6 and Consortium meeting 2 report
M-36	Final report

*Deliverables*

D-8a: Interim report

D-8b: Final report



## Work package n° 2: Dissemination of the results

### *List of partners involved*

Erasmus MC

### *Overall strategy and methods*

Methods for dissemination and for ensuring transferability and sustainability include:

(1) Project website: Results will be published on the project web-site, linking to other relevant EU based web-sites. The website will be freely available to scientists, policy makers, private stakeholders and the general public. Due to privacy regulations, the database of socioeconomic inequalities in health across Europe will be confidential and accessible to members of the consortium only. However, the results of the analysis of these data will be freely available in the website. The main purpose will be to inform all stakeholders of the findings of the project in the form of summary tables and policy recommendations that can have a direct input on social and health policy development.

(2) Networks of policymakers and health promotion and prevention agencies: A list of European and national policy makers will be drawn up, and the results of the project will be disseminated to this group via the project website, the final report, and direct communication. Links will also be maintained with DG SANCO officers, who will benefit directly from the results of this study. Similarly, the results will be disseminated among European and national health authorities, health promotion institutes, and ministries of health.

(3) Scientific dissemination: Contributions will be made to scientific conferences in the field of public health, and the results will be published in international scientific journals.

(4) Participation in new GBD project: We will provide input from Europe into the GBD-2010 project, particularly the GBD expert group on socioeconomic determinants chaired by Prof. Johan Mackenbach, which has members representing all continents. This GBD expert group will collect comparable data on health inequalities in other continents, particularly North America (USA and Canada), East Asia (South Korea and Japan) and Australasia (Australia and New Zealand), which enlarges the scope for comparative analyses, and will provide additional input into scenario 2. Where relevant, the results of this project will also be disseminated to the general public, via the Health EU portal (<http://ec.europa.eu/health-eu>) and press releases.

(5) Sustainability: The sustainability of the project will be ensured through the project website, and through dissemination of the final report and scientific publications among stakeholders. The results of the project, including tabulations, figures and policy recommendations, will be available in the website following the completion of the project. The dissemination will also involve regular updates of new findings in the website in the form of electronic press releases. We will establish communication with other health-relevant projects and websites through which findings of the project can be disseminated.

### *Objectives*

- To ensure the dissemination of the core findings of the project through international publications and press reports
- To develop a project website for the dissemination of information on the project and its findings.
- To support work packages in the publication of findings in scientific journals
- To coordinate liaisons with the Global Burden of Disease expert group on socioeconomic determinants.

### *Description of the dissemination work*

Task 1: A website will be maintained that contains all relevant information about the project. Results of specific WPs will be made publicly available through this website, so as to enhance timely dissemination of intermediate and final results.

Task 2: The results of different WPs will be disseminated by their respective leaders through presentations at national and international conferences, publications in peer-reviewed journals, and dissemination of results among stakeholders in Europe. A main product will be a final report.

Task 3: This WP will act as an advisor for other WPs in the preparation of scientific publications for international journals.

Task 4: This work package will establish direct collaboration with the Global Burden of Disease expert group on socioeconomic determinants in health, and will disseminate the results of the study to the broader international network of this global initiative.

### *Milestones and deliverables*

<i>Date</i>	<i>Milestone</i>
M-3	Development of a communication strategy
M-4	Preliminary version of the website
M-9	D-9: Launch of the website at the Consortium meeting 1 and presentation of the communication and dissemination strategy
M-15, M-21, M-27, M-34	Presenting communication and dissemination strategy overview at steering committee meetings
M-9 to M-36	Constant updates of project progress at website through 'alert' system among network of experts

#### *List of stakeholders*

This knowledge generated by the project is crucial for four major stakeholders: (1) policy makers; (2) health promotion and prevention agencies; (3) the general scientific community; and (4) the Global Burden of Disease project.

### **Work package n°3: Evaluation of the project**

#### *List of parties involved*

Erasmus MC

#### *Description of the work and methodologies*

#### *Tasks:*

- To evaluate the achievement of the specific objectives of the project
- To ensure time-schedules are met and deliverables are completed following the best quality standards
- To ensure that data and analysis are followed according to high methodological standards established for this purpose

#### *Methods:*

Task 1: The WP will assess the achievement of the seven objectives listed in section 2.2 of the main text. It will focus on the indicators for the achievement listed in section 2.3. The scientific progress of the project will be monitored to ascertain achievement of all objectives by the WPs. Incomplete achievement of any of the objectives will be evaluated critically for its causes and possible consequences.

Task 2: This WP will monitor the completion of deliverable and commitment to project objective by each of the work packages. This will be done by regularly contacting WP leaders and monitoring progress and planning of the work envisaged. If deliverables can not be attained at the proposed timing, the causes and possible consequences will be evaluated critically.

Task 3: The WP will ensure that the data collected by WPs is of the highest quality, on the basis of set up protocols for the quality of the data to be obtained. The WP will also use this protocol to examine the quality of the databases constructed. In addition, the WP will establish protocols to ensure that analyses of data are followed according to state-of-the-art and high-quality techniques.

#### *Evaluation strategy:*

The final evaluation strategy will be defined and agreed upon during the kick-off meeting (month 3) among all WP leaders. Overall, we envisage an evaluation strategy will comprise the following elements:

*Evaluation criteria.* The first step is to specify the criteria used to adequately examine to what extent the objectives of the project have been achieved. As a basis, the project will depart from the following criteria for each of the project objectives and activities: (a) *Effectiveness*: The extent to which the project achieved its specific objectives and goals; (b) *Efficiency*: The extent to which the project used its resources efficiently, and provided value for money; (c) *Utility*: The extent to which the project has a potential impact on the main target groups specified, including policy makers, health promotion and prevention agents, and research agents. (d) *Sustainability*: The extent to which the project has led to sustainable changes or benefits that will last after the project has been completed.

*Types of evaluation.* The evaluation strategy consists of the major components, which comprising different set of evaluation activities:

(a) *Process evaluation*: the performance of each of the WPs during the time of the project will be assessed to determine the appropriateness and usefulness of tasks, activities performed and tools applied. Evaluators will also identify potential problems that may lead to delays or deviations in the planned activities and outputs. A formal comparison will be made with the project plan and the actual project implementation.

In order to carry out the process evaluations, two separate activities will be implemented: (a) a formal evaluation of each work package will be made at each of the Steering Committee meetings (months 3, 9, 15, 21, 27, 34 and 36). This will be an internal evaluation that will aim at examining achievement of objectives and identifying potential room for improvement in the work output for the forthcoming stages of the project. For this purpose, two work package leaders will be asked to lead the assessment of another work package during the meetings. They will be asked to comment on the work of each work package and to lead the discussion on the evaluation of their output on the basis of the criteria set up above. (b) At mid-term (week 17), we will ask each work package to prepare a summary of the work they have conducted. This summary will be distributed among external reviewers who will be asked to evaluate the work carried out by each WP. The main output of this review will be to obtain comments for improvement that will ensure the successful completion of the project.

(b) *Outcome evaluation.* The final stage of the evaluation aims to compare the expected objectives with those actually achieved by the project. This evaluation will be carried out at the final stage of the project and discussed during the last SC meeting. It will look at relevant aspects of effectiveness, efficiency, utility, and sustainability of each work package as well as of the project as a whole. The evaluation will also try to identify the factors that contributed to the overall achievement of objectives, as well as factor that contributed to any lack of achievement of objectives.

To carry out this evaluation, external reviewers will be asked to review the work of each work package, as well as the work of the project as a whole. External reviewers will be selected on the basis of their expertise in the area, and they will be asked to provide a written report of evaluation of the output of each work package. The result of this external review will then be reviewed by the project co-ordinator, who will discuss the evaluation with the leader of

each work package and who will make decisions regarding the accomplishment of objectives. The output from this evaluation will form the basis for the final report of evaluation of the project (Deliverable 10).

## **Work package n° 4**

### *List of partners involved*

Lead partner: Erasmus MC

Associated partners: INSERM; UBAH; CHESS; UH; ASL TO3

### *Objectives*

- To adapt methods as developed elsewhere (including methods developed in the Global Burden of Disease study) to the needs of this project.
- · To develop rules for the specification of "counterfactual" scenarios for the distribution of socioeconomic determinants and risk factors.
- · To implement these methods and scenarios in a plan for analysis of data on socioeconomic, morbidity, mortality, diseases and risk factors in Europe

### *Description of the work*

- Estimates of the potential for reduction of health inequalities in Europe have to be based on an understanding of the causes of socioeconomic inequalities in health. We distinguish between two levels of explanation: ultimate causes of inequalities found in unequal access to socioeconomic resources (education, income, ...), and direct causes found in the unequal distribution of specific risk factors (material, behavioural, psychosocial, ...) across socioeconomic groups.
- In the Global Burden of Disease study, methods have been developed for assessing the contribution of a particular cause to the occurrence of health problems, which are based on the concept of the Population Attributable Fraction (which allows one to calculate the proportion of health problems in the population which can be attributed to a specific cause). These methods require availability of data on the current exposure of the population to the risk factor, on the Relative Risk of the associated health problems, and on counterfactual exposures to the risk factor (e.g. a theoretical minimum exposure). We will adapt these methods to applications in the field of health inequalities.
- One important adaptation that is required is a careful specification of "counterfactual" scenarios. General rules for the specification of these scenarios will be developed here. These methods and counterfactual distributions will be elaborated in the form of a detailed plan for analysis, taking into account availability of data in the European Union, and including final data specific.

*Deliverables and links with other work packages*

D-1: Research protocol for “counterfactual” analysis (M-12)

This work package will provide the methodological input for subsequent work in WP7 and WP8.

**Work package n° 5**

*List of partners involved*

Lead partner: INSERM

Associated partners: All collaborating partners listed in section 7

*Objectives*

- To collect internationally comparable data on socioeconomic inequalities in mortality, morbidity, and risk factors in the European Union from national and international sources.
- To prepare a fully documented, harmonized data base that can be used for the analyses required in WPs 4 to 7.
- To provide analytical support to WPs 4 to 7 by tabulating data according to the plan for analysis specified in WP 1 and the "counterfactual" scenarios developed in WP 3.

*Description of the work*

- Data on socioeconomic inequalities in mortality (total and by cause of death), self-reported morbidity (self-assessed health, functional impairment), and risk factors (smoking, alcohol, physical inactivity, overweight/obesity, high blood pressure, cholesterol, high blood glucose) in 2000-2005 will be collected from national and international data sources, and harmonized where necessary. Data sources include national and regional longitudinal census-linked mortality studies, and national and international health interview and health examination surveys. Level of education will be the primary indicator of socioeconomic position, where possible supplemented by level of income and occupational class. An effort will be made to cover as many countries of the European Union (including neighbouring countries like Norway, Switzerland, Russia, ...) as possible. Based on the experiences of a previous project (Eurothine, which covered the 1990s) we expect to be able to include more than 20 countries in the database with at least one health indicator.
- The data will be stored in a harmonized and fully documented database that will be easily accessible for data analyses. This database will be maintained at the coordinating centre (see WP 1).
- Analytical support will be provided to WPs 7 to 10. Data needed for these WPs will be tabulated according to the analysis plans developed in WP 4 and the

counterfactual scenarios developed in WP 6, and following the information needs of the leaders of WP 7 to 10.

*Deliverables and links with other work packages*

D-2: Harmonized data base

This work package will provide the data input for subsequent work in WP6, WP7 and WP8. It will receive data management support from WP1.

## **Work package n°6**

*List of partners involved*

Lead partner: UBAH

Associated partners: EMC; INSERM; CHESS; UH; ASL TO3

*Objectives*

- To elaborate different types of scenarios which will help to assess the contribution of specific determinants and risk factors to health inequalities, and to assess the potential for reduction of health inequalities
- To review the literature (including policy documents and other 'grey' literature) to provide theoretical and empirical underpinnings for these scenarios.

*Description of the work*

- Based on the literature and the guidelines developed in work package 1, a number of counterfactual scenarios will be developed that will help us to assess the contribution of specific determinants and risk factors to health inequalities, and to assess the potential for reduction of health inequalities. We expect that we will develop counterfactual scenarios of four types: (1) Complete elimination of inequalities, by upward levelling of socioeconomic determinants or specific risk factors to the level currently seen in the highest socioeconomic groups. (2) Partial elimination of inequalities, by reducing inequalities in socioeconomic determinants or specific risk factors to the level currently seen in countries with the smallest inequalities. (3) Partial elimination of inequalities, by reducing inequalities in socioeconomic determinants or specific risk factors to the level seen in evaluation studies of interventions and policies to reduce health inequalities. (4) Partial elimination of inequalities, by reducing inequalities in socioeconomic determinants or specific risk factors by an arbitrary 5 or 10%. While scenario 1 gives an indication of the theoretical upper limit to what can be achieved, scenario's 2, 3 and 4 provide a more realistic picture of what be achieved in the real world.
- Scenario 3 requires extensive literature study, and preparation of systematic reviews where these are not yet available.

*Deliverables and links with other work packages*

D-3: “Counterfactual” distributions

This work package will provide the ‘counterfactual’ distributions that will serve as input for the tasks of WP9.

**Work package n°7**

*List of partners involved*

Lead partner: CHESSE

Associated partners: EMC; INSERM; UBAH; UH; ASL TO3

*Objectives*

- To quantify the magnitude of socioeconomic inequalities in mortality, self-reported morbidity, and specific risk factors in the European Union as a whole in the period 2000-2005
- To assess the contribution of specific risk factors to inequalities in mortality and self-reported morbidity in the European Union as a whole and in selected countries in the period 2000-2005
- To make comparisons of the magnitude of socioeconomic inequalities in mortality, self-reported morbidity and specific risk factors between European countries, with a view to assessing the scope for reducing these inequalities

*Description of the work*

- The magnitude of socioeconomic inequalities in mortality, self-reported morbidity and specific risk factors in countries with available data in the period 2000-2005 will be quantified using both relative and absolute measures of inequalities (e.g. the Relative Index of Inequality and the Slope Index of Inequality). Data will be aggregated to the European Union as a whole using appropriate population weights.
- The contribution of specific risk factors to inequalities in mortality and self-reported morbidity in the European Union as a whole and in selected countries will be assessed by applying a "counterfactual" scenario in which all socioeconomic groups receive the risk factor level of the highest socioeconomic group (i.e. type (1), see WP6)
- Where data comparability is sufficient, the magnitude of inequalities in mortality, self-reported morbidity and specific risk factors will be compared between countries, including countries in other continents, to identify the lowest observed inequalities and to provide input in "counterfactual" scenarios (i.e. type (2), see WP6).



*Deliverables and links with other work packages*

D-4: Inequalities in mortality and morbidity report

The work of this package will provide direct input for the estimations made in WP9.

**Work package n°8**

*List of partners involved*

Lead partner: UH

Associated partners: EMC; INSERM; CHES; UH; ASL TO3

*Objectives*

- To quantify the magnitude of socioeconomic inequalities in Healthy Life Years and Disability-Adjusted Life-Years lost in selected European countries in the period 2000-2005
- To assess the contribution of specific diseases and risk factors to inequalities in Healthy Life Years and Disability-Adjusted Life-Years lost in these countries
- To make comparisons of the magnitude of socioeconomic inequalities in Healthy Life Years and Disability-Adjusted Life-Years lost between these countries, with a view to assessing the scope for reducing these inequalities

*Description of the work*

- Two summary measures of population health will be used, i.e. Healthy Life Years (e.g. Disability-Free Life Expectancy (DFLE)) and loss of Disability-Adjusted Life-Years (DALYs). Healthy Life Years will be calculated using the Sullivan method. DALYs lost will be calculated using methods established in the Global Burden of Disease study. Because these summary measures of population health require within-country comparability of mortality and morbidity data (e.g. in their socioeconomic classification), we expect this to be feasible only for a limited number of countries.
- The contribution of specific diseases to inequalities in Healthy Life Years and Disability-Adjusted Life-Years lost will be calculated using decomposition techniques. The contribution of specific risk factors to inequalities in health expectancy and Disability-Adjusted Life-Years lost will be calculated by applying a "counterfactual" scenario in which all socioeconomic groups receive the risk factor level of the highest socioeconomic group (i.e. type (1), see WP6).
- Where data comparability is sufficient, the magnitude of inequalities in Healthy Life Years and Disability-Adjusted Life-Years lost will be compared between countries, including countries in other continents, to identify the lowest observed inequalities and to provide input in "counterfactual" scenarios (i.e. type (2), see WP6).

*Deliverables and links with other work packages*

D-5: Inequalities in summary measures of population health report

The work of this work package will serve as input for the estimations of WP9.

**Work package n°9**

*List of partners involved*

Lead partner: EMC

Associated partners: INSERM; UBAH; CHES; UH; ASL TO3

*Objectives*

- To analyse the impact on health inequalities and on average population health in Europe of "counterfactual" scenarios assuming a more equal distribution of socioeconomic determinants
- To analyse the impact on health inequalities and on average population health in Europe of "counterfactual" scenarios assuming a more equal distribution of specific risk factors

*Description of the work*

- Base-line values for inequalities in mortality, morbidity, Healthy Life Years and Disability-Adjusted Life-Years lost in Europe will be derived from work packages 7 and 8. Where data availability and comparability permit, base-line data will be selected for the European Union as a whole as well as for selected countries representing the variety of the European experience.
- Base-line values for the distribution of socioeconomic determinants will be derived from work packages 7 and 8. Different types of "counterfactual" scenarios for socioeconomic determinants will be quantified using input from work package 6. The impact of these "counterfactual" scenarios on inequalities in mortality, morbidity, Healthy Life Years and Disability-Adjusted Life-Years lost, and on average population health, will be calculated using methods developed in work package 4.
- Base-line values for the distribution of specific risk factors across socioeconomic groups will be derived from work packages 7 and 8. Different types of "counterfactual" scenarios for specific risk factors will be quantified using input from work package 6. The impact of these "counterfactual" scenarios on inequalities in mortality, morbidity, Healthy Life Years and Disability-Adjusted Life-Years lost, and on average population health, will be calculated using methods developed in work package 4.

*Deliverables and links with other work packages*

D-6: Potential for reduction of inequalities

The estimations of this work package will provide input for the policy recommendations developed in WP10

## **Work package n°10**

### *List of partners involved*

Lead partner: ASL TO3

Associated partners: EMC; INSERM; UBAH; CHESS; UH

### *Objectives*

- To discuss the results of the analyses, particularly of work package 9, with sounding boards of policy-makers
- To carry out a review of the existing policies and interventions that are available for tackling health inequalities in the European Union, and to relate these policies to the findings of the project in regard to the potential reduction to be achieved by changing the distribution of specific determinants of health inequalities.
- To identify priorities for entry-points and actions for reducing health inequalities in the European Union as a whole, as well as in selected countries, based on the modelling of the project and the potential for reduction of health inequalities in each country
- To propose realistic targets for reducing health inequalities in the European Union as a whole, as well as in selected countries, based on both the evidence provided from the counterfactual models and the evidence on the potential impact of existing interventions to reduce health inequalities

### *Description of the work*

The work of this work packages involves four separate steps:

- (a) A review of existing policies and interventions to tackle health inequalities at the national and European level will be made. This review will be based on previous experiences of the expert group on evidence-based interventions to reduce socioeconomic inequalities in health determinants and health outcomes, including the outcomes from earlier European-funded projects (e.g., Eurothine).
- (b) Information on existing policies and interventions will then be linked to evidence from the present project on the potential for reduction of health inequalities by focusing in specific determinants. This involves bringing together information from external sources on existing and tested strategies to tackle inequalities in determinants (e.g., smoking), and evidence from the present project on the reduction that can be expected in health inequalities by modifying inequalities in these determinants. These two pieces of information will provide a realistic estimate of what can be achieved in terms of both the

causes of health inequalities, and the available interventions and policies to tackle their determinants.

- (c) Meetings will be held with stakeholders directly or indirectly involved in tackling health inequalities. Meetings will take place at two different levels:
- Two focus groups of policymakers will be recruited: one group of European policymakers (civil servants, politicians, special interest groups, ...); and one group of national policymakers (with a balanced representation from around Europe). Representatives of these groups will be informed about the evidence-base on health inequalities in Europe, on relevant policy options, and on the methodology of this project.
  - These groups will then be convened in structured group sessions to discuss the results of the analyses on the impact of counterfactual scenarios as carried out in work package 9, and to suggest recommendations for health policy and for 'health-in-all-policies'. These structured sessions will place particular focus on the lessons from steps *a* and *b* above, combining information on both the potential reduction of health inequalities from the counterfactual scenarios and the existing evidence on interventions to tackle health inequalities.
- (d) On the basis of these discussions as well as direct input from other work packages and the project consortium, a set of recommendations for health policy and for 'health-in-all-policies' will be developed. These will cover at least two important areas: priorities for entry points for policies (e.g. socioeconomic determinants versus specific risk factors) and realistically attainable targets for reducing health inequalities in the foreseeable future.

*Deliverables and links with other work packages*

D-7: Policy recommendations

The output of this work package is based primarily on the results of WP9, and on the review of existing policies and interventions to tackle health inequalities. The report translates the findings of all content work packages into policy recommendations.

## Measures to ensure visibility of Community co-funding

In all communications regarding the project and its results, we will explicitly state that the project has been supported and co-funded by the European Community. The results of the project will be made available to all relevant state holders, including policy makers, health promotion and prevention agencies, the general scientific community, and the Global Burden of Disease project. The website will be freely available to scientists, policy makers, private stakeholders and the general public, and will explicitly mention the support of the community. The results of this project will also be disseminated to the general public, via the Health EU portal (<http://ec.europa.eu/health-eu>) and press releases that highlight the support and co-funding of the commission.

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