

# D 1.1

## Summary Report of Kick-Off Meeting and Launch Event

1<sup>st</sup> Consortium Meeting

WP 1: Management and Coordination

Responsible Partner: Imperial College London

Contributing partners: ZADIG

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## Document Management

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D1.1 Project launch and kick-off meeting, London 2015

Task: 1.2 (b) - The kick-off and annual consortium meetings.

Milestone: MS1- Preparation for the Kick-off meeting; factsheets, etc.

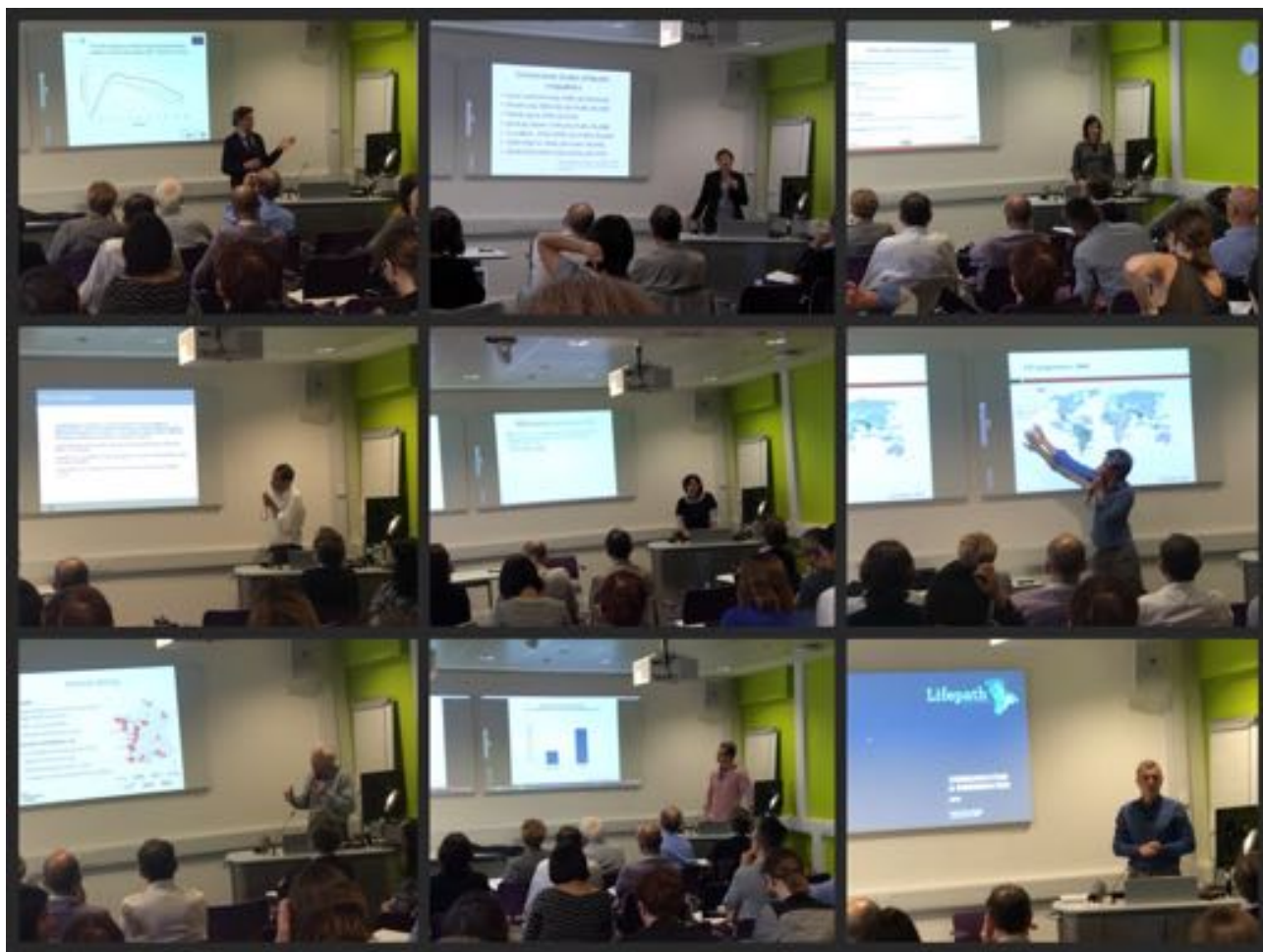
Leader: Imperial College London – Other contributors: Zadig

### History of changes:

Vn	Status	Date	Organisation / Person responsible	Reason for Change
V1	Draft	26/06/2015	Imperial College London / Paolo Vineis	Editing
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**PICTURE OF PARTICIPANTS AT THE LIFEPATH LAUNCH MEETING**



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## LIFEPATH PROJECT: AN OVERVIEW

The dramatic differentials in healthy ageing, quality of life and life expectancy between individuals of different socioeconomic groups, is a major societal challenge facing Europe. The overarching aim of the LIFEPATH project is to understand the determinants of diverging ageing pathways among individuals belonging to different socio-economic groups. This will be achieved via an original study design that integrates social science approaches with biology (including molecular epidemiology), using existing population cohorts and omics measurements (particularly epigenomics). The specific objectives of the project are:

- a) To show that healthy ageing is an achievable goal for society, as it is already experienced by individuals of high socio-economic status (SES);
- b) To improve the understanding of the mechanisms through which healthy ageing pathways diverge by SES, by investigating life-course biological pathways using omic technologies;
- c) To examine the consequences of the current economic recession on health and the biology of ageing (and the consequent increase in social inequalities);
- d) To provide updated, relevant and innovative evidence for healthy ageing policies (particularly “health in all policies”) that address social disparities in ageing and the social determinants of health, using both observational studies as well as an experimental approach based on the existing "conditional cash transfer" experiment in New York.

To achieve these objectives we will use data from three categories of studies: 1. Europe-wide or national surveys combined with population registry data; 2. Cohorts with intense phenotyping and repeat biological samples (total population >33,000); 3. Large cohorts with biological samples (total population >202,000). The cohorts will provide information on healthy ageing at different stages of life, based on the concepts of life-course epidemiology ("build-up and decline") and multi-morbidity.

## 1. List of Participants

#	Name	Institution
1	<b>Paolo Vineis</b>	Imperial College London
2	<b>Terrence Simmons</b>	Imperial College London
3	<b>David Blane</b>	International Advisory Board/ Imperial College London
4	<b>Anne-Claire Vergnaud</b>	Imperial College London
5	<b>Raphaële Castagné</b>	INSERM, Toulouse   Imperial College London
6	<b>Angelo d'Errico</b>	University of Turin
7	<b>Fulvio Ricceri</b>	University of Turin
8	<b>Giuseppe Costa</b>	University of Turin
9	<b>Cathal McCrory</b>	Trinity College Dublin
10	<b>Richard Layte</b>	Trinity College Dublin
11	<b>Dario Greo</b>	Finnish Institute of Occupational Health
12	<b>Piia Karisola</b>	Finnish Institute of Occupational Health
13	<b>Michelle Kelly-Irving</b>	Inserm, Université Toulouse III
14	<b>Cyrille Delpierre</b>	Inserm, Université Toulouse III
15	<b>Silvia Stringhini</b>	University of Lausanne, Switzerland
16	<b>Dusan Petrovic</b>	University of Lausanne, Switzerland
17	<b>Silvia Fraga</b>	University of Porto
18	<b>Marcel Goldberg</b>	INSERM Paris
19	<b>Marie Zins</b>	INSERM Paris
20	<b>Luca Carra</b>	Zadig
21	<b>Roberto Satolli</b>	Zadig
22	<b>Giulia Candiani</b>	Zadig
23	<b>Giorgia von Berger</b>	Zadig
24	<b>Sergio Cima</b>	Zadig
25	<b>Wilma Nusselder</b>	Erasmus MC
26	<b>Pascale Gerbouin-Rérolle</b>	Inserm, Villejuif
27	<b>Françoise Clavel-Chapelon</b>	Inserm, Villejuif
28	<b>Michael Marmot</b>	UCL
29	<b>Mika Kivimaki</b>	UCL
30	<b>Ioannis Bakolis</b>	Imperial College London
31	<b>Florence Guida</b>	Imperial College London
32	<b>Karin van-Veldhoven</b>	Imperial College London
33	<b>Rosella Alfano</b>	Imperial College London
34	<b>Michelle Plusquin</b>	Imperial College London
35	<b>Marc Chadeau</b>	Imperial College London
36	<b>Mauricio Avendano</b>	London School of Economics
37	<b>Emilie Courtin</b>	London School of Economics
38	<b>Silvia Polidoro</b>	HuGeF Foundation
39	<b>Gianluca Severi</b>	HuGeF Foundation
40	<b>Beatrice Fervers</b>	International Advisory Board/IARC
41	<b>Meena Kumaria</b>	University of Essex
42	<b>Miquel Porta</b>	IMIM-VB-PRBB
43	<b>Francesca Galea</b>	Imperial College London
44	<b>Ann Hever</b>	Trinity College Dublin

## 2. Programme

The two-days programme for the Kick-off meeting consisted of series of keynote presentations, breakout discussion groups, plenary and panel discussions. The meeting was chaired by Prof Paolo Vineis.

A **workshop** on Healthy Ageing took place the day before the Kick Off meeting.

### Day One:

The opening day of the Kick Off meeting featured welcome and introductory remarks by Sir Michael Marmot on the concept of **Health Inequities and healthy ageing**. Paolo Vineis shared the overall project design, followed by the description of a first block of cohorts involved in the project.

The key note address of the afternoon entitled “**Healthy aging across the life-course**” was delivered by David Blane, of Imperial College, London, while Richard Layte, of Trinity College, Dublin, spoke about the “**Economic Downturn in Ireland**”, based on the study “Growing up in Ireland”, focusing on the stressful consequences of the economic crisis in this country. Mauricio Avendano-Pabon (London School of Economics) described the “**Conditional cash transfer programmes**”, with a particular attention on the recent New York experiment. The first day of the Kick Off meeting ended with a **second stage** of cohorts description, focusing on SES and aging measures, and the **closing remarks** by Paolo Vineis underlying the quantity and quality of data presented. The task it to make sense of all the data and identify some lines of actions and hypotheses.

### Day Two:

Day two opened with the presentation of “**The experience of BBMRI and Maelstrom**” by Marcel Goldberg (INSERM), whose objectives are the implementation of data harmonization and data sharing models for collaborative epidemiological research. A round table followed about **Harmonization of data from cohorts** (chaired by Silvia Stringhini, Angelo d’Errico and Paolo Vineis) dealing with some practical considerations on how to identify hypotheses and put them into practice and how to select variables. Paolo Vineis ended the discussion listing the deliverable deadlines for the coming months. The second half of the morning was taken by the **Presentations from WP Leaders on tasks, deliverables and milestones**.

In the afternoon, the **Administrative issues** were addressed by Terrence Simmons (Imperial College, London). Beatrice Fervers gave an insight on the “**Ethical issues, including DTAs, MTAs**” (Lyon University). **A Wrap-up of major decisions, organizational challenges and work planning - round table with WP leaders, led by Paolo Vineis, closed the meeting.**

### LIFEPATH Healthy Ageing Workshop (WP7) Wednesday 10th June 2015

Hour	Session
14:00 – 14:20	Welcome and introduction: An operational definition of healthy ageing - Michelle Kelly-Irving, INSERM/ University of Toulouse
14:20 – 15:05	Measuring the social environment across the life course – Richard Layte, Trinity College Dublin (30 minutes presentation, 15 minutes discussion)
15:05 – 15:50	Measuring health and ageing across the life course in the statistics; monitoring well-being beyond GDP – Giuseppe Costa, University of Turin (30 minutes presentation, 15 minutes discussion)
16:05 – 16:45	Social-biological transitions: how does the social become biological? - David Blane, Imperial College London (30 minutes presentation, 15 minutes discussion)
16:45 – 17:30	Round table discussion on application of presentations to an operational definition of healthy ageing (Richard Layte, Giuseppe Costa, David Blane & Mel Bartley)
17:30 – 18:00	What is our operational definition? Summary & way forward - Michelle Kelly-Irving

### LIFEPATH's Kick-off Meeting Thurs. 11th – Fri. 12th June 2015

Day	Hour	Session
<b>Thurs. 11th</b>	09:00 – 09:30	Introduction by Michael Marmot
	09:30 – 10:00	Study Design of LIFEPATH – Paolo Vineis
	10:00 – 11:00	Description of cohorts, with particular focus on SES and ageing measures - Part 1 by representatives of cohorts (10 minutes each, 5 cohorts)
	11:15 – 12:30	Description of cohorts, with particular focus on SES and ageing measures - Part 2 by representatives of cohorts (10 minutes each, 6 cohorts)
	13:30 – 14:00	Healthy ageing across the life-course – David Blane
	14:00 – 14:30	The economic downturn in Ireland – Richard Layte
	14:30 – 15:00	Conditional cash transfer programmes – Mauricio Avendano- Pabon Break
	15:15 – 16:30	Description of cohorts, with particular focus on SES and ageing measures - Part 3 by representatives of cohorts (10 minutes each, 7 cohorts)
	16:30 – 17:00	Summary of the day - Paolo Vineis
	<b>Friday 12th</b>	09:00 – 09:30
09:30 – 10:30		Harmonization of data from cohorts (chaired by Silvia Stringhini, Angelo D'Errico and Paolo Vineis) (including organizational issues, data transfer, ethics)
10:45 – 12:30		Presentations from WP leaders on tasks, deliverables and milestones
13:30 – 14:00		Administrative issues – Terrence Simmons
14:00 – 15:00		Ethical issues including DTAs, MTAs - Beatrice Fervers
15:00 – 16:00		Wrap-up of major decisions, organizational challenges and work planning – round table with WP leaders – led by Paolo Vineis
15:00 – 16:00		AOB, closure and adjourn



### 3. Action points arising from the meeting

The present document summarizes the main decisions and action points arising from the KOM.

#### 3.1 Decision

The **workshop of WP7** (held on June 10) led to some important definitions/refinements of SES and healthy ageing that will be used in the consortium (a report is prepared separately by M Kelly-Irving):

- 1 The definition of SES is complex and composite, and includes measures of status and measures of social class (Layte). In principle social class is easier to measure (Blane).
- 2 We will need to consider secular phenomena related to events that took place historically (e.g. the war).
- 3 In principle we do not address (or address in a limited way) access to care. Most cohorts do not have information, while some do.
- 4 A methodological problem to address will be selection bias: by moving from early to late ages we will study survivors, i.e. people less susceptible to disease (“convergence in inequality” between SES strata).
- 5 We will adopt a stratified approach to the use of cohorts. Since cohorts have a very different background of variables and information, we will classify them into categories (strata), from the poorest (e.g. EPIC-Italy) to the richest (e.g. Whitehall II) in terms of SES measures and health outcomes. The number and definition of strata will be defined once all the cohorts have been inspected. The definition of strata will also depend on **stem concepts** to be used to construct SES measures. One of the major issues will be comparability of cohorts.
- 6 Cohorts have individual measures of SES. However, it is important to also give a context to the cohorts (e.g. historical and social). This can be done using aggregated variables available from national statistics/social surveys. WP2 and WP3 need to liaise.
- 7 The following simplified definition of healthy ageing is proposed as a starting point (more will be found in the WP7 workshop minutes): “**life expectancy at age 65 without activity limitations**”. We will use both hard indicators (death) and functional indicators (activity limitations), though whenever possible we will emphasize the second.
- 8 We face two potential approaches to data analyses: hypothesis-driven vs data-driven. It is likely we will use both but this needs to be clarified. In principle, whenever possible we should specify a priori hypotheses, e.g. on the paths to inequality in health and related mechanisms. Conceptual clarity may lead to starting with simple a priori models, based on simple definitions of SES (social class), healthy ageing (death) and intermediate steps (Blane). But then we can progressively make these models more and more complex (e.g. “family stress model”).

#### Other issues:

The life-course stage will be a key component to consider for identifying appropriate health measures. The study of healthy ageing from conception is a highly original facet of LIFEPATH and leads to methodological and conceptual specificities.

The classification of cohorts into “intense phenotyping” and “others” does not reflect reality (there is much misclassification) and is abandoned.

### 3.2 Actions points

- 1 **Who and how to formulate hypotheses** – this will be done as a transversal task led by Cyrille Delpierre involving work package leaders from WP2, WP3, WP5, WP6, WP7 and Mel Bartley as external consultant. They will work on hypothesis formulation throughout the project in collaboration with Working Groups.
- 2 The first papers to work on will be **1 major paper on build-up phase** and chosen outcomes in children/adolescent cohorts (lead Kelly), and **1 major paper on decline** and chosen outcomes (lead Stringhini and Kivimaki)(this needs defining healthy ageing and exogenous variables in both phases by WP7). Then this approach will be extended to other selected hypotheses/papers by creating Working Groups.
- 3 **We create Working Groups** with participation from all relevant work packages:
  - WG for “build-up” phase led by Richard Layte
  - WG for “decline phase” led by Silvia Stringhini and Mika Kivimaki.Others are invited to nominate themselves as members of the WGs by e-mailing to the WG leaders (Silvia or Michelle/Richard). WG leaders will also propose membership for WGs. Please notice there is no relationship between membership and authorship of papers that will be established on a different basis.
- 4 **Data harmonization** – this is done centrally in Grugliasco, Italy (Angelo D’Errico, Fulvio Ricceri). It will start with SES variables, then health variables and then covariates, separately by build-up and decline (i.e. children/adolescent cohorts and adult cohorts). Harmonization will be done only when at least 2 cohorts are available for a certain purpose. **Action point for all cohorts: please fill the scheme distributed by Angelo, Fulvio and Silvia to allow harmonization.** Please read all e-mails from them and respond as soon as possible.
- 5 **DTA and MTA** – Paolo has distributed DTAs and MTAs and sent an e-mail concerning access to cohorts that require an application for access to data. **Action point for all cohorts:** please check the DTAs and MTAs with your administration and let Paolo know if they are acceptable. Then possibly fill them with your details and send them signed (in copy to Paolo) to Angelo D’Errico. Paolo Vineis suggests including a general statement on the data that are transferred to avoid writing a detailed list of variables: **“SES and health data relevant to the LIFEPATH consortium”**. This worked in other consortia. A pre-filled version of the DTA (with the project summary and recipient information) has been sent to all cohorts representatives. Paolo will take care of requests for access to cohorts.
- 6 Marcel Goldberg has made a very interesting presentation on **the Maelstrom experience for data harmonization** across cohorts. We will explore with him and Grugliasco whether it is useful to liaise with them and use their experience. We will explore whether Fulvio should go to Montreal to learn from their experience.
- 7 A Working Group has been created **on cohort selection for biomarker measurement** (Lead Silvia Polidoro and Paolo; including Silvia Fraga, Cathal McCrory, Dario Greco, Mauricio Avendano) – Others are invited to candidate themselves. We need to utilize samples from 1000 subjects to measure inflammatory markers and methylation twice (before and after the economic downturn), possibly from cohorts in Ireland and Portugal (total 2,000 samples). The original candidate cohorts were TILDA, Generacao 21 and EPIPORTO. It is proposed that the WG examines the slides of all cohort presentations plus the templates for harmonization, one for variables and one for biological data (distributed by Silvia Polidoro) to identify the most suitable cohorts. The list of samples is due by the end of October to allow shipment to the labs before the end of the year.
- 8 Paolo and Terrence will propose dates for the teleconferences of the **Project Steering Board** (from July). Next meeting: it will be in the summer 2016. Location to be decided.

**Deadlines:** we need to stick to very close deadlines:

3. Working Group membership - end of June. Proposal for 2 papers from the WGs - end of July.
4. Completion of template to be sent to Grugliasco: end of June
5. DTAs, MTAs - mid July
7. Decision about the cohorts will be made by the end August and will include: List of samples (end of October); Sample shipment (end of year).

## 4 Press and Media

The dissemination effort has begun just before and during the LIFEPATH's kick-off meeting. The communication staff was very active in covering the event. Together with the Press Office of Imperial College, they disseminated the first Press Release to a list of 3,000 scientific journalists. The News item has been taken by a good number of journalists and websites.

### Press release



### On media



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

How social inequalities influence healthy ageing



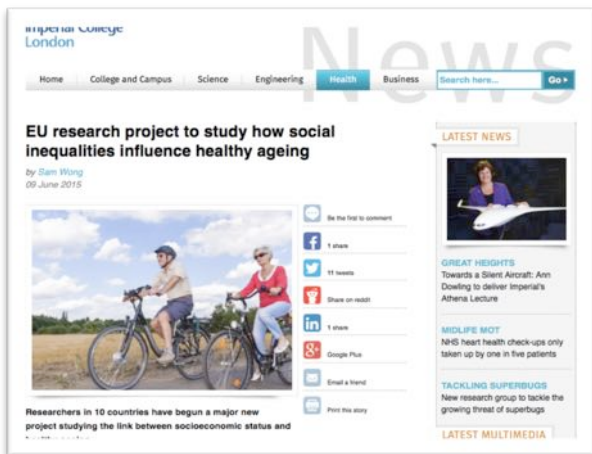
[www.healthdesk.it](http://www.healthdesk.it)

LIFEPATH, invecchiare in salute un diritto anche dei meno abbienti



[www.sciencebusiness.com](http://www.sciencebusiness.com)

Imperial College London: EU research project to study how social inequalities influence healthy ageing



[www.imperial.ac.uk](http://www.imperial.ac.uk)

EU research project to study how social inequalities influence healthy ageing



[www.news-medical.net](http://www.news-medical.net)

EU research project to study how social inequalities influence healthy ageing

By the end of July 2015 the communication staff will send out a news press release which will summarize the main results of the first meeting of LIFEPATH. In the meanwhile they will publish on the project's website and on the project's Youtube channel 10 video interviews to WP leaders and other LIFEPATH's researchers carried out during the conference, each in their native language (English, Italian, Finnish, Dutch, French, Spanish) in order to give the idea of the multinational and multicultural nature of the project and to hook as many people as possible.

**People interviewed:**

- Michael Marmot, UCL
- Richard Layte, Trinity College Dublin
- Mauricio Avendano, London School of Economics
- Michelle Kelly-Irving, Inserm, Université Toulouse III
- Cyrille Delpierre, Inserm, Université Toulouse III
- Silvia Stringhini, University of Lausanne, Switzerland
- Mika Kivimaki , UCL
- Marcel Goldberg, INSERM, Paris
- Imperial College London
- Wilma Nusselder, Erasmus MC
- Marc Chadeau, Imperial College London
- Paolo Vineis, Imperial College London

## 5 Minutes of the Kick Off meeting

### 5.1 LIFEPATH's Kick-off Meeting - 11th June 2015 - Imperial College London - St. Mary's Campus

#### 09.00-09.30 - Introduction by Michael Marmot

Objective of the network is trying to get the implications of research into practice (developing policies), i.e. to translate the research results into action.

**Healthy ageing** begins at conception or even before: the life-course is vital, because healthy ageing depends on how people get to ageing during the whole life-course.

The office for National Statistic shows Life expectancy and disability-free life expectancy and neighbourhoods classified into Income Deprivation (1999-2003). When considering the healthy ageing, we should take into account not only the life expectancy, but also the quality of life (a life free from disability). The differences between disadvantaged classes and higher classes are even more dramatic: the most deprived people have a shorter life than the people with the least deprived conditions and they also have around 20 years of difference in life with disability.

Choosing an approach looking at the life-course means taking into consideration the positive and negative effects on health and wellbeing through an entire life (from the pre-natal stadium to death) and on the basis of that **6 domains of recommendations for policies** were created:

- early child development
- education and life-long learning
- employment and working conditions
- minimum income for healthy living
- healthy and sustainable places to live and work
- prevention (with a social approach)

We should consider many factors and promoting policies that take into account not only material wealth, but also **mental health**.

English Longitudinal Study of Ageing (ELSA) statistics show that at 80+ 60% people say their health is good/very good: this mean that increasing age doesn't mean your health is deteriorating, as well as younger age doesn't necessary mean you are in good health (at age 50-54, 20% of people describe health as fair or poor): self- reported health within population (not across population as a national predictor), as individuals, is a good predictor of mortality.

People social position and professional position are influencing data in terms of healthy ageing: this means that, concerning health, if one had the possibility to choose, it would be better for him to choose to be in an higher social class (professional and managerial) than 15 years younger in a lower class routine and manual). How are we going to explain that, as LIFEPATH team?

Wealth gives you security: the wealthier you are, the more you are resistant to shocks.

In the future, it will be necessary to **implicate attention not just on the concentration on incomes, but on the concentration of wealth**. Wealth is related to health: the more wealthy you are, the less financial crisis can affect you, because you will spend a minor percentage of your having in basics if compared to the poorest people (the poorest people make a choice between heating and eating, and this does affect health)

Some other elements linked to health in ageing:

Being married is better and having social support from your husband/wife relates with depression and with life satisfaction

Activities of Daily Living (ADL) are linked to depression, as well as the access to amenities

This is to say that biological markers are important, but asking questions of how social position cause ill health is really very important and the biological understanding is part of that.

The reason we want to analyse the social inequalities in health, is that we can do something. LIFEPATH is potentially a great contributor to the advancement of the social policies: studying the key determinants through the life-course of healthy ageing can be a really important contribution.

Questions/Comments:

(Miquel Porta): *If we adjust for the income and material conditions, would the poor enjoy life more than the richer? Do the poor have something that attenuates the burden of income, working and environmental conditions?*

If you look at self-reported health at older ages and at 3 markers of social position (education, income and material deprivation), they are correlated. If you put the 3 into a model together, income drops up completely. That's a way of saying that it is not income; it's how income relates to living conditions, but education is still very important. Where the educational gap is lower, also the health gap is lower.

**09.30 - 10.00 Study Design of LIFEPATH - Paolo Vineis**

In-utero exposures count and early life has a long-term impact. There is a life-trajectory (David Blane) based on two phases: a **build-up phase** and a **decline phase**. If you are poor you can have trouble in both of the phases: in LIFEPATH we will address our interest to both of the phases, making advantage of all the data coming from the different cohorts.

Life-course SES influences healthy ageing through different pathways (environmental exposures, psychosocial exposures, behavioural exposures) and different biological mechanisms.

Depending on the SES, the speed of ageing is different: people in the lower SES have a quicker speed of ageing (EPIC cohort).

Epigenetic is a kind of imprinting left by the environmental exposure.

We will use data from 3 categories of studies from Europe, USA and Australia:

1. Europe-wide/national surveys
2. Cohorts with intense phenotyping and repeated biological samples
3. Large cohorts with biological samples

Metabolomics, gene methylation and transcriptomics will be performed.

Presentation of WP1 - Project management (organisation of the work and structure of the project).

**10.00 - 11.00 - Description of cohorts**

- ***The Whitehall II Study, UK (presented by Mika Kivimaki)***

It starts from the Whitehall Study from Michael Marmot: taking into consideration the same cohort and analyzing more in depth which mechanisms can explain those results. This study includes also women.

This is an occupational cohort; biological data have been analyzed 7 times and the cohort has now 30 years of follow-up (people were 30-55 at the beginning). The early-life is based on retrospective information.

The participation rate is very high; electronic health records are also available (e.g. hospitalization).

500 people have been enrolled in a sub-study focusing on Brain MRI through blood analyses.

Question:

(Richard Layte) *When people stop being a civil servant, do they stop following the cohort?*

No, they continue to be part of the cohort, so we have the opportunity of monitoring which effects can a shock in the working life produce.

- ***TILDA - The Irish Longitudinal Study on Ageing, Ireland (presented by Cathal McCrory)***

Respondents aged 50+ in Ireland, contacted through the Irish Postal Service and the Ordnance Survey Ireland: 62% of people responded (8.504).

In terms of study design, it is very similar to ELSA: self-completed questionnaire, detailed clinical health assessment, some nurses sent home to measure health.

In definition of SES: parents occupation and educational attainment, childhood socio-economic circumstances at age 14, childhood residency; regarding the present condition: education, employment status, occupational position, income, health insurance status, home ownership, total assets, total debts, total wealth.



Ageing conditions were measured by inviting people to go to the clinic and measuring: musculo-skeletal, anthropometric, cardiovascular, vision and cognition status; frailty phenotypes were measured through self-reports frailty and self-based frailty; blood biomarkers.

- ***Generation 21, Portugal (presented by Silvia Fraga)***

First Portuguese birth cohort: it aims at characterizing pre-natal and post-natal development, to understand the state of health in adolescence and adulthood.

The recruitment was done within the maternity units in the metropolitan area of Porto; participation rate of 90% at the baseline (8.647 participants).

Information on birth, 4, 7 and 10 years. The data were collected through questionnaire, medical records, blood samples, anthropometry. SES indicators were mostly collected through the mothers.

Stored samples of total blood from children and mothers.

#### Questions

(Richard Layte) *Talking about amenities in SES indicators, is it a deprivation measure? And was it related to collective amenities or private?*

Mothers were asked to report the amenities when they were 12 years old; it was referred to private amenities (like washing machine at home, e.g.) and it was just asked to say if they had one or not.

- ***EPIPORTO, Portugal (presented by Silvia Fraga)***

It is the first population-based cohort in Portugal and it aims at assessing the health determinants among adults; this study was the base for other studies.

Participants were already part of other European studies, they were included in control studies of cancer and myocardial infarction.

Participants, 18+ aged and Portuguese, were recruited by random digit dialing. The first recruitment was done in 1999.

The questions regarding SES indicators were about parental occupation, educational level, current and past occupation, marital status, social class and residence. The question about their income was eliminated due to the fact that participants didn't feel comfortable in giving information about that.

Information on self-reported diseases and other (e.g. time in bed) intermediate information was collected (domestic violence, social support, stress, reproductive history, etc.).

#### Questions

(Paolo Vineis) *This first set of presentations was about cohorts with dense phenotype information, including functional information. Are the cohorts in Portugal and Ireland able to address the impact of economic downturn based on the period of recruitment and follow ups?*

This is one of the goals of the studies

(Silvia Polidoro) *Is there the possibility to use the blood for methylation?*

We do not have total blood stored for EPIPorto at baseline (before economic downturn) but DNA was extracted from blood samples (for 1000 participants at baseline) in the scope of a collaborative study on gastric cancer to identify genetic polymorphisms related to pro-inflammatory cytokines: it is possible to use a subsample of these subjects for methylation

- ***The Airwave health monitoring study, UK (presented by Anne-Claire Vergnaud)***

This is a prospective cohort study that focuses on the British police population. It started in 2004; the age range is 18-70 years old people and 42.000 subjects were recruited for the study.

Methodology: Questionnaire + comprehensive health screening (blood and urine samples stored in liquid nitrogen) + food diary; self-reported level of stress.

- ***SKIPOGH, Switzerland (presented by Dusan Petrovic)***

Population and family-based cohort, started in 2009 in 3 Swiss regions (Geneva, Lausanne and Bern). It currently counts 1.100 participants. It aims at investigating genetic and environmental determinants of hypertension and related diseases.

The baseline was in 2009-2013; a first follow up started in 2012 and a third one will probably take place within 5 years.

Participants (age 18-90) filled a questionnaire and were medically examined; the SES indicators were a combination of adult life indicators in the first wave. Other indicators of SES in early life were added in the second wave (recruitment ongoing). Intermediate factors are health behaviours, sleep quality; diet, perceived stress and exposure to air pollution, and others.

Questions:

*What was perceived stress and how do you plan to measure it?*

Participants were asked “Could you report you level of stress from 0 to 10”?

The lower SES individuals have lower stress according to this question.

There is currently a search for funding; biological measurements will be made in urine

(Dario Greco) *Did you have any information on the blood composition when you collected samples?*

There was partial information: we don't differentiate the type of leucocytes, but we do in broad categories; it is lymphocytes or monocytes but not CD4 or CD8.

- ***Colaus, Switzerland (presented by Silvia Stringhini)***

Population-based study in Lausanne (2003-2006). The aim was to investigate the epidemiology and genetic determinants of cardiovascular risk factors and metabolic syndrome.

A first follow up was conducted in 2009-2012; a second one started in 2014 and hopefully will come to an end during the LIFEPATH project in 2017.

The participation rate was 42%; since the aim of the study was to investigate the genetic determinants of cardiovascular disease, the selected group of population was only constituted of 6188 Caucasians aged 35-75 years. The 35% of participants are immigrants, which is very common in Switzerland; the mean age is 53.

Colaus has a quite complicated study design because of the subsamples: at each of the three waves of the study, participants were invited to take part to the so-called “Psycolaus study”, in which they also undertake a detailed psychiatric assessment, which gave a lot of psychiatric indicators. At the first follow-up a subset of participants underwent polysomnography.

Colaus has few SES indicators: participants were asked about their occupation and they had only 5 possible answers. A detailed socio-economic questionnaire was introduced in the second follow-up which is now ongoing.

Intermediate factors: very detailed sleep questionnaire and stressful/negative events and exposure to air pollution and noise.

- ***Growing Up in Ireland, Ireland (presented by Cathal McCrory)***

Growing Up in Ireland is a national longitudinal study of childhood, made of a birth cohort (11.000 nine-months-old) and a middle-child cohort (8.500 nine-years-old).

Were contacted the 11.134 children born in Ireland in 2007, with a 69% positive response.

The data were collected through questionnaires to primary caregivers (mainly the mothers) and secondary caregivers (mainly the fathers).

Children for the middle-child cohort were selected at school, so also the teacher and the other school components were interviewed.

This study doesn't have particularly strong biological measures; it has anthropometric measures at 9 months of age.

- **EPIC, Italy (presented by Paolo Vineis)**

This is a non-intensive phenotyping cohort.

47.000 people were recruited in Italy: the aim of the study was to investigate diet and cancer.

The methodology was constituted of questionnaire, measuring of anthropometry, blood pressure.

A follow up is periodically updated (last update in March 2015) to verify cancer diagnosis: this permits to identify incident diabetes, cancer, cardiovascular diseases, etc.

The **harmonization of covariates in ESCAPE**, which is a big study on air pollution (800.000 subjects across Europe) can be a reference model for the harmonization of data in LIFEPATH: The population was stratified according to level of information (from the lowest: gender, socio-economic status, smoking, to higher strata).

Starting with relatively simple variables, it was possible to classify people in a functional and efficient way.

Questions:

*Do you have any information on what medication people are receiving?*

This information has been collected during the blood drawing but they still need to be coded; more, the study has a linkage to the regional drug prescription registers that allows to collect data on that and some information on the hospitalization of people related to specific diseases (e.g. diabetes)

- **E3N, France (presented by Françoise Clavel-Chapellom)**

Started in 1990, this is a prospective cohort, part of EPIC, composed of women (98.995), mainly teachers, aged between 40 and 65. It began to be part of EPIC study in 1993.

The aim was to study women's chronic diseases, mainly breast cancer, but also diabetes, asthma, depression, cardiovascular diseases.

Up to now participants filled 11 questionnaire (80% response rate).

The study followed two generations of women and the third generation will be involved in the E4N

Questions:

*(Paolo Vineis) Have you ever measured any omics in the E3N?*

Yes, in Lyon metabolomics has been measured on 700 cases of breast cancer

- **NCDS, UK (presented by Michelle Kelly-Irving)**

British cohort established in 1958 (p.a. Alicia Goldman) - It is an open access study on 18.555 participants and it is the only one that goes from birth to the age 95, taking into consideration the whole life-course.

The children born in one week in 1958 in Britain were included in the study.

In this stage of the cohort there are three generations of participants.

Most data are available by End User Licence from UKDS.

Questions:

*(Silvia Stringhini) How can we have the data from NCDS? Should we send the variables once we have selected them and then they will send us the data from the cohort?*

To have the data you register on the data archive and there you can find all the data you need. For specific medical data you should have a special licence and you have to ask for it. We can ask further details if we need any clarifications

*(Paolo Vineis) The classification between intensive and less intensive phenotyping was proposed in the original project, but it was a bit rough. The classification needs to be revised.*

### **Afternoon session - SES and Health: different perspectives**

The afternoon starts with a seminar about **conceptual approaches to SES**: speakers are David Blane, Richard Layte and Mauricio Avendano-Pabon

#### **13.30 - 14.00 Healthy ageing across the life-course (David Blane)**

New dynamics of ageing programs in UK (the data come from the ONA - Office of National Assistance in England and Wales) have been measured based on the analyses of mortality rates during the 5 years before the State Pension Age (which is 60 years for women and 65 years for men), from 1971 to 2001: **the mortality rate in this cohort fell of ⅓ in 30 years.**

It's advisable, when speaking about healthy ageing, to keep the focus on the real demographic significant events and the main driver which is this fall in mortality in the late middle age.

In Social Gerontology this phenomenon is called the **"third age"** (Peter Laslett): a new stage in the life-course of maybe 15-20 years, in which for the first time individuals can focus on themselves and are in a non-stressful situation (good physical conditions, good pension, no worries about children or job, etc.). This is a new interesting phenomenon for Sociology.

**Social Class**: position in the occupation within the social division of labour. The social division of labour is the system of mutual interdependence by the human populations. This is a very specific thing, not a vague thing, and it is operationalised by the terms and conditions of employment.

These characteristics can be validated (i.e. European Union membership)

The Office for National Statistics Socio-Economic Classification (NS-SEC) adopted **new indicators for the measure of social class** in official statistics in 2001: the indicators can be aggregated in different ways.

The most commonly used is a **7 class version** (Higher managerial & professional; Lower managerial & professional; Intermediate; Self-employed; Low supervisory & technical; Semi-routine; Routine): this is not a hierarchical system, you can't talk about high class and low class because this is the language of status, designed around the concept that there are some people that are superior to others. In the social class system people are interdependent; there is no one superior to others.

**Death** is a simple concept for measuring differences in social classes (higher social classes have a 3,5 times lower mortality rate than the lower social classes).

In LIFEPATH, we should firstly take into consideration:

- concerning healthy ageing, the fall in mortality in late middle age and the sociological third age
- in terms of the SES, we should consider the social class.

**Lag effect**: If you look cross-sectional you can see that the mortality rate is much smaller for the advantaged class than the disadvantaged class; but if you look at the duration of life for the most disadvantaged social class, there is a 20 to 30 years lag between the changes in mortality rate of the most advantaged and the most disadvantaged. It is a fluid system, nothing is fixed.

**Area deprivation**: you can cut England in 5 residential areas on the basis of the most and less deprived areas. This system was used to measure the disability-free life expectancy at age 65 in England.

Advice for LIFEPATH work:

- Conceptual clarity, measurement precision
- All the hypotheses should be socially and biologically plausible
- Anticipate greater complexity when moving from social class to SES and from mortality to other less precise measures

- Use a comprehensive model of socio-biological transitions.

Questions:

*What are the expectations about the self-employed people who are in the middle?*

Self-employed people are an interesting case, because, as long as they continue working, they have a quality of life that is similar to the more advantaged social classes, but as they retire, their quality of life decrease is similar to more disadvantaged social classes because their pension is low. They have a mix of strength (they don't have a boss, which means great autonomy during the working period) and weakness (they don't have a pension scheme, so they don't have much money after retirement).

**14.00 - 14.30 - The economic downturn in Ireland (Richard Layte)**

Starting from the study "Growing Up in Ireland", the effects of economic recession on children are studied at 3 different moments: at the age of 9 in 2008, in 2010 and 2013 (before and at the peak of the recession).

Before expanding (1990), Ireland was well below other European countries (there was a mass emigration movement towards other EU countries); after 1994 it began to grow reaching the most developed countries (thanks to the great investments from companies like Microsoft, IBM, etc.). In 2008 Ireland had its economic downturn, which had big impacts on Irish population: the rate of unemployment increased; the income fell because of the increase in taxation; government expenditure was reduced (public sector salaries, social welfare and health). People started to contract their expenditures.

Part of the LIFEPATH project is to show what effects the socio-economic environment has on health. We have very good psychological data and indicators in GUI that we can put together to analyze the effects the downturn had on specific behaviours and the perception people have.

The best way to proceed is to have prior hypotheses on how some processes work, then to try to operationalize the hypotheses and then to test it. The "**Family Stress Model**" offers a model (it shows the effect of economic downturn on families): economic recession → parental stress/depression → less parental warmth → children psychological adjustment → epigenetic response by children. Less parental warmth has an impact on children epigenetic profile (greater reactivity on response to stressful situations).

**This is a generalizable model:** there are regularities in societies across time and countries.

In the same way, a relation between social position and disease is still true now: poorest people die before and develop diseases more easily (also chronic, see cancer).

In terms of policies, one of the first interventions should be supporting the education of children in the lower classes: the loss of maternal/familiar warmth has an influence on the learning skills of children. When the upturn comes, things start going better within the family; but even when this happens, children are marked in the long period. This could penalize them, or it could also be that they become stronger (more resistant to stressful periods): we don't know yet, the case is still under study.

It's important to stress with politicians the impact of low income on children growth (in the short and long period): David Cameron once said that money doesn't count as long as children have parental warmth. There are sociological consequences of low income that you can't discount by saying that for children with warm parents money doesn't count: low income counts because it provokes stress, depression and parents' hostility.

Questions/Comments:

*(Vineis) It is interesting that more and more biomedical scientists use agnostic approaches and our statistic model don't have any hypotheses, they are data driven (especially with new technologies) and social scientists in a way are more scientific because they build their models based on hypotheses.*

*The European Commission puts a great emphasis on sex and gender issues and I have the feeling that the mothers' behaviour is much more emphasized than fathers'.*

Generally, the main caregiver in a family is the mother at 70%; so, the fact that the father is put under psychological stress is not so relevant in terms of psychological development of the children as the mother's behaviour.

### **14.30 - 15.00 Conditional Cash Transfer programmes - Mauricio Avendano-Pabon**

Conditional Cash Transfer (CCT) is part of the WP6 which focuses on the impact of economic downturns and CCT on biological markers.

Some of the concepts of this presentation are part of the second chapter of the book "Social Epidemiology" by Lisa Berkman, Ichiro Kawachi and Maria Glymour: this conception of SES focuses more on **how things could be changed** than which are the origins and effects of Socio-economic differences.

Latin America is where the experiments on CCT programs were started: here, Governments do very little to reduce poverty if compared to European countries (see GINI coefficient)

The first CCT experiment was introduced in Mexico (the program was called "Oportunidades"); the idea is very simple, Governments give money to poor people under the condition that they behave well (**investing in human capital**).

The two basic conditions are that families send children to school and take children regularly to health and nutrition check-ups.

There are two objectives in these programs:

- Short term objective: supporting household consumption (income protection)
- Long term objective: breaking the cycle of intergenerational transmission of familiar poverty. Family are supposed to invest the money on their children future.

Every territory or Country that implements the CCT program has its own priorities dealing with the local conditions (food, education, etc.); the families get the money only if they hit the target and the more they manage to do that, the more their income grows.

CCT help people to access basic public services and encourage to change behaviours; thus, social services are made reachable and available to poor people. The idea is also that mothers changing their behaviours will make mothers think differently to their children future.

Why these programs are **important to LIFEPATH project**?

They move **from observational to experimental evidence**: changing a component on SES (income) you can verify how this affects health and, subsequently, improves policies in the right direction.

Every program has its specifics.

"Oportunidades" was directed to extreme poverty situations: some communities were selected for the money transferring, and some others were selected as control groups for controlling the results (not receiving any money)

Currently, almost every Latin America Country has a CCT program, and it is quickly expanding in Africa, too; as for the Western Countries, the first CCT program is "Opportunity NYC – Family Rewards", in New York City, the first one in an high-income Country.

"Familias en accion" (Colombia) shows that these programs are having a huge effect.

Transfers are only given to the mothers, because they are very responsible in following the recommendations (sending children to school and to the doctor for regular health check-ups) and in taking care of their children and this strengthened their position at home.

Effects on health: big food consumption effect (they eat more) produces less malnutrition cases; increased use of public services means a better monitored state of health, which means a reduction in mortality as a result.

**Opportunity NYC – Family Rewards:** The Bloomberg Major transferred the experiment that was working in Mexico to New York City in 2007, fostering the concept of investing in human capital. The program was very complex (education, preventive health care, conditional parental employment)

Results: it reduced the families poverty, increased the capacity of saving money, supported a higher education level for children; no effects in the use of medical services (except for dental services), few effects on health outcomes and little effect on employment.

This CCT program was chosen for LIFEPATH because it offers an opportunity to discover **how a change in incomes can affect biomarkers of ageing, both in children and adults** (focus on biomarkers of stress).

These cohorts has been closed in 2010, so it is difficult to collect additional biomarkers data.

The open question related to this kind of programs is: can this program, which helped reduce the effect of poverty in low-income countries work also in high-income countries? The NYC experiment didn't give the same result, but there are other experiments to be studied now.

#### Questions/Comments:

*I think it would be precious to have some biomarker data not only after but also BEFORE the intervention of the program, to monitor the changes and the effect of it.*

This is one of the limitations of the program. Technically, if you are randomizing, you don't need a baseline measure, you can assume that whatever difference you register in the end is due to the treatment only. We have baseline measures of self-reported health outcomes and poverty but I agree it would be useful to have others.

*What is this conditionality on employment in the NYC CCT experiment?*

Working for a certain number of hours was one of the eligibility criteria for receiving; the idea is to encourage people who are working and already earning money and not incentivizing people not to work by giving them money. This is the U.S. idea beyond welfare policies, which is very different and hard to understand for European Countries.

*What is the feedback from the people who are randomized to be in the control group (not receiving money)?*

They were not happy to be in the control group, but there are not so many data on their feedback. There is a big open discussion on the ethics of this system.

*In which terms are you trying to change the conditions of the families (these are little amounts of money)?*

You are not changing the economic situation of the families, but hopefully people will change a behaviour and that will affect other behaviours. In the short time this is probably as much as we can think the public policies can do. Some of the families who received the money went above the poverty line.

#### **15.15 - 16.30 Description of cohorts, with particular focus on SES and ageing measures**

- ***Understanding society, UK (presented by Meena Kumari)***

This is a Household Longitudinal Panel Study; it began in 2009. It is an annual all-ages study involving everyone in the household; the project is interdisciplinary with a lot of social data collected about general population samples and ethnic minority groups. There are 20 years of annual data collected since 1990.

Very good collection of social/environmental/attitudinal data about the cohort; in terms of health, they ask questions about disabilities and chronic diseases, health behaviours.

In the wave 2010 – 2012 a nurse interview was proposed to participants, in which people were measured by nurses about the health: a lot of biomarker data were collected.

Cohort website: [www.understandingsociety.ac.uk](http://www.understandingsociety.ac.uk)

Questions:

*Have you ever measured BMI?*

We had a self-reported BMI

- ***Gazel, France (presented by Marcel Goldberg)***

Longitudinal cohort launched in 1989; it was a general purpose cohort, an open laboratory not focused on a specific outcome, on specific conditions. It takes place at the French National Company for the gas and the electricity: the main population was constituted by workers.

Active Follow Up: when people have to do something (filling questionnaires, for example)

Passive Follow Up: data extracted from databases.

The process in the data collection is very dynamic, there is always room for new questions.

Lot of data come from SNIIRAM (National System for Health Data): every medical expenditure French people make is recorded in this database; lot of other data come from the database of the company (job position, salary, ...).

Thanks to the company database people can be monitored also on the basis of the payment of the pension (so, for example, the researchers know if someone dies)

Type of data:

- Social data collected every year (most of them) and once in a while (others)
- Occupational Data both in Exposures (detailed job history) and in Retirement period (all of the people in the cohort are now retired: they received a questionnaire about “What do we retired people do in a day?, i.e. For 24 hours, every hour)

- ***Constance, France (presented by Marcel Goldberg)***

Longitudinal cohort established in 2012.

Constance is an “open epidemiological infrastructure”, which means that researchers have a free access to data.

It tries to collect data from French population from 18 to 69 years old: they aimed to have 200.000 participants. Who wanted to participate was supposed to register for the experiment in the Health Screening Centers (HSC), where you can have screening for free.

Participants receive annual questionnaire and have a new health examination every 5 years

Data have some focus on socio-demographic aspects.

70.000 participants have been recruited up to now and they will probably be around 90.000 by the end of the year.

- ***MCCS study, Australia (presented by Gianluca Severi)***

Longitudinal cohort established in 1990-1994: the cohort is run by the Cancer Council Victoria, an NGO collecting funds for cancer research.

The cohort is in Melbourne, Southern Australia, that is a good State to study cancer because they have a population-based cancer registry.

The main aim was to study the association between diet and cancer.

Baseline recruitment was in 1990-1994 and it is similar to EPIC Italy.

Participants were selected in the Greek/Italian migrants communities because of the interest in their diet.

Follow-Ups: passive collection of data from databases + 2 active follow up (one in 1994-1998 and another in 2003-2007).

- ***EpiTeen, Portugal (presented by Silvia Fraga)***

Longitudinal cohort established in 2003. The main aim was to understand how behaviours acquired during adolescence can impact on adult health. Participants were recruited directly at schools by contacting teachers.

Baseline in 2003; first follow-up in 2007, second follow-up in 2011, third follow-up in 2014.



Data collection was done through self-administrated questionnaire, physical examination and fasting blood samples.

- ***Young Finns, Finland (Mika Kivimaki)***

Population-based study in Finland started in 1980; the idea was to look prospectively how cardiovascular risk factors in childhood predict adult risk.

The follow-up has now 30 years. Follow up was every 3 years.

3 SES variables have been collected in childhood: parental occupation, education and household income. These SES were proposed also in adulthood.

This cohort is linked to health records and hospitalization records.

This cohort is in a way representative of the population.

- ***WHIP, Italy (presented by Angelo D'Errico)***

Work History Panel is a longitudinal study of Italian workers employed in the private sector during 1985-2013. It is an integrated system based completely on administrative data: data were collected by the National Social Security Institute (INPS), National Institute for Insurance of Accident at Work (INAIL), Ministry of Health and National Institute of Statistic (ISTAT). It is representative of people who are insured by INPS.

This was a very cheap study, being based on national databases already available.

All the data are reconstructed from the Databases (careers, job characteristics, social benefit, pensions); more information on Hospitalization is available (waiting for linkage with the ISTAT for data about mortality).

1.700.000 people were included (more men than women).

#### Questions:

(P. Vineis) *You are using a lot of data that could allow the identification of the subjects*

The sensitive information has been deleted (date of birth, Municipality of residence, etc.); all the linkage has been done by the Ministry of Health.

#### **16.30 - 17.00 Summary of the day by Paolo Vineis**

We are positively impressed and overwhelmed by the quantity and quality of data. Our task is to make sense of all the data and identify some meaningful lines of action and develop good hypotheses.

## **5.2 LIFEPATH's Kick-off Meeting - 12th June 2015 - Imperial College London - St. Mary's Campus**

#### **09.00 - 09.30 The experience of BBMRI and Maelstrom - Marcel Goldberg - followed by discussion**

The **Maelstrom Research project** (<https://www.maelstrom-research.org>) is an international research program, created in 2012 and coordinated by McGill University in Canada, which counts on a collaboration with over 15 international networks.

Its objectives are the implementation of data harmonization and data sharing models for collaborative epidemiological research.

BBMRI is a consortium of bio-banks: they are partners of Maelstrom program because their goal is to share data about human health from cohorts by improving harmonization.

There is a great amount of data, coming from different data sets; the first goal is a common dictionary of variables coming from all cohorts in Maelstrom framework. They have a very powerful software to browse very easily the data and statistics.

They are working with 56 different data sets, from small to quite large ones.

Marcel Goldberg shows how the software works and crosses variables through algorithms.

There are two main **open source softwares** which can be used for harmonizing data:

- **Mika:** to define the variable dictionary for each cohort
- **Opal:** for the database management

Once you have defined all your variables in the Mica format, you can upload your database in Opal.

### Questions/Comments

*Is there any of our cohorts which has experienced the system?*

NCDS has.

EPIC, Gazelle, Constance and maybe The Airwave Health are already in BBMRI.

There are 3 possibilities for LIFEPATH to take advantage of this program: asking to Maelstrom to enter the program with our 18 cohorts; importing their free software and learning how to use it for harmonizing all our cohorts; doing the harmonization only for specific projects, not for all the cohorts which are involved in LIFEPATH.

Using this software doesn't mean that we should make the data of the cohorts available and open access.

Question: is it useful to have a liaison with Maelstrom and to send Fulvio Ricceri to Canada for studying how to use the system?

### **09.30 - 10.30 Harmonization of data from cohorts (chaired by Silvia Stringhini, Angelo d'Errico and Paolo Vineis)**

Paolo Vineis starts the discussion with some practical considerations on how to identify hypotheses and put them into practice and how to select variables.

We will start from research questions from WP3 because harmonization and collection of data are in this WP and this is the one which starts with the analyses and gives results to other WP. It contains two main questions: analyses of impact of SES on healthy ageing; examination of the role of the modifiable risk factors (behavioural, environmental, occupational, psycho-social).

The focus of the harmonization and collection of data for the analyses of the impact of the economic crisis on healthy ageing will be centered on the cohorts in Portugal, Ireland and Italy.

The integration of biomarkers will be done later, because we still don't have these data from many cohorts.

Some cohorts will be selected for the initial phase of the harmonization of data, to find commonalities between them. The two build-up and decline phases will be considered separately and then integrated in the end.

Harmonization of the data will be done only when at least 2 cohorts are available for a certain purpose; we will start with SES variables, then health variables and the covariates and this will be done centrally by the University of Turin.

The goal of next year will be a first big paper: starting from the Whitehall Study and from the work of Mackenbach, we can produce a paper which contains a better characterization of SES, and which looks at the covariates and adds some elements to the work already done (like life-course perspective, for example).

There will be two groups to start from with the work:

- 1 – build up
- 2 – decline

All the names of variables and related data from the cohorts will be sent to the University of Turin (Fulvio Ricceri) to be catalogued and then working groups will proceed with the selection of variables to work on.

Selection of variables: we start with our hypotheses and then the groups will go through all the variables and define questions and frequencies. There is a format which was sent to all the cohorts for

collecting the useful elements which can be a starting point (Paolo recommends to fill it soon and send it back to Silvia Stringhini, Fulvio Ricceri and Angelo D'Errico).

The first deliverable for data Harmonization will be on Month 12.

Given the Consortium agreement, the cohorts must give the access to the data.

Paolo Vineis has already distributed DTAs and MTAs and sent an e-mail concerning access to cohorts that require an application for access to data. All cohorts should check the DTAs and MTAs with administration and let Paolo Vineis know if they are acceptable.

Paolo will take care of requests for access to cohorts.

Concerning new analyses of biomarkers, the budget for the project is for 2.500 subjects from the cohorts, so a working group will choose the cohorts for proceeding with the biological measurement, starting from Epiporto, Generation21, Tilda (led by Polidoro, Vineis).

### Questions

*(Michelle Kelly-Irving) How do we cope with the ethical issues about potential stigma of some individuals based on their socio-economic profiles (e.g. in the CCT program)?*

This issue was raised by the EC: the initial observational studies have been approved by the Ethical Committee; the critical point is the CCT. The NYC experiment was approved by an ethics committee, but regarding the approval of the European Commission this is a still pending issue (I will take care of).

Paolo Vineis lists the deliverable deadlines for the next months.

Identification of colleagues responsible for the working groups:

1. The **working group on “build-up” phase** (early life) is composed by: Richard Layte(leading), plus Michelle Kelly; other people who lead the childhood cohorts (to be defined - Portugal, NCDS, ...)
2. The **working group on “decline” phase** (middle adulthood/old age) is led by Silvia Stringhini (University of Lausanne) and Mika Kivimaki (UCL) + other people to be selected
3. The **working group on cohort selection for biomarker measurement** (Lead Silvia Polidoro and Paolo; including Silvia Fraga, Cathal McCrory, Dario Greco, Mauricio Avendano; others invited to candidate themselves)

### 10.45 - 12.30 Presentations from WP Leaders on tasks, deliverables and milestones

The detailed presentation of each WP with the list of the deliverables and milestone are attached.

#### **WP1 - Management and Coordination (Paolo Vineis, Imperial College)**

This WP has been introduced on 11<sup>th</sup> June by Paolo Vineis

#### **WP2 - Socio-economic differentials in healthy ageing Europe (ERASMUS MC)**

The WP 2 issues, objectives and deliverables/milestones are presented by Wilma Nusselder.

##### Questions/Comments:

*What about the harmonization on morbidity data? You have self-reported outcomes*

We will use mainly health surveys across Europe and general data and measures, not too specific because the questions about specific diseases are very different across the surveys.

*In the first waves of your studies you have generated some hypotheses (e.g. mortality and morbidity differ in terms of distribution in the countries). Are you going to test these hypotheses in the new wave?*

We will try to see how the differences are (particularly concerning health expectancy), but we have few countries in this study, so we will try to expand the number of countries.

*And will you generate new hypotheses for the working groups to be tested in the cohorts?*

Of course it will be useful to work together and verify hypotheses in different cohorts and different countries. We will find out together how we can work in an interactive way.

#### **WP3 - Life-course socio-economic pathways towards healthy ageing and the role of modifiable risk factors (CHUV)**

The WP 3 issues, objectives and deliverables/milestones are presented by Silvia Stringhini.

**WP4 - Integration and harmonization of biomarker/omic data (HUGEF Foundation)**

The WP 4 issues, objectives and deliverables/milestones are presented by Silvia Polidoro.

**WP5 - Biostatistics and mathematic models (Imperial College) - missing slides**

The WP 5 issues, objectives and deliverables/milestones are presented by Marc Chadeau-Hyam

Questions/Comments

*There is a delicate issue: how will the statisticians from different groups/WPs/partners coordinate their works?*

One easy thing is to have someone from WP5 in each of the working groups to exert supervision; we can also evaluate the possibility to create a working group with statisticians from every partner or WP for defining the working methodology.

**WP6 - Changes in SES and the biology of ageing: the impact of economic downturns and conditional cash transfer policies on biological markers (London School of Economics)**

The WP6 was supposed to be presented by Mauricio Avendano, who left the Kick Off Meeting on 11<sup>th</sup>.

**WP7 - Conceptual integration - SES measures and the biological embedding of healthy ageing (UPS)**

The WP 7 issues, objectives and deliverables/milestones are presented by Michelle Kelly-Irving.

The workshop on operational definition has been run on 11<sup>th</sup> June, just before the Kick Off Meeting.

*A discussion about the definition of healthy ageing follows.*

We want to **stress the functional issues**, so using only mortality data could penalize the achievement of our goals. The network wonders if there are any functions not linked to mortality (e.g. muscle skeleton disability; speed of walking; visual limitations). Is every functional indicator linked to mortality, i.e. they are all indirectly dealing with mortality?

**WP8 - Evidence Integration, Policy Implications, and Health Impact Assessment (UCL)**

The WP 8 issues, objectives and deliverables/milestones are presented by Mika Kivimaki on behalf of Michael Marmot.

No slides are available for these presentation.

WP8 aim is to bring to policy makers the results of the LIFEPATH project: this will be done through the Institute of Health Equity (<https://www.instituteofhealthequity.org>), which is an organization that put together science and policy makers. Basically, the WP8 will start being really operative over the last two years of the project, when the LIFEPATH will have generated some results.

Questions/Comments:

*It's true that WP8 will start late, but we need to discuss immediately with WP6 and WP8, because it is not straightforward that what will be done in the first years will be useful in the last two years. Policy applications should also inform the choice of variables and cohorts, so the representatives of WP6 and WP8 (Mauricio Avendano and Mika Kivimaki) will be invited to have a first teleconference with the Steering Board, to discuss immediately what WP6 and WP8 will do. In WP8 there are several hypotheses on policy implications of our work (e.g. the generation of biomarkers associated with social class): there are different views on the policy implications which should be discussed as soon as possible.*

**WP9 - Communication and Dissemination (Zadig)**

The WP 9 issues, objectives and deliverables/milestones are presented by Luca Carra.

This project is very difficult to be communicated to common people because of the very specific terms which are used and that need to be translated in common words.

We will use data visualization to make the contents accessible to everyone.

LIFEPATH already has a twitter account: @Lifepath\_eu and the website is under construction; we will collaborate with Wikipedia for the definition of “healthy ageing”; a linkage with other dedicated websites will be activated (e.g. [www.scienceonthenet.eu](http://www.scienceonthenet.eu)).

Questions/Comments:

*(Silvia Stringhini) What will be the relationship with the press offices internal in our Institutions?*

As a general strategy, we can prepare the drafts of the press releases and send them to your press offices for the spread through their channels.

*(Paolo Vineis) One of the problems I see is to keep focused: the idea may attract a lot of attention from a broad variety of stakeholder, so we need to stress the specificities of LIFEPATH, not to be confused with other initiatives (there are a lot of groups active on inequalities in health, starting from Michael Marmot and Johan Mackenbach, for example).*

The most important thing in LIFEPATH is that this project tries to understand the biological mechanism of health inequalities, which is a step forward to the usual picture of health inequalities from other studies.

*(Paolo Vineis) Disagree on the use of double helix in the website, because it reminds too much about genetics; we should find a different way to express biological embedding and the path.*

### **13.30 - 14.00 Administrative issues - Terrence Simmons**

Terrence Simmons, from Imperial College, shows the issues concerning the administrative and financial issues in Horizon2020 and for the management of the project and the reporting (see the attached presentation).

### **14.00 - 14.30 - Ethical issues including DTAs, MTAs - Beatrice Fervers**

The ethical issues mainly deal with the consent from participants for the collection and processing of their data. Many cohorts have a very long duration (30 years, 50 years, and so on), so the discussion about the consent revolved around the necessity to ask them to renew it and how to do that.

### **15.00 - 16.00 Wrap-up of major decisions, organizational challenges and work planning round table with WP leaders - led by Paolo Vineis**

Paolo Vineis drew the conclusions summarising the crucial decisions and challenges emerged from the meeting (see **Outcomes** chapter)

### **15.00 AOB, closure and adjourn**

## 6 Document

All the presentations can be found at this link: <https://goo.gl/WlAZdd>