

# **PROVISIONAL LISTS OF PUBLIC HEALTH CORE COMPETENCIES**

**European Public Health Core Competencies  
Programme (EPHCC) for Public Health Education**

**Phase 1**

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**Association of Schools of Public Health in the European Region (ASPHER)**

**Publication No. 2**

## List of Contents

3	Programme summary
4	Steering Committee; Work Group Chairs; Editor of Report
5	Introduction
6	Defintion and classification of competencies
7	Organisation and work groups
8	Discussion among and acceptance by ASPHER members
8	Discussion with Public Health stakeholders
8	Project phases
9	This report
11	Methods in Public Health
11	Practical competencies
14	Intellectual competencies
18	Social environment and health
18	Practical competencies
19	Intellectual competencies
21	Physical, chemical and biological environment and health
21	Practical competencies
23	Intellectual competencies
26	Health policy, organisation, management and economics
26	Practical competencies
29	Intellectual competencies
31	Health promotion and disease prevention
31	Practical competencies
35	Intellectual competencies
37	Cross-sectional themes, including strategy making, ethics, other themes
37	Practical competencies
40	Intellectual competencies
42	Annex: Programme participants

## Programme summary

- **Aim:** Development of lists of competencies aimed at in European PH training.
- **Duration:** Three years - and continued updating thereafter.
- **Initial phases:**
  1. *June-October 2007:* Development, by ASPHER members, of provisional lists of competencies – a mapping exercise. For details, see the full text.
  2. *November 2007-September 2008:* Further development of lists of competencies in cooperation with PH stakeholders and in the light of Public Health functions.
  3. *October 2008-September 2009:* Classifying competencies according to educational level.
- **Publication:** Printed and circulated working paper by the end of each phase.
- **Acceptance by ASPHER members:**
  - a. Discussions:
    - At Deans' and Directors' Retreat each year.
    - At the annual conference by the end of each phase.
    - Continuously among members, especially during Phase 3.
  - b. Acceptance by the General Assembly at the end of Phase 3.
- **Discussions with public health stakeholders:**

Phase 2 and 3 - and onwards.
- **Organisation:**
  1. Six working groups, representing the major PH fields and disciplines:
    - a. Teachers/scientists from member schools;
    - b. Representatives of stakeholders (Starting at Phase 2);
  2. Initial coordination by the Executive Board Finance Committee, chaired by the President.
- **Communication:** Communication will take place by phone (including teleconferences), e-mails, and at retreats and annual conferences – and possibly at special conferences.
- **Economy:** There is by now no specific economic basis. Resources will be ad hoc.

## **European Public Health Core Competencies Programme (EPHCC) for Public Health Education**

### *Steering committee*

Prof. Anders Foldspang, Aarhus, Denmark (President) (Ed.)  
Prof. Stojniew Jacek Sitko, Krakow, Poland (Vice-President)  
Prof. Ramune Kalediene, Kaunas, Lithuania (Secretary Treasurer)  
Thierry Louvet, Director, ASPHER, Paris

### *Work Groups and Chairs*

Methods	Prof. Ramune Kalediene/Prof. Linus Sumskas, Kaunas, Lithuania
Social environment and health	Prof. Johannes Siegrist, Düsseldorf, Germany Dr. Natalia Wege, Düsseldorf, Germany
Physical, chemical and biological environment and health	Prof. Soeren Kjaergaard, Aarhus, Denmark
Health policy, organisation, management and economics	MPH Tom Kuiper, Maastricht, The Netherlands
Health promotion and prevention	Prof. Roza Adany, Debrecen, Hungary
Cross-disciplinary themes, including strategy making, ethics, other themes	Prof. Daniela Valceanu, Bucharest, Romania

### *Coordinator and Editor of Report*

Anders Foldspang

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## **Introduction**

Schools of Public Health (SPHs) train their students to be able to develop, organise, manage, and forecasted PH problems.

The European Public Health Core Competencies Programme (EPHCC) focuses on the development of lists of core competencies necessary to fulfil this mission. Such lists will supply SPHs with a quality development tool besides the already existing tool of PEER. Furthermore, the lists will be relevant tools for communication and exchange of ideas with PH stakeholders and for communication to students about what they can expect from a training programme – and what will form the basis for tests and exams.

These years, developments of lists of competencies actually are taking place also in other contexts. In Europe, the Bologna Declaration has stimulated a process of convergence towards uniform educational systems characterised by, e.g. ECTS labelling, and many European schools of public health are probably working to establish systematic lists of competencies. In USA, the members of our sister organisation Association of Schools of Public Health (ASPH) discuss lists of competencies resulting from recent discussions and committee work.

In the present European programme we will of course allow ourselves to be inspired by what was already produced in the USA and by individual European schools. It does however not make much sense just to duplicate such lists. The reason for this is that competencies aimed at in educational programmes in Public Health will need to reflect the present and forecasted reality of population health and health systems and other systems serving the population's health. Consequently, lists of competencies must reflect these dynamics and thus, to a certain extent, will have to vary over time and from place to place.

As we all know, there are huge contrasts across Europe as concerns both population health and health systems, and both change over time. Thus, the process of development of lists of competencies should be a continuous one, and it should reflect prevailing and future philosophies not only in academia but also among Public Health stakeholders.

A continuous, widespread and coordinated programme process is needed, involving as many ASPHER members as possible, and integrating important stakeholders.

## Definition and classification of competencies

There does not exist a uniform agreed-upon definition of the competency concept, and there are many terms in the field of educational theory. Irrespective of the importance of our present endeavour, this makes the task a bit difficult at first sight and could create problems for a more widespread process aimed at.

As a representative of the theoretical literature, John Biggs essay on '*Individual differences in study process and the quality of learning outcomes*' (Higher Education 1979;8:381-94) can be of use. A supplementary road to a mutual conceptual framework is supplied by a few managerial terms, e.g. these:

'A **job** is a collection of tasks and responsibilities that an employee is responsible to conduct. Jobs have titles. A **task** is a typically defined as a unit of work, that is, a set of activities needed to produce some result, e.g., vacuuming a carpet, writing a memo, sorting the mail, etc. Complex positions in the organization may include a large number of tasks, which are sometimes referred to as **functions**. **Job descriptions** are lists of the general tasks, or functions, and responsibilities of a position. Typically, they also include to whom the position reports, specifications such as the qualifications needed by the person in the job, salary range for the position, etc. Job descriptions are usually developed by conducting a **job analysis**, which includes examining the tasks and sequences of tasks necessary to perform the job. The analysis looks at the areas of knowledge and skills needed by the job. Note that a **role** is the set of responsibilities or expected results associated with a job. A job usually includes several roles.

Typically, competencies are general descriptions of the abilities needed to perform a role in the organization. Competencies are described in terms such that they can be measured. It's useful to compare competencies to job descriptions. Job descriptions typically list the tasks or functions and responsibilities for a role, whereas competencies list the abilities needed to conduct those tasks or functions. Consequently, competencies are often used as a basis for training by converting competencies to learning objectives.' (Free Management Library, [www.managementhelp.org](http://www.managementhelp.org), 12 June 2007).

Mapping essential Public Health functions is of course important. Various lists exist and will have to be discussed and further developed from Programme Phase 2 and onwards. In the present context, we have aimed at competencies categorised within six Public Health main fields, which are also mirrored Public Health functions. The six thematic fields are:

1. Methods (epidemiology and biostatistics; qualitative methods);
2. Social environment and health;
3. Physical, chemical and biological environment and health;
4. Health policy, organisation, management and economics;
5. Health promotion and prevention;
6. Cross-disciplinary themes, including strategy making, ethics, other themes.

In the present context, each main field has its own work group. Work group members have had to agree upon sub-division of the field, suggested by the work group chair, such as, 'Epidemiology', 'Biostatistics' and 'Qualitative methods' in the field of Methods.

Furthermore, competencies have been grouped in:

- Intellectual competencies ('knowledge'), and
- Practical competencies ('skills').

In order to optimise the process, it was meant to be inclusive and based on open coordination. This means that if a group member has suggested a competency, it should be accepted for the list – irrespective of:

- Whether other group members would like to include it in their training programme;
- What educational level it refers to;
- How detailed it may seem to be.

- the aim being to *produce a valid picture of competencies applied in PH training across Europe.*

Thus, contrasting the North American competency project, there has been no upper limit as concerns the number of competencies. This is, of course, a strategic decision.

### **Organisation and work groups**

All member schools have been repeatedly invited to participate and to recruit work group members. This has resulted in a total of more than 100 experts participating in the programme, including the 6 chairs of the work groups. The composition of the work groups is reflected in the Annex.

## **Discussions among and acceptance by ASPHER members**

Discussions among ASPHER members will take place:

- At Deans' and Directors' Retreat each year.
- At the annual conference by the end of each phase.
- Continuously among members, especially during Phase 3.

Acceptance by ASPHER members at large – as general ASPHER policy in the field - should be planned to take place at the General Assembly by the end of Phase 3.

- a. Discussions:
  - At Deans' and Directors' Retreat each year.
  - At the annual conference by the end of each phase.
  - Continuously among members, especially during Phase 3.
- b. Acceptance by the General Assembly at the end of Phase 3.

## **Discussions with public health stakeholders**

To ensure the Public Health relevance of the developmental process involving competencies aimed at in Public Health training, inviting Public Health stakeholders is of course of central importance. Thus, the plan is to invite international (international organisations, such as WHO and EU; ASPHER's sister organisations in Europe and in other parts of the world), national (Ministries of Health), and regional representatives to participate in Phase 2 and 3 – and onwards.

## **Project phases**

The initial three phases of the project are:

2. *June-October 2007*: Development, by ASPHER members, of gross lists of competencies. For details, see the full text.
3. *November 2007-September 2008*: Further development of lists of competencies in cooperation with PH stakeholders.
4. *October 2008-September 2009*: Arranging competencies according to Public Health functions and educational level.

## **This report**

The present report is intended to be one out of three in the three first phases of a – hopefully – ongoing process in the future. It represents the results from the process described above for Phase 1 (June-October 2007). In agreement with the nature of the process, the chairs have functioned as collectors of competencies and sometimes also as editors. I have received lists of competencies from chairs and directly from work group members and from other sources as well, including two members of the ASPHER executive board (Christopher Bird and Ted Tulchinsky, concerning diet). I have also checked the competencies of my own MPH Training Programme.

I have slightly adjusted the resulting lists to avoid too much repetition and overlap, which will inevitably occur if mutually independent lists are just added to one another. The general guidelines for the practical development of the lists by group members and their chairs have been circulated to work group members in the form of a manual.

The process has denoted a mapping exercise, and thus the aim has been to be able to present lists which, all in all, may be assumed to represent the majority of competencies aimed at in Public Health training in Europe, especially in the classical postgraduate master's programme leading to the title of Master of Public Health (MPH). New programme types are being developed these years and will present new challenges. This does not least count for the bachelor and graduate master programmes followed by ph.d. training – the Bologna 3+2+3 model.

So far the process has been coordinated and inclusive, and it should remain so, i.e., over the years the lists should be expected to grow actively without censoring, starting with Phase 2 of the programme, where we will invite Public Health stakeholders, which actually could have views on public health challenges – and thus on training needs – diverging from the intra-mural needs expressed in the present text. Discussions with Public Health stakeholders are promising and challenging, and initiatives are taken at present to organise a conference to support this dialogue.

Thus, the ongoing process of revision, re-organising and development should be inherent in the production. The lists have to be revised and will have to take into account cross-country and cross-regional discrepancies, so that Public Health training will continuously be able to meet future challenges in population health and in health systems. It should reflect the state-of-art in Schools of Public Health and among stakeholders. The production of lists of competencies should be a process with interaction with bottom-up and top-down components. Such a process necessarily

needs an organisation like ASPHER to broadly represent the training universe across Europe – and other organisations to represent stakeholders.

The vigilant reader will notice that some competencies are relatively detailed, whereas others tend to take more of a bird's eye view. I have made few attempts to ensure that the overall view preceded the detailed displaying of competencies (or learning objectives – a term preferred for some situations, in some texts, and by some experts). Moreover, at the beginning of each section of practical competencies I have ensured that it starts with two overall competencies, namely concerning communication of documentation and concerning programme development, respectively.

The lists do not, of course, by any mean, represent a more or less authorised standard. That may possibly come later and will possibly constitute some of the overall aim for Phase 3. At present, schools and Public Health stakeholders can consider training programmes in the light of the lists, and the lists in the light of Public Health challenges, in terms of international, national, regional and local population health development and health systems development. If wholes in the lists are identified, suggestions for filling the wholes will only be too welcome in the next phases. Some more editorial work should be done. If, however, already now the lists can stimulate curriculum development and, e.g., support the local testing of Public Health students, so much the better. Lists of defined competencies are, of course, part of the standard quality equipment of a School of Public Health. So, now the ball has started running.

Why choose a pragmatic process like this to produce a first edition of lists of competencies? – One answer is that pragmatism is a prerequisite, when we want to combine the efforts of many nationalities, cultures, professions, disciplines, academic paradigms and cultures, and Public Health challenges. Simple classifications are asked for. – Another answer is that in its demand for inclusion and absence of censoring, this type of process demands the mutual respect for each other's expertise and experience and thus has the potential of enlarging and developing our views.

Hoping that the present – initial – edition of provisional lists of competencies will stimulate discussions and lead to constructive developments in Public Health training programmes and – later – in health systems and in population health, I want to thank those who contributed to the present text.

Anders Foldspang

## Methods in Public Health

*Practical competencies – The student shall be able to:*

### Epidemiology

- Communicate evidence from empirical epidemiologic population studies and from qualitative studies to a lay audience, professionals and decision makers on European, national, regional and local level;
- Suggest relevant public health intervention based on evidence from empirical epidemiologic population studies and from qualitative studies;
- Select, build, apply objective and subjective measurements for health and disease as a whole and by components (physical, mental, social), at individual, family and community level;
- Select, build, apply objective and sensitive measurements to capture the differences and the similarities between physiological status and pathological status (elderliness, early childhood, maternity, convalescence, disease debut, disease evolution, impairment, etc.);
- Select, build, apply measurement of the relationship between social, family, physical environment, genetics and biological health/disease status;
- Apply health classifications and scales commonly used in epidemiologic research;
- Develop, validate and apply data collection forms and questionnaires for epidemiologic research;
- Apply data collection methods commonly used in epidemiologic research;
- Identify and make use of register data in epidemiologic research;
- Identify and to express quantitatively and or qualitatively the risks intrinsic, extrinsic and the point and cumulative effects on health;
- Measure and appropriately estimate the impact on services needs of the population health assessment from different time related perspectives: cross sectional, longitudinal, prospective, retrospective;
- Build criteria, criteria schemes and interpretation models in order to put groups, population, community diagnosis for the past (retrospective), present (current) and future (prospective);
- Identify, retrieve and analyze documentation about population health in European countries;

- Describe (incl. graphically) and present European health data – in a language different from one's own;
- Identify new health-related challenges affecting European countries (based on Epidemiological data);
- Make use of existing health data in European countries for research and analysis;
- Compare data from European countries in terms of quality and quantity;
- Identify, retrieve and analyze documentation about population health in European countries;
- Define the screening concept and describe the discriminative ability of a test;
- Discuss and develop basic designs for trans/ international data collection;
- Perform and interpret combined analyses of published data or primary data sets from different countries;
- Identify and interpret common risks and hazards in European countries based on literature and own research where applicable;
- Identify, retrieve and analyze data from European surveillance systems;
- Contribute to the generation of epidemiologic information from e.g. European surveillance systems comparable across European countries and applicable by European policy makers;
- Develop data-based projections of population health and population risk profile across European countries and suggest applications of such projections in health policy making;
- Place own epidemiological research interests in the framework of a European research agenda;
- Develop an application for funding of scientific and/or practical documentation;
- Formulate European consequences of Epidemiological research, translate epidemiological information into policy setting;
- Describe the main types of epidemiological designs and discuss the pros and cons of these designs;
- Discuss and evaluate appropriate designs for specific settings;
- Define and compute epidemiological measures for frequency and association;
- Define, identify, describe and evaluate different types of bias in epidemiological studies.
- Define and discuss the concepts of health and disease and present the main features of frequently applied diagnostic classifications and health scales;

- Define and describe crucial sources of documentation concerning evaluation, including important existing population data bases, clinical data bases and system documenting data bases;
- Critical evaluate reports concerning quality assurance, quality development, and health technology assessment.

## Biostatistics

- Discuss if an observed statistical association implies a causal relation;
- Discern between a random sample and a population and explain how a random sample can be used to describe the population characteristics;
- Discern between the different types of data and describe how systematic and random variation in data can be summarised;
- Describe and interpret the statistical uncertainty of an estimate;
- Compare two estimates and assess whether the difference between the estimates is a systematic or a random difference;
- Compute measures of association adjusted for confounding by means of a stratified analysis and a simple regression analysis estimating main effects;
- Define effect modification and evaluate the statistical analysis for evidence of effect modification;
- Discuss if an observed statistical association implies a causal relation and evaluate the generalisation (external validity) of the study result;
- Summarise a series of estimates into a common estimate and describe the precision of the common estimate;
- Conduct and infer from a regression analysis with one explanatory variable, based on the use of a relevant statistical computer programme;
- Estimate the necessary sample sizes in simple research designs.
- Define relevant statistical methods for small or large scale population based research;
- Interpret results and statistical data presented by statistical measures, tables and figures/graphs;
- Calculate the main measures of basic epidemiological statistics (mean, standard deviation, confidence intervals; relative risk, odds ratio);
- Apply common statistical methods for inference and techniques commonly used to summarize public health data;

- Use a statistics software programme to perform the above statistical analyses;
- Develop written and oral presentations, reviews, summaries based on statistical analyses;
- Evaluate scientific papers on public health using the epidemiological and statistical methods mentioned above;

#### Qualitative methods

- Identify main types of qualitative empirical methods in literature samples.
- Assure rigors in qualitative research;
- Triangulate methods;
- Conduct participant observation;
- Conduct in-depth interviews;
- Identify potential harm to informants caused by qualitative public health research and suggest ways to minimize harm and maximize the study's benefits;
- Apply appropriately different purposeful sampling techniques;
- Perform self-reflexion;
- Deal with large amounts of qualitative data;
- Analyse textual data;
- Perform qualitative data analysis using coding techniques;
- Use software packages especially designed for the analysis of qualitative information;
- Combine qualitative and quantitative approaches if necessary;
- Present the results in the report format according to the rhetorics of qualitative paradigm;
- Discuss based on published research and current research in order to offer critique, possible applications and further directions for research;
- Write scientific articles for qualitative research journals;
- Apply multiple methods of qualitative data collection pragmatically.

*Intellectual competencies – The student shall know and understand:*

#### Epidemiology

- Basic research methods used in public health;
- The notion of health and disease as a whole and by components (physical, mental, social), at individual, family and community level;

- Understand the concepts of health status of population, determinants of health and illness, factors contributing to health promotion and disease prevention;
- Basic classification theory for health phenomena;
- Health scales and indices relevant for application in epidemiologic research;
- Data collection procedures commonly used in epidemiologic research;
- Published sources of epidemiologic evidence, including routine sources as well as scientific research;
- The differences and the similarities between physiological status and pathological status (elderliness, early childhood, maternity, convalescence, disease debut, evolution, impairment);
- The relationship between social, family, physical environment, genetics and biological health/disease status;
- The health and disease of groups, entirely population from time related different perspectives of information gathering: cross sectional, longitudinal, prospective, and retrospective;
- The dynamic of health and disease at individual level, group or community level in interaction with preventive, curative and rehabilitation interventions (chronic, acute, episode, failure, burden, death, healing);
- The role of point estimation and of the population estimation and to understand the notions of statistical inference;
- The effect of different type of data collection methods on the accuracy, validity, precision of the monitoring, investigating, evaluating;
- Main aspects of population health development across Europe (problem focus, e.g., cardiovascular diseases, metabolic diseases, cancer, infectious diseases incl. HIV, psychiatric diseases, accidents);
- Major health data registries in Europe;
- Quality issues concerning epidemiological data from different countries;
- Research designs applicable to European and other international health problems;
- Data pooling methods as applied in European countries;
- Risk factors influencing the health of population in Europe, e.g. obesity, tobacco smoking, alcohol consumption, IVDU, HIV, pollution, social factors/inequality;
- The major components of epidemiological surveillance (organization, methodology, technology, quality, resources);
- Main European research programmes with focus on population health research;

- Applications of epidemiological information in an international context;
- Basic sources of funding for scientific and practical epidemiologic documentation in Europe;
- Main features of the historical, the present and the estimated future population health development;

#### Biostatistics

- Methods of projection and forecasting with special reference to population risk development and population health development across European countries;
- Major European research programmes focusing on population health
- Confounding and how to adjust for confounding in the study design and in the statistical analysis;
- Effect modification and how to evaluate the statistical analysis for evidence of effect modification;
- The concepts of statistical power and sampling;
- Know methods of projection and forecasting with special reference to population risk development and population health development across European countries;
- Know the role of point estimation and of the population estimation and to understand the notions of statistical inference;
- The technical ways of computing the point estimation, the population estimation, to interpret the statistical inference;
- Know methods of random sampling and principles of sample calculation;
- Know concepts of statistical distributions (norm and normal distribution), measures of central tendency (mean, median mode), measures of variability (standard deviation, confidence intervals) statistical difference;
- Know and understand methods of establishing relation between variables, e.g. chi-square test, correlation, regression;
- Know and understand the main measures of associations between exposures and outcomes (relative risk, odds ratio);

#### Qualitative methods

- The main traits of way of thinking and concepts of qualitative methods frequently applied in public health as concerns population groups as well as organisations;

- Appropriate use of qualitative methods in public health;
- Basic qualitative concepts and terms;
- Main conceptual differences between qualitative and quantitative approaches in public health research;
- The debate on quantitative and qualitative methods methodological in public health practice;
- How qualitative research can support or explain the results of epidemiological or economic studies;
- The multidisciplinary and trans-disciplinary nature of qualitative research;
- How to apply qualitative research to explain, explore, describe and interpret public health problems;
- How to make strategic and pragmatic choices of qualitative practices;
- Advantages and disadvantages of multiple methods of qualitative data collection (focus groups, interviews, document analysis etc);
- The impact of various layers of the social context;
- How to conduct qualitative research using Grounded theory Phenomenology, Ethnography, Case study, Action research.
- The importance of informed consent and ways in which it can be dealt with in anthropological research;
- Positive and negative sides between covert and overt research;
- The participatory nature of both qualitative research and public health;

## Social environment and health

*Practical competencies – The student shall be able to:*

- Communicate evidence from empirical sociologic, anthropologic and social epidemiologic population studies and from qualitative studies to a lay audience, professionals and decision makers on European, national, regional and local level;
- Suggest relevant public health intervention based on empirical evidence from sociologic and social epidemiologic population studies and from qualitative studies;
- Implement basic terminology of sociology, social epidemiology, demography, anthropology and psychology to describe the impact of the social environment on health;
- Implement basic methods of social research (quantitative and qualitative);
- Identify different levels of impact of social environment on health to perform assessments on macro-, meso- and micro-level;
- Identify core areas of the social environment and their measurement with relevance to health and understand major research findings;
- Describe the social distribution of health within and between populations and connect it to major related research findings;
- Describe and discuss the importance of social and mental factors, culture, behaviour and environment for the population's health and for the development of health promotion and preventive programmes;
- Describe and discuss crucial components of conditions of living for the entire population as well as for selected population groups, especially children, elderly, adults in- and outside the labour market, immigrants, underprivileged ethnic groups;
- Identify, retrieve and analyse major trends of social change with special reference to demography, social structure and economic and technological development;
- Recognise the significance of impact of social change on health and understand major related research findings;
- Recognise main pathways by which the social environment influences health and understand major related research findings;
- Differentiate material, psychosocial and behavioural explanations of social determinants of health and understand major related research findings;
- Use current health and social indicators in administrative data to assess the impact of social determinants on health;

- Work with routinely available data to explain socio-environmental influences on health;
- Identify population groups with elevated health risks within health monitoring systems and recognise their health needs;
- Recognise areas of socio-environmental influences on health where available information is insufficient and needs further development;

*Intellectual competencies – The student shall know and understand:*

- Basic philosophy and concepts of the social sciences;
- Basic terminology of scientific disciplines that analyse the impact of the social environment on health (e.g. sociology, social epidemiology, demography, social psychology);
- Basic methods of social research (quantitative and qualitative);
- Different levels of impact of social environment on health (macro-, meso-, micro-level of analysis);
- Core areas of the social environment with relevance to health (e.g. neighbourhood, housing, work and employment);
- Actual social conditions of living of the population (European, national, regional, local);
- Actual health behaviour of the population (European, national, regional, local);
- Main components of conditions of living for the entire population and for selected population segments, especially children, elderly people, adult persons in- and outside the labour market, immigrants;
- Social distribution of health within and between populations (with special emphasis on socio-economic status, age, gender and culture);
- Major trends of social change with relevance to health, with special reference to demography (demographic and epidemiologic transition), social structure (mobility, migration) and economic and technological development (e.g. globalisation);
- Impact of social change on health (at different levels (e.g. globalisation vs. urban development) and in core areas (e.g. family, work));
- Main pathways linking the social environment with health (material, psychosocial, behavioural);
- Explanation of social determinants of health with emphasis on material pathways (e.g. poverty, income inequality, neighbourhood deprivation);
- Explanation of social determinants of health with emphasis on psychosocial pathways (social stressors and protective factors; e.g. social network, social cohesion, social anomie,

social support, models of psychosocial stress (e.g. demand-control, effort-reward imbalance, unfairness);

- Explanation of social determinants of health with emphasis on behaviour pathways (healthy lifestyle, sociological and psychological models of behavioural change);
- Conceptual and methodological bases of assessing and monitoring social environment with relevance to health, including their ethical implications;
- Importance of collecting primary data to generate new knowledge with relevance to social determinants of health and of applying this knowledge in scientific research and in systems for routine surveillance and monitoring;
- Indicators of health status and of social environment in administrative data (at different levels: European, national, regional, local);
- Sources of information (national and European data sources, surveillance/monitoring systems, e.g national surveys, European Health For All Database – WHO/Europe, EUROSTAT));
- Definition of population groups with elevated health risks within health monitoring systems;
- Strengths and weaknesses of administrative data as basis on health monitoring systems.

## Physical, Chemical and Biological Environment and Health

*Practical competencies – The student shall be able to:*

- Communicate evidence from empirical environmental studies to a lay audience, professionals and decision makers on European, national, regional and local level;
- Suggest relevant public health intervention based on evidence from empirical environmental studies;
- Analyse European data and epidemiological trends in occupational health;
- Apply the principles of exposure assessment;
- Perform assessment of environmental burden of diseases;
- Estimate the magnitude of the burden of occupational diseases, injuries and fatalities;
- Carry out a simple quantitative risk assessment;
- Develop a testable model of environmental insult;
- Recognise priorities at European, national and local levels for decision making on policies, practices and research for occupational health;
- Plan and implement European regional strategies on occupational health;
- Demonstrate skills of risk communication with public – training;
- Apply basic environmental health concept in practice with examples of team work with other sectors at local or Governmental level;
- Perform assessment of environmental burden of diseases;
- Perform assessment of the health impacts of environmental contamination and of the costs and effects of policy measures;
- Compare environmental data from European countries, based on varying measurement, scaling, retrieving and communication techniques;
- Assess what fraction of European disease burden is attributable to an environmental risk factor;
- Plan and implement research programs capable of identifying emerging risks and define causal links between environment and health;
- Identify and quantify exposure to contaminants, to translate exposure into health impact, to trace exposure to the sources of contamination;
- Evaluate whether the existing monitoring and reporting systems are sufficient to assess exposures to environmental contaminants, their health impacts and effectiveness to policy measures;

- Identify priority issues/areas in the major topics in 'environment and health' where more information and research is needed;
- Plan, perform and analyse studies in the field of environmental epidemiology; to be able to conduct spatial cluster analyses;
- Evaluate whether the existing monitoring and reporting systems in Europe are sufficient to assess exposures to environmental contaminants, their health impacts and effectiveness of policy measures;
- Perform exposure measurement in a field (e.g. noise, air pollution);
- Design risk assessment studies to address the multi-causality of the disease and the complexity of interactions between environment and health;
- Perform assessments of the health impacts of environmental contamination;
- Perform assessments of the cost effectiveness and benefits of policy measures (e.g. prevention programmes) in environmental health;
- Plan and implement research programmes capable to identify emerging risks and define casual links between environment and health of water protection;
- Analyse results of European research relevant to Health and Environment priority areas;
- Identify priority issues/areas in the major topics in "environment and health" where more information and research are needed;
- Analyse European data and epidemiological trends in occupational health;
- Estimate the magnitude of the burden of occupational diseases, injuries and fatalities;
- Recognise priorities at European, national and local levels for decision making on policies, practices and research for occupational health;
- Plan and implement European regional strategies on occupational health;
- Implement European policies and regulations in the field of housing, urban planning and management;
- Assess the burden of disease that is attributable to environmental hazards among European children;
- Empirically study social inequalities in environmental exposures across different countries in Europe;
- Apply basic environmental health concepts in practice with examples of team work with other sectors at local or Governmental level;
- Develop a testable model of environmental insult;
- Apply the principles of exposure assessment and knowledge about the most common biological, physical, chemical and psychological factors affecting health;

- Study inequalities in environmental exposures across European countries.

*Intellectual competencies – The student shall know and understand:*

- The direct and indirect human, ecological and safety effects of major environmental and occupational agents;
- Principles of exposure assessment;
- The most common biological, physical, chemical and psychological factors affecting health;
- The most common health outcomes related to environmental factors;
- Environmental and eco-epidemiological health concept, i.e. Dose-response relationship;
- Exposure and health impact of Soil pollution;
- Exposure and health impact of sewage, sewage disposal and recycling;
- Genetic, physiologic and psychosocial factors that affect susceptibility to adverse health outcomes following exposure to environmental hazards;
- General mechanisms of toxicity in eliciting a toxic response to various environmental exposures;
- Basic limitations in toxicology and how they affect the risk assessment;
- Current environmental risk assessment concept and methods;
- Principles in environmental and occupational risk assessment and management;
- Approaches for assessing, preventing and controlling environmental hazards that pose risks to human health and safety;
- Environmental Health Impact assessment- concept and methodology;
- International reference (WHO, UNEP, UNDP...) and state national regulatory programs, guidelines and authorities that control environmental health issues;
- Various risk management and risk communication approaches in relation to issues of environmental justice and equity;
- European Referent policy measures, interventions and initiatives in the field of Environment and Health, i.e. Precautionary Principle;
- European and national policies for health at work;
- Occupational health standards and healthy work practices based on scientific risk assessment;
- Risk communication concept;
- The intersectoral communication in application of environmental health principle;
- Principles in risk management and for the national organisational structures responsible for it;
- How risk management best is practised based upon the risk assessment;

- Application of basic methodological approach, examples and training of environmental health risks;
- Environmental causes of disease in Europe, how they are categorized (e.g. media which may carry hazard, individual risk factors, according to the nature of the hazard, occupational health risks, non-occupational health risks), and their indicators;
- What reduction in health impact can be expected from the policy measures which are possible in environmental health;
- The best possible assessment of exposure to environmental contamination and of the corresponding health risks on the basis of existing information;
- The sources responsible for the environmental contamination and of possible interventions;
- Indoor and outdoor air pollution and health (e.g., lung cancer, respiratory diseases, asthma and allergies); chronic chemical exposure and health;
- Main environmental exposures and their effects on health (e.g. indoor and outdoor air pollution, noise, carcinogens, neurotoxins, electromagnetic fields, radioactivity, unsafe housing, urban planning);
- Principles of exposure assessment to major environmental contamination and current methods and instruments;
- Databases on environmental-related exposures and health risks;
- The scale and the trends of current health problems associated with major environmental contamination in Europe;
- The specific design of epidemiologic studies in environmental health;
- Ecological status of Europe's water (quality and quantity);
- How water is monitored, assessed and managed in Europe and the major significant shortfalls and gaps in the European countries monitoring, assessment and management systems of the water status;
- European and national policies for health at work;
- Occupational health standards and healthy work practices based on scientific risk assessment;
- European policies and regulations in the field of housing and the built environment;
- Effects of environmental exposures on health depending on the social settings and behaviours of individuals and communities;
- Impact on health from poor or inadequate social and living conditions, hygiene in housing, immediate environment of dwellings, housing policies, urban planning and management;
- Impact on health of poor and disadvantaged groups (e.g. disadvantaged children) derived from poor or inadequate social and living conditions;

- Assessment of social inequalities of environmental exposures;
- Identification of subgroups (children, disadvantaged people) who are in particular vulnerable to toxic substances;
- The Risk Communication concept;
- The inter-sectoral communication in application of environmental health principle;
- Basic methodological approaches in environmental health risk assessment;
- Direct and indirect human, ecological and safety effects of major environmental and occupational agents;
- Genetic, physiologic and psychosocial factors that affect susceptibility to adverse health outcomes following exposure to environmental hazards;
- International reference (WHO, UNEP, UNDP...) and state national regulatory programs, guidelines and authorities that control environmental health issues;
- Current environmental risk assessment concept and methods;
- Approaches for assessing, preventing and controlling environmental hazards that pose risks to human health and safety;
- General mechanisms of toxicity in eliciting a toxic response to various environmental exposures;
- Various risk management and risk communication approaches in relation to issues of environmental justice and equity;
- How to identify subgroups (children, disadvantaged people) who are in particular vulnerable to toxic substances

## Health Policy, organisation, management and economics

*Practical competencies – Be able to:*

- Communicate evidence from empirical studies on disease prevention and health promotion to a lay audience, professionals and decision makers on European, national, regional and local level;
- Suggest relevant public health intervention based on evidence from empirical studies in disease prevention and health promotion;
- Apply the knowledge of the most recent views (on paradigms and theories) on health (care) economics to actual developments in health care;
- Interpret and apply health economic(s) research methods and techniques;
- Relate theories, models and knowledge on health economics, policy, law and ethics to one another;
- Apply empirical and normative theories for the analysis of new problems and the development of well-designed policy programs to tackle these problems;
- Evaluating the strengths and weaknesses of theories and policy programs from various disciplinary perspectives;
- Select and apply appropriate, ethical and feasible study designs to answer questions in health services and health systems research;
- Formulate an assessment that also takes relevant aspects of the wider context into account;
- Work autonomously or in a team on health policy problems and problems in health policymaking;
- Discuss and form his/her opinions on health economics
- Form opinions on (actual) problems and themes on the basis of economic arguments
- Gather information on health economics;
- Analyse actual cases from a health economic point of view;
- Analyse actual cases from an econometric point of view;
- Adequately evaluate the quality of care;
- Apply IOM's Chain of Effects Model;
- Participate in the development and implementation of guidelines in the health care sector, especially with respect to COPD or diabetes mellitus;
- Write a scientific paper on health policy or health policymaking programs;
- Write effective health policy reports for their superior;

- Acquire the skills required for working autonomously or in a team on health policy problems and problems in health policymaking;
- Apply the theories of logistics and operations management to real-life situations in health care systems;
- Assess independently new developments in the field of logistics and operations management;
- Communicate effectively on issues in logistics and operations management in health care;
- Design systems for logistics and operations management;
- Apply the acquired knowledge on health systems, logistics and operations management on practical situations of change;
- Apply the change agent's work: analysis of the problem (diagnosis), picturing the desired new situation (design) and developing change measures to introduce change (implementation);
- Link scientific and practical knowledge to other theories and problems being discussed in other units of this master;
- Search for optimal solutions in complex and difficult situations requiring change;
- Clearly explain complex issues regarding change and change processes;
- Apply theoretical knowledge from the field of the financial management to practical management problems in the health care sector;
- Perform a theoretical analysis of complex management problems and the process of managerial decision-making in case of uncertainty;
- Search for optimal solutions in situations characterized with limited information and/or conflicting interests of individuals and parties;
- Present arguments and advices with regards to management problems;
- Prepare written reports and oral presentations regarding management problems in a concise and clear manner;
- Apply economic theory to real-world problems in health care and to provide useful information for policy making;
- Apply managerial instruments and methods.
- Analyse the principles, structure and functions of health systems, including their financial, organisational and policy-making processes and systems;
- Critically assess and apply a range of key management concepts and functions in a range of health care settings;
- Appreciate the role and contribution of economic theory, organisational theory and approaches to management in the field of health care;

- Apply knowledge of effective team-working and communication skills to solve problems and achieve specific goals;
- Analyse the relationship between research evidence and policy/practice;
- Analyse determinants of demand, supply and costs of production;
- Apply the concepts of efficiency, equity, elasticity, marginal analysis and opportunity cost;
- Explain how the disciplines of epidemiology, history, medicine, sociology and economics each contribute unique insights to understanding how a health service functions;
- Critically examine responses to challenges to health services in different countries;
- Analyse key, persistent and widespread problems in providing health services and suggest approaches to resolving these problems;
- Identify the key steps involved in evaluating specific health care interventions;
- Define an organisation and management, and list the principal levels of analysis in organisational studies;
- Apply one or more of models available to help managers investigate organisational issues, approaches and tools in a case study based on an organisational problem derived from their own experience;
- Apply their knowledge and skills in an integrated fashion to the critical analysis of a specific health service scenario;
- Describe, implement and evaluate the specific contributions of a range of scientific approaches and fields of study to different aspects of the management of health services;
- Build collaboration with individuals and organizations;
- Perform program planning, implementation and evaluation;
- Manage resources, budgetary planning, writing grant applications;
- Interpretation of health economic indices;
- Apply basic principles of and designs for public health programme evaluation, especially primary, secondary and tertiary prevention, including effect evaluation and process evaluation; health economic evaluation; organisational evaluation; health technology assessment; comprehensive strategies;
- Define and discuss the concepts quality assurance, quality development, and health technology assessment;
- Perform simple cost analyses and health economic evaluations (cost effectiveness analysis, cost benefit analysis, cost utility analysis).

*Intellectual competencies – Knowledge of:*

- Leadership styles, organizational theories;
- Legal and political environment;
- Organization of the public health & health care systems;
- Basics of public health & health care management;
- Foundations of health policy and health economy;
- The history of public health and public health structures and infrastructures;
- Empirical and normative theories in the field of health economics, health law, health ethics, health quality, political science, organisational change, operations and financial management for the analysis of health policy problems and problems of health policymaking;
- The most recent views on (paradigms and theories on) health economics;
- Different health economic(s) techniques and research methods;
- The economic approach of health;
- The economic approach of health care and principles of economic evaluation as applied to health care;
- The concepts of quality and professionalism from the perspectives of health law and health care ethics and policy;
- The framework of rules and regulations (legislation, regulations, self regulation) that apply to the provision of reliable care and the tasks and responsibilities of the various relevant public and private parties in the health care sector;
- The theory and practice of quality organisation and quality policies in the health care sector including aspects as systems approach, scientific method (measurement), team approach and also aspects like inspection and enforcement;
- The specific policy aspects of care quality organisation, including logistics and safety policies;
- The evaluation of the effectiveness of care and care provision, both for the purpose of policymaking (MTA/HTA) and for the actual delivery of reliable health care (quality evaluation);
- The theories of logistics and operations management
- Recent developments in the field of logistics and operations management
- Impact of the structure of health care systems upon the applicability of different theories of logistics and operations management;
- Different views on change and change processes, including the relevant models;
- Change principles and mechanisms;
- The role of leadership as driving force of change, including strategies of change;

- The principles of the learning organisation;
- The theory of financial management, particularly in the area related to the processes of financial planning and control within health care organizations;
- Basic methods and models that are applied in the financial management field, especially with regards to investment decisions in health care organizations;
- The relationship between financial management and other management fields concerning the processes of planning and control within the health care organizations;
- Basic analysis of health policies;
- Key characteristics in the organisation and functioning of health and social services
- Main aspects the development of European health policy and social policy since 1850, especially as concerns the development of different types of social security systems, including that of the welfare state;
- Main developments in the health services and social services of European countries since 1850, including health care reforms;
- Main components, structure, organisation and functioning of the health services and social services of European countries;
- The basic elements of the economic analysis of health care;
- The basics of economic evaluation;
- Managerial processes and management issues in health care;
- Organisational theories underpinning the analysis of managerial processes;
- Identify, assess and synthesise evidence from research literature;
- The basic market model, market failure and the roles and limitations of markets (and governments) in the finance and organisation of health care;
- Basic functions of health services and outline the reasons why services have developed in the way they have;
- The inputs, processes and outcomes of health services;
- Main methods used for evaluating the effectiveness, efficiency, equity and humanity of health care and the main advantages and limitations of each method;
- Basic principles which are relevant to the effective management of organisations;
- Key theories that underpin effective management including theories relating to motivation,

## Health Promotion and Disease Prevention

*Practical competencies – Be able to:*

### General

- Communicate evidence from empirical studies on disease prevention and health promotion to a lay audience, professionals and decision makers on European, national, regional and local level;
- Suggest relevant public health intervention based on evidence from empirical studies on disease prevention and health promotion;
- Describe target groups in terms of their health, cultural and socio-economic features;
- Build collaboration with individuals, groups and organizations; communication with individuals, groups and organizations;
- Plan, implement and evaluate health promotion programs/activities;
- Design health plans;
- Communication in different settings: negotiating, motivating, decision making, problem solving, networking, team working;
- Evaluate: Selecting appropriate instruments, monitoring programmes;
- Select appropriate staff and project colleagues;
- Include knowledge and skills from other disciplines;
- Appreciate a wide range of views and values and their contribution to the overall 'health picture';
- Use appropriate methods for programme evaluation;
- Work at a local level;
- Describe the history and evolution of health promotion, including the relationships between health education, health promotion and the new public health;
- Discuss and evaluate the various concepts and models of health and health promotion;
- Illustrate the contribution of the social sciences to health promotion theory and practice;
- Analyse health problems in their social context;
- Identify the range of factors influencing public health policy in own country;
- Critically evaluate health promotion strategies;

- Critically review the main Public Health and Health Promotion trends in their local and national context and in a wider European and global perspective;
- Describe and discuss health and health promotion programmes in own country;
- Describe the main challenges for public health, and critically assess the relation between these challenges and health promotion principles;
- Understand, discuss and apply Health Promotion principles and methods in a concrete context;
- Design a multinational / multisectoral Health Promotion project, integrating different approaches;
- Participate in an intersectoral and international work environment;
- Critically assess the evidence relating to the effectiveness of health and healthcare interventions, programmes and services, apply this to practice and improve services and interventions through audit and evaluation;
- Influence the development of policies, implement strategies to put the policies into effect and assess the impact of policies on health;
- Lead teams and individuals, build alliances, develop capacity and capability, work in partnership with other practitioners and agencies and effectively use the media to improve health and wellbeing;
- Promote the health of populations by influencing lifestyle and socio-economic, physical and cultural environment through methods of health promotion, including health education, directed towards populations, communities and individuals;
- Evaluate preventative actions, including the evidence base for early interventions on children and families, support for social and emotional development;
- Involve the general public in health programs and their effects on health care;
- State public health problems, goals, and priorities;
- Plan, implement and evaluate health promotion programs/activities;
- Effectively use the media to improve health and wellbeing;
- Define and discuss the concepts of prevention and health promotion;
- Identify biological, physical, chemical, social and social-psychological principles and elements involved in prevention and health promotion:
  - Primary prevention, including environmental and behaviour modification programmes (nutrition; physical exercise) and biomedical interventions (e.g., vaccination programmes, programmes for the prevention of cardiovascular diseases);
  - Secondary prevention (screening);

- Tertiary prevention, including interventions in social medicine;
- Preventive and health promotion programmes with specific target groups, including the school health services, the child and adolescent dental services, the health and social care services for the elderly, services for mentally disabled;
- Identify and critically assess basic and general principles of strategy making and concrete strategies implemented in prevention and health promotion;
- Describe and discuss existing strategies, programmes and projects of prevention and health promotion, as concerns development, implementation, management and evaluation;
- Define, identify and discuss basic types of prevention and health promotion;
- Explain the development of social psychological theories, from individual, intra-personal theories (e.g., the Health Belief Model) to inter-personal theories (e.g., Bandura's Social Learning Theory) and system based theories (e.g., Ford's Theory of Motivation);
- Apply and discuss relevant health educational theories in the context of concrete problems;
- Analyse health education in texts based on empirical studies;
- Define and describe the planning of health education in the context of the Precede-Proceed Model;
- Know and identify the role of the arena/setting – local community, school, workplace, consumer interfaces in the health and social services – for health education, like in the theories of diffusion and social change;
- Identify barriers for the implementation of health education in individuals and population groups, based on theories of diffusion and social change.
- Develop and conduct a project for public health programme evaluation, especially primary, secondary and tertiary prevention, including effect evaluation and process evaluation; health economic evaluation; organisational evaluation; health technology assessment; comprehensive strategies;
- Identify health promotion measures for selected health problems effective on the regional/European level;
- Define indicators for monitoring health promotion projects that are comparable on the European level;
- Identify appropriate health promotion measures for specific problems (tobacco, nutrition, drugs, etc.) for the local and regional level in line with EU-policy;
- Take into account cultural differences within Europe for project planning, management and communication;
- Identify effective health promotion strategies for reducing health inequalities in Europe;

- Identify health topics in line with EU strategies and the WHO strategy for Europe;
- Identify effective approaches for selected health problems on the regional/European level;
- Be able to join international projects (plan, implement, assess, communicate health promotion projects in international collaboration).

#### Lifestyle

- Carry out a nutritional lifestyle survey in a population;
- Analyse the scale of the nutritional component of the epidemiology of common diseases in a population;
- Advise governments on agricultural policy likely to promote healthy nutrition;
- Map the access to food in a community, and plan with the community how to improve this;
- Plan a surveillance system to monitor the nutritional health of schoolchildren;
- Devise a “food and health” policy for a population;
- Monitor nutrition status with anthropometric, hematologic, biochemical measures for macro and micronutrient deficiency conditions among vulnerable groups;
- Recommend public health interventions such as food fortification policies and vitamin and mineral supplementation for groups at risk, e.g. infants, children, women, middle aged and older adults for prevention of micronutrient deficiencies including anaemia, vitamin D deficiency and osteoporosis;
- Work with governmental agencies, private industry and other agencies in veterinary, manufacturing and food safety monitoring;
- Recommend public health interventions such as physical training programmes targeting defined groups, such as children, adults, elderly, and handicapped people;
- Recommend public health interventions such as tobacco and alcohol prevention, also targeting defined groups, such as children, adults, elderly, and handicapped people;
- Work with governmental and other public agencies as well as NGO’s to sustain physical activity and to prevent tobacco smoking and overuse of alcohol.

*Intellectual competencies – Knowledge of:*

General

- Priority action areas for health promotion and disease prevention in the health strategy and public health programme of the Community;
- The evidence of health promotion and disease prevention effectiveness across European countries
- European and EU-policy on tobacco, nutrition, drugs, workplace safety, etc.;
- Models of health, social learning & motivation;
- Public health problems of vulnerable groups;
- Conflict resolution, social marketing, techniques of community development;
- Activities of health promotion;
- Methodology of designing health plans;
- History of Health Education/ Health Promotion in different countries;
- The concept of Salutogenesis;
- Applications of health promotion assessment and change theories and models such as the „Stages of Change Model“, the „Social Learning Theory“, the „Theory of Planned Behavior“, „Diffusion of Innovations-Theory“, the „Health Belief Model“, etc.;
- Applications of planning models such as the PRECEDE-PROCEED-model, the Public Health Action Cycle, Social Marketing, etc.;
- The Settings' Approach and its national/ international networks;
- Concepts of empowerment, participation, social capital, capacity building, etc.;
- How policy is formed, structured and how to influence it;
- Pre-determinants of health including the effect of social cohesion on health outcomes; an understanding of social marketing;
- The benefits and means of community development, including the roles and cultures of partner organisations such as local authorities;
- Health impact assessment of social and other policies;
- The role of strategic partnerships and the added value of organisations working together;
- The role of target setting, e.g. public service agreements, local authority agreements.
- The basic principles of and designs for public health programme evaluation, especially primary, secondary and tertiary prevention, including effect evaluation and process evaluation; health

economic evaluation; organisational evaluation; health technology assessment; comprehensive strategies.

## Lifestyle

- General mechanisms and principles underlying nutritional health, malnutrition, obesity, etc.;
- Epidemiology of common disorders associated with poor nutrition, including trends in different parts of Europe;
- European law relating to nutrition labelling of food products;
- International practices and standards for public health nutrition monitoring and intervention;
- The influence of agriculture and the food industry upon the nutritional environment;
- Approaches to nutritional improvement at population level;
- The influence of nutrition upon lipid metabolism, and the epidemiology of major lipid-related risk factors for disease;
- Nutritional factors in the aetiology and prevention of cardiovascular diseases and of cancers;
- The epidemiology around the world of obesity, and of its consequences;
- The impact of physical exercise on health;
- The impact of smoking and alcohol consumption on health.

## **Cross-disciplinary Themes, Including Strategy Making, Ethics, Other Themes**

*Practical competencies – Be able to:*

### Strategy making

- Communicate evidence from empirical studies on public health strategies to a lay audience, professionals and decision makers on European, national, regional and local level;
- Suggest relevant public health intervention based on evidence from empirical studies on public health strategies;
- Express the knowledge and insights achieved in the training programme in writing (reports) and orally (e.g. through presentations), at an academic level;
- Identify and critically and professionally assess published public health scientific literature;
- Describe, define and identify the logical structure of the fundamental steps of progression of a strategy;
- Describe and define the content of the fundamental steps of progression of a strategy;
- Point out important disciplines and parameters involved in the individual steps of progression of a public health strategy;
- Describe and discuss the main contents of:
  - WHO's public health strategies Health for All 2000 and Health 21;
  - The population health strategies of selected European countries;
- Describe how strategy development should be initiated;
- Work in teams on a strategy for a specific public health topic;
- Communicate and discuss partnerships and responsibilities;
- Apply principles of progression, cross-disciplinarity and integrated disciplinarity in a public health basic strategy, by use of the principle of individual disciplines and the mutual interaction;
- Acquire and critically assess relevant systematic documentation for the evaluation of programmes and strategies;
- Identify unmet needs for systematic documentation of and in strategies;
- Make judgments on mechanisms for assuring the strategy implementation;
- Develop plans for monitoring and evaluation of a strategy;

- Identify, retrieve and prepare list or set of indicators for monitoring and for evaluation of strategies;
- Perform a critical assessment of a public health strategy;
- Relate strategy to future development;
- Perform a comparative analysis of public health strategies developed or implemented;
- Develop and discuss a budget plan for a strategy;
- Prepare and write a strategic framework-action plan for a public health problem solution.

#### Philosophy and ethics

- Define and describe philosophical main streams and identify their way of thinking in a concrete piece of text.
- Characterise basic philosophical concepts as applied within public health, e.g. the concepts of hypothesis, theory, explanation, understanding, objectivity, evidence, method (including the terms 'quantitative', 'qualitative', etc.);
- Present major theories of ethics and ethical considerations concerning prevention and health promotion;
- Characterise basic ethical concepts within public health, e.g., auto immunity or self decisiveness, paternalism, uninvited intervention, responsibility, respect, etc.
- Discuss the ethical aspects of qualitative and quantitative research research;
- The ethical dimensions of professionalism in relation to the implementation of responsibility and accountability in an institutional context;
- Think in abstract terms;
- Comprehend scientific research as an interactive process.

#### Literature search and evaluation

- Identify the most important international literature databases – within the health sciences, the social sciences, and the natural sciences – applied in public health for the identification of:
  - Theoretical literature;
  - Original empirical studies;
  - Reviews;

- Construct a search profile for the most important data bases and conduct a basic literature search on this basis;
- Systematise empirical literature based on main characteristics of methods, actual conduct and findings/results and based on this produce a review table presenting results in the published literature within a given theme;
- Present and systematise important quality criteria for empirical studies and apply these criteria on identified literature and literature presented to the student;
- Define the concept of meta analysis and present an overview of strengths and weaknesses of meta analyses;
- Summarise the findings of empirical studies through meta analysis.

#### Project development

- Describe and define the main sections of a project protocol;
- Explain the aims and logics behind each section of the protocol;
- Explain the relationship between the sections of the protocol.
- Identify a relevant Public Health problem and formulate corresponding project aims and hypotheses concerning two disciplinary distinct angles on the problem; based on this the student shall be able to:
  - Develop a relevant project description complying with general principles for project descriptions, whether quantitative or qualitative;
  - Plan the theoretical and practical carrying out of the project, including the establishment of relevant collaborating partnerships, the requisition of necessary permissions, and the establishment of the necessary financial basis;
  - Plan and carry out the data collection, whether data are primary or secondary (data collected by others; published data);
  - Plan and carry out relevant data retrieval and analysis;
  - Communicate different stages of own project course in order to have them critically and constructively commented upon by professionals;
  - Write a brief thesis in clear language, easy to read, without spelling errors or poor syntax, including the following sections:
    - Summary in Danish and English;
    - Table of contents;
    - Introduction;

- Aims and hypotheses;
- Material and methods;
- Results;
- Discussion;
- References (based on the Vancouver rules);
- Annexes;
- Produce and perform an about 15 minutes oral presentation of own finalised project and thesis, applying relevant audio-visual tools;
- Critically evaluate the project, its aims, hypotheses, methods and results, in a professional oral discussion.
- Critically and constructively discuss the projects of other Public Health professionals.

#### IT use

- Handle files;
- Make use of the programme packages most commonly used in public health;
- Make use of relevant devices including PC's and projectors;
- Implement relevant programme packages in own stationary PC or a lab top PC.
- Know different theoretical paradigms and perspectives and able to use them appropriately (positivism, postpositivism, interpretivism, constructivism, critical theory, symbolic interactionism, phenomenology and feminism);

#### *Intellectual competencies – Knowledge of:*

#### Strategy making

- The definitions of strategy and difference among strategy, policy, programmes and plans;
- Essential aspects of public health strategies and key issues in strategy development;
- The two main categories of public health strategies – general and sectoral strategies;
- The classification of strategies according to geographical coverage
- Main factors that influence strategy implementation (critical factors for successful implementation);
- Best practices of public health strategies as tools for development (European, national, regional, local level);

- Contemporary public health strategies in the Europe Region;

#### Philosophy and ethics

- Major philosophical and ethical theories relevant for public health.

#### Literature search and evaluation

- Sources of published scientific and other public health documentation;
- Principles and methods of literature search, literature evaluation and meta-analysis.

#### Project development

- The general structure of a scientific manuscript and of a project protocol.

#### IT use

- Systems for electronic data handling and related instruction material.

## ANNEX

### Programme participants

#### Work group members and chairs

	Name	E-mail
<b>WG 1 Methods (epidemiology and biostatistics; qualitative methods). Coordinator: Kaunas: - Ramune Kalediene (socmed@kmu.lt) - Linas Sumskas (linas@kmu.lt)</b>	- Kristin VASILEVSKA (Skopje)	- <a href="mailto:vasile_kris@yahoo.com">vasile_kris@yahoo.com</a>
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	- Katarzyna CZABANOWSKA (Krakow)	- mxczaban@cyf-kr.edu.pl
<b>Total : 22</b>		

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