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***DRAFT FOR COMMENTS***

**Provisional Lists of  
Core Competencies for MPH Education (CCMPHE)**

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## **Introduction**

Over the years there has been an increasing amount of activity to systematise and describe precisely the knowledge and skills required by various groups of professionals to carry out specified tasks, deemed to be within their professional domains. This has been applied to a number of areas of medical and health and other health service activities, and within public health there have been a number of efforts to carry out this kind of analysis over the last two decades. There have been various different starting points for such activities; for example, attempts have been made to define public health competencies such that these might inform and advise public health education, while others have used them as building blocks for the construction of job specifications and job descriptions in public health. Further groups have used them as a means of evaluation of completion of training in public health.

In 2006 the Association of Schools of Public health in the European Region (ASPHER) took the decision that it was time to begin to define a system of core competencies which could be applicable to public health education, research and practice throughout Europe, and that ASPHER should take lead in the development of such a system. The ASPHER work included involvement of all ASPHER member organisations, various conferences and workshops<sup>1</sup>, and has resulted in two previous reports of competencies at intermediate stages of development<sup>1,2,3</sup>. We believe that competencies have to be appropriate and meaningful both to public health workforces and in an educational and research context, and that necessarily competencies will have to change over time to reflect changing epidemiology, technology etc. Accordingly, developments and definitions of systems of competencies need to be ongoing processes involving the whole wider public health community, all parts of which – e.g., teachers, scientists, service workers, employers, decision makers - need to identify actively with and to utilise such a system.

Based on the raw list of core competencies<sup>1</sup>, ASPHER has refined and increased the precision of definitions and concepts used, deemed to be appropriate for public health professionals of all kinds involved in higher levels of public health employment, whether in service work, teaching or research. On accounts of its nature, ASPHER is concerned primarily with development of public health education, training and research in Europe, and accordingly its first priority has been identified as the need to use defined competencies to inform the educational activities of its member organisations. As a first stage towards this, ASPHER has now prepared a further list of competencies considered to be appropriate for

use in advising curriculum development for MPH courses; this list is derived from, and is a subset of the list already referred to for all public health professionals<sup>4</sup>.

Like its “parent” list (the list of Core Competencies for Public Health Professionals (CCPHP))<sup>4</sup>, the present list is subdivided into six chapters, which of course may not apply to the structure of any particular public health educational programme; the structure however reflects the cross-disciplinarity of the sciences involved in public health and intends in principle to be exhaustive. Moreover, the list seeks to link identifiable practical competencies to professional activities in the public health services by use of a strategic model – ‘The Public Health Cycle’ – also cited among the competencies, with 5 mutually interacting stages:

*Stage 1.* Problem identification/community analysis/situation analysis;

a. Population health and its contexts;

b. Intervention systems;

*Stage 2.* Selection of targets and identification of target groups;

*Stage 3.* Selection of intervention;

*Stage 4.* Implementation of intervention;

*Stage 5.* Follow-up and evaluation.

Each and every one of these stages includes a set of functions and tasks, and thus each demands its own defined sets of competencies to be expected of the public health professional responsible for carrying out each such functions in an appropriate way. To facilitate the production of an overview of competencies needed in defined contexts, it may be appropriate firstly to select a population health challenge (e.g. lung cancer; cardiovascular disease; traffic accidents), secondly to propose an intervention (anti-tobacco campaigns; nutritional advice; change of transport system, etc.), and then, thirdly, to derive the necessary functions and their underlying competencies in each of the stages.

We are indebted to the many colleagues working in ASPHER member institutions who have contributed actively and creatively to the agreed procedure according to which the collective aim was to create a generally agreed-upon classification of competencies. Likewise, we are grateful to decision-makers and employers for providing us with their valuable contributions, by their participation in conferences and workshops.

Refining of the lists of competencies must be seen as a continuous and ongoing process, requiring sustainable management arrangements. The next steps in this process must include expression and inclusion of the views of both member schools and of other public health stakeholders. Such a process will ensure ongoing revision of lists, and agreement in the near future on the establishment of organisational structures to ensure the continued development and quality assurance of the lists must be one of ASPHER's next objectives.

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## **References**

<sup>1</sup> Foldspang A (Ed.). Provisional lists of public health core competencies. European Public Health Core Competencies Programme (EPHCC) for Public Health Education. Phase 2. ASPHER Series No. 4. Bruxelles: ASPHER, 2008.

<sup>2</sup> Whittaker PJ, Pegorie M, Read D, Birt C, Foldspang A. Do academic competencies relate to 'real public health practice'? A report from two exploratory workshops. *Eur J Public Health* 2010;20:8-9.

<sup>3</sup> Foldspang A (Ed.). Provisional Lists of Public Health Core Competencies. European Public Health Core Competencies Programme (EPHCC) for Public Health Education. Phase 1. ASPHER Series No. 2. Brussels: ASPHER, 2007.

<sup>4</sup> Birt C, Foldspang A. Provisional Lists of Core Competencies for Public Health Professionals. Draft for comments. Brussels: ASPHER, 2011.

## Methods in Public Health

### Definitions

#### *Health*

The WHO defined health in 1948 as *'a state of complete physical, mental, and social wellbeing and not merely the absence of disease or infirmity'*.

There are many definitions of health in the literature, none of which seem to be completely satisfactory. Many models of health have been described and identification of just three of these may illustrate some aspects of the discussion about the concept of health:

- a. The medical model sees health as the absence of disease; so health is viewed as a steady state from which an individual falls off, when s/he becomes ill.
- b. The behavioural model refers to the ability of an individual to fulfill the behavioural expectations of society regarding the functional capacities expected of an individual of that age, gender, etc.; thus an individual fulfilling all society's expectations in these respects is seen as enjoying health.
- c. The control model envisages health as the extent to which the overall environment can be controlled and improved so as to promote health and wellbeing.

#### *Public Health*

The science and art which focus on:

- Population health,
- Human systems and interventions made to improve health, and
- Interactions between these two systems.

Population health includes involvement with all social, economic, physical, chemical and biological conditions that influence or interact with the health of the members of the population.

Human systems and interventions made to improve health include all types of health services, social services, and all interventions and policies intended to improve health. Public health focuses on health promotion.

The concept of “interaction” refers to a real influence of the human system on population health.

There are other definitions, e.g, the UK Faculty of Public Health defines public health as ‘The science and art of promoting and protecting health and well-being, preventing ill-health and prolonging life through the organised efforts of society’.

### *Epidemiology*

The science focusing on the occurrence of health phenomena in populations.

### *Demography*

The science focusing on populations, especially with reference to size and density, fertility, mortality, growth, age distribution, and migration, and the interaction of all of these with social and economic conditions.

### *Statistics*

The science of collecting, summarising, analysing, and interpreting numerical information that is subject to chance or systematic variations.

### *Quantitative research methods*

Scientific methods applying formal probabilities when studying structure and when inferring about causality and effect.

### *Qualitative research methods*

Scientific methods not applying formal probabilities when studying structure or when inferring about causality and effect.

### *Sociology*

The science focussing on the structure and dynamics of human groups or populations and on their mutual interactions.

### *Social psychology*

The science focussing on the psychological aspects of the structure and dynamics of human groups or populations and on their mutual interactions.

### *Anthropology*

The science focussing on the cultural, religious, psychological and social aspects of the structure and dynamics of human groups or populations and on their mutual interactions.

## **Competencies**

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

#### *Public health*

- Major definitions of public health;
- Significant aspects of the history of public health theory and practice;

#### *Philosophy of science*

- Major definitions of philosophy and philosophy of science;
- Basic theories in philosophy and philosophy of science and concepts of importance for public health science and practice, e.g. concepts such as hypothesis, theory, explanation, understanding, objectivity, evidence, method, deduction, induction, utilitarian, qualitative and quantitative studies and observations.

### ***Demography, epidemiology and statistics – The student shall know and understand:***

- Definition of demography as a science;
- Major definitions of epidemiology as a science;

- Major aspects of the history of epidemiology;
- Basic demographic and epidemiological aspects, such as:
  - Population;
  - Population pyramid;
  - Population at risk;
  - Duration;
  - Time at risk;
  - Case vs. non-case;
  - Rate;
  - Fertility;
  - Migration;
  - Disease;
  - Incidence (number; rate; proportion);
  - Prevalence (number; proportion);
  - Mortality (number; rate; proportion);
  - Lethality/fatality (number; rate; proportion);
  - Specific mortality parameters (age, gender, disease, other);
  - Demographic transition;
  - Relative risk (incidence rate-ratio; prevalence proportion relative risk; other);
  - Odds ratio;
  - Population attributable risk;
  - Preventive fraction;
  - Etiological fraction;
  - Longitudinal study;
  - Cross-sectional design including population health surveys;
  - Longitudinal design;
  - Cohort design;
  - Case-control/case-referent design;
  - Observational design;
  - Quasi-experimental design;
  - Experimental design;
  - Randomised controlled trial (RCT);
  - Validity;
  - Reliability;
  - Bias (selection bias; information bias; analytical bias);
  - Inference;

- The concepts of test sensitivity, specificity and the predictive value of a positive and a negative test result;
- Lead time and lead time bias.
- The criteria to be satisfied before a proposed screening programme should be implemented;
- The concepts of health, disease, handicap and death both as comprehensive entities and in terms of identifiable components, i.e., physical, mental and social dimensions;
- The structure, main content and applications of standard authorised health classification systems, such as:
  - International Classification of Diseases (ICD);
  - International Classification of Functioning, Disability and Health (ICF);
  - International Classification of Health Interventions (ICHI);
  - Other systems;
- The principles, main content, validity and applications of standardised data collection instruments for measuring health outcomes, e.g. QOL, SF36, GHQ, FINBALT;
- The concept of epidemiological surveillance;
- Basic principles, methods, types and components of:
  - Epidemiological surveillance systems;
  - Health services monitoring systems;
- Major national and European population surveys and the application of their results;
- Definition of statistics as a science;
- Basic statistical concepts, such as:
  - Inference;
  - Parameter;
  - Probability;
  - Random sampling;
  - Probability sampling;
  - Stratified sampling;
  - The normal distribution;
  - The binominal distribution;
  - The Poisson distribution;
  - Statistical power;
  - Point estimate;
  - Interval estimate;

- Confidence interval;
- Association;
- Confounding;
- Interaction;
- Correlation;
- Significance;
- Statistical test;
- Parametric vs. non-parametric test;
- Student's t-test;
- Chi-square test (X<sup>2</sup>);
- Non-parametric tests, such as Kruskal-Wallis test and other tests;
- Predictor;
- Simple stratified analysis (e.g. Mantel-Haenszel);
- Standardisation;
- Direct standardisation;
- Indirect standardisation;
- Regression;
- Additive and multiplicative prediction models;
- Logistic regression;
- Linear regression;
- Randomisation.

*Qualitative methods – The student shall know and understand:*

- Main approaches to and concepts of qualitative methods frequently applied in public health as concerns population groups as well as organisations;
- Qualitative concepts, terms, theories and methodologies, such as:
  - Grounded theory;
  - Structuralism;
  - Qualitative interview;
  - Focus groups;
  - Action research.

*Sociology, social psychology and anthropology – The student shall know and understand:*

- Major definitions of sociological and anthropological science;
- Significant aspects of the history of social science;

- Sociological, social psychological and anthropological main theories and concepts, e.g. material levels of living, social group, social network, social system, culture, religion, social status, interest and power, attitude, behaviour;
- Basic concepts of classification and scaling.

*IT handling – The student shall know and understand:*

- General aspects of IT functioning.

*Literature search and evaluation – The student shall know and understand:*

- The existence of the most important literature databases and their main fields, within health sciences, social sciences, and natural sciences, for the identification of:
  - Theoretical literature;
  - Original empirical studies;
  - Reviews and meta-analyses.

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

*Philosophy of science and ethics*

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*Epidemiology and statistics – The student shall be able to:*

- Estimate basic demographic and epidemiological parameters, such as:
  - Population projection;
  - Time at risk;
  - Probability;
  - Incidence (number; rate; proportion);
  - Prevalence (number; proportion);
  - Mortality (number; rate; proportion);
  - Lethality/fatality (number; rate; proportion);
  - Specific mortality parameter (age, gender, disease, other);
  - Relative risk (incidence rate-ratio; prevalence proportion relative risk; other);
  - Odds ratio;
  - Population attributable risk;

- Preventive fraction;
- Etiological fraction;
- Validity;
- Reliability;
- Bias (selection bias; information bias; analytic bias);
- Estimate simple statistical parameters, such as:
  - Point estimate;
  - Interval estimate/ confidence interval;
  - Statistical power;
  - Strength of association;
  - Interaction parameters;
- Apply basic epidemiological concepts in a concrete but simple empirical setting, such as:
  - Cross-sectional design;
  - Longitudinal design;
  - Cohort design;
  - Case-control/case-referent design;
  - Quasi-experimental design;
  - Randomised controlled trial (RCT);
  - Correction for confounding;
- Apply basic statistical concepts in a concrete but simple empirical setting, such as:
  - Assess sample size requirements;
  - Random sampling;
  - Student's t-test;
  - Chi-square test ( $\chi^2$ );
  - Non-parametric tests, such as Kruskal-Wallis test and other tests;
  - Simple stratified analysis (e.g. Mantel-Haenszel analysis);
  - Direct standardisation;
  - Indirect standardisation;
  - Logistic regression in simple form;
  - Linear regression in simple form;
  - Randomisation;

- Design and carry out a healthcare needs assessment and draw appropriate conclusions;
- Design a monitoring system for health service interventions;
- Develop and apply a system to assess the quality of scientific publications in public health; a list of relevant aspects should include:
  - Aims and hypotheses/study questions;
  - Design;
  - Participant recruitment;
  - Data collection;
  - Analysis;
  - Selection validity and bias;
  - Information validity and bias;
  - Analytical validity and bias;
  
- Use a statistics software programme to perform the above statistical analyses.

*Qualitative methods – The student shall be able to:*

- Identify main types of qualitative empirical methods in literature;
- Plan, organise, carry out, analyse and report on:
  - Observations based on:
    - Grounded theory;
    - A structuralist approach;
    - Qualitative interviews;
    - Focus groups;
  - An action research intervention;

*Sociology, social psychology and anthropology – The student shall be able to:*

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*IT handling – The student shall be able to:*

- Make use of the most common IT functions.

*Literature search and evaluation – The student shall be able to:*

- Plan a search profile involving the most important data bases;
- Conduct a basic literature search on the basis of own search profile;
- Systematise empirical literature based on:
  - Main characteristics of design;
  - Findings/results;- and on this basis produce a review table presenting results from the published literature, based on a relevant search profile within a given series of themes;
- Present, systematise, and apply important quality criteria for empirical studies on identified literature;
- 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.
- Develop a public health research project protocol with the main sections:
  - Title page;
  - Summary;
  - Table of contents;
  - Introduction;
  - Aims and hypotheses;
  - Material and methods;
  - Discussion;
  - References based on the Vancouver rules;
  - Annexes;
- Conduct a public health project according to protocol;
- Write a scientific report with the main sections based on the project:
  - Title page;
  - Introduction;
  - Aims and hypotheses;
  - Material and methods;
  - Results;
  - Discussion;

- References (based on the Vancouver rules);
- Annexes.

## Population Health and Its Social and Economic Determinants

### Definitions

#### *Social and economic environment*

The external social and economic elements and conditions which surround, influence, and affect the life and development of an organism or of a population.

#### *Social and economic determinant*

Any social or economic definable entity that causes, is associated with, or which provides indices relating to a health outcome.

#### *Social determinants*

Social determinants are consequential to the structure and dynamics of human groups or populations and to their mutual interactions.

#### *Economic determinants*

Economic determinants are related to the level of prosperity, the utilisation, distribution and consumption of services, and to setting priorities and decision-making in a community.

### Competencies

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

- The level and trends of main population health indicators in European countries:
  - Mortality indicators:
    - Crude mortality;
    - Cause-specific mortality, especially cardio-vascular and cancer mortality and mortality caused by mental disease;
    - Age- and gender-specific mortality (e.g., infant mortality; before 5 years of age; after 60 years);
  - Disease indicators, especially concerning cardiovascular diseases, cancer and other chronic non-communicable diseases:
    - Indicators of occurrence and time (incidence, prevalence, duration);
    - Disease-specific occurrence indicators;

- Health expectancy indicators:
  - Life expectancy (mean; median) at birth and at later ages;
  - Population survival curves;
  - Disease-free life years;
  - Disability-adjusted life years (DALYs);
- Basic concepts of the social sciences, i.e. the following sociological concepts, hypotheses and definitions concerning the relations between social phenomena:
  - Individual and society;
  - Concept of the social environment;
  - Social structure, social processes;
  - Social group;
  - Social network;
  - Social capital;
  - Socioeconomic status, socioeconomic position;
  - Social inequalities;
- Basic concepts and terminology of empirical scientific disciplines that analyse the impact of the social environment on health (e.g. sociology, social epidemiology, demography, social psychology, history, cultural studies, geography), such as:
  - Family structure
  - Housing;
  - Education;
  - Occupation;
  - Employment;
  - Working conditions;
  - Economy;
  - Under-privileged groups;
  - Socio-economic status, socio-economic position;
  - Socio-economic inequality;
- The level and trends of main population socio-economic indicators in European countries, such as:
  - Family structure;
  - Housing;
  - Education;

- Occupation;
- Employment;
- Working conditions;
- Economy;
- Under-privileged groups;
- Socio-economic status, socio-economic position;
- Socio-economic inequality;
- The level and trends in indicators of health behaviour development, such as:
  - Exercise activity;
  - Dietary behaviour;
  - Alcohol abuse;
  - Drug abuse;
  - Cigarette smoking;
  - Sexual behaviour;
  - Injury-prone behaviour;
  - In European populations and population subgroups, e.g:
    - Adolescents;
    - The elderly;
    - Males and females;
    - Ethnic groups;
    - The socially disadvantaged;
    - Other socially, culturally and/or religiously distinct groups;
- The level and trends of associations in Europe between population health indicators – especially concerning cardiovascular diseases, cancer and other chronic non-communicable diseases - and various background indicators, such as:
  - Socio-economic, including social inequality;
  - Social environment (cultural, material, psychosocial, behavioural);
  - Behavioural;
  - General and health policy;
  - Social capital;
  - Economy;

- Major European research programmes focussing on population health and its social and economic determinants, e.g. North Karelia Project, and research contributing to the Marmot reviews, etc.

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

- Based on information from epidemiological surveillance systems (e.g. national systems; WHO's HFA2000 data base) accessible from, e.g., the internet:
  - Produce epidemiological documentation (tables, figures, etc.) on the relationship between the socio-economic environment and the health of European populations and population groups;
  - Produce forecasts for the health development of European populations and population groups.

## Population Health and Its Physical, Radiological, Chemical and Biological Environmental Determinants

### Definitions

#### *Environment*

The external elements and conditions which surround, influence, and affect the life and development of an organism or of a population

#### *Environmental Health*

The science of controlling or modifying those physical, radiological, chemical and biological conditions, influences, or forces surrounding human communities which relate to promoting, establishing, and maintaining health.

### Competencies

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

- Basic concepts of the natural sciences, in particular the biological sciences, i.e. the following biological disciplines and concepts:
  - Chemistry and physics;
  - Botany and zoology;
  - Biochemistry;
  - Physiology;
  - Genetics;
  - Toxicology;
  - Microbiology;
  - Biomedical disease concept;
  - Pathophysiology;
  - Immunology;
- Basic concepts and terminology of empirical scientific disciplines that analyse the impact of the physical, radiological, chemical and biological environment on health, e.g. toxicology, radiation measurement, etc.;
- The basic concepts, principles and methods of environmental risk estimation;

- The magnitude of the burden of disease, injury and fatality associated with physical, radiological, chemical and biological environmental exposures in national and European populations;
- Basic principles of measurement and monitoring of environmental components, e.g. water, indoor air, microorganisms;
- National and European policies, legislation, standards, systems and organisations for the monitoring and control of the physical, radiological, chemical and biological environment;
- Major stakeholders in environmental health, which would include the chemical industry, water purification industry, injury prevention programmes, accident and emergency services;
- Environmental and infectious disease surveillance systems, databases and warning systems as developed by ECDC and in individual European countries;
- Basic principles of and major approaches for preventing and controlling environmental hazards that pose risks to human health and safety;
- The general principles of emergency planning and how to manage major incidents, such as those caused by flooding, by a train crash, or by a bomb;
- Major European research programmes focussing on population health and environmental risks, e.g. research carried out over the last three decades in various European countries on improved road design; the association between alcohol consumption and road traffic accidents (RTAs); air pollution and health.

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

- Perform risk assessment associated with components of the physical, radiological, chemical and biological environment;
- Based on information from epidemiological surveillance systems (e.g. national systems; WHO's HFA2000 data base) accessible from, e.g., the internet:
  - Produce epidemiological documentation (e.g. tables, figures, multimedia methods) on the relationship between physical, chemical and biological environmental exposures and the health of European populations and population groups;
- Identify priority issues/areas in the major topics in "environment and health" where more information and research are needed;

## Health Policy; Economics; Organizational Theory and Management

### Definitions

#### *Economics*

The science of utilisation, distribution, and consumption of services and materials and of setting priorities and decision making.

#### *Policy*

A course or method of action selected usually by a public or private body, at international, national or local level, from among alternatives to guide and determine present and future decisions.

#### *Organisation*

A functional structure for the purpose of systematising collectively activities for a particular goal, including the planning and managing of programmes, services, and resources.

#### *Management*

Management is the science and art of strategy identification and implementation by getting people together to accomplish desired goals efficiently and effectively.

#### *Strategy*

A formerly planned set of actions designed to deal with a problem, including the following stages, which are cyclical in principle:

1. Problem identification/community analysis/situation analysis;
  - a. Population health;
  - b. Intervention system;
2. Selection of targets and identification of target groups;
3. Selection of intervention;
4. Implementation of intervention;
5. Follow-up and evaluation.

### ***Intellectual competencies - The student shall know and understand:***

- Significant aspects of the history in one European country of:
  - Health policy;

- Social policy;
- Health services;
- Social services;
- Legislation affecting health and health services;
- NGOs operating in the public health arena;
  
- Important concepts, including:
  - Strategy targets/objectives;
  - Market and market failure;
  - Gross National Product/Gross Domestic Product;
  - Inputs, processes and outcomes of health services;
  - Efficiency;
  - Elasticity;
  - Marginal analysis;
  - Opportunity cost;
  - Cost analysis related to health:
    - Cost of service;
    - Years of life lost;
  - Cost-effectiveness;
  - Cost-utility;
  - Cost-benefit;
  - Quality assurance and quality development;
  - Equity;
  - Acceptance and acceptability;
  - Need and demand;
  - Operational management and coordination of activities (logistics);
  - Leadership style;
  - Management of change;
  - The learning organisation;
  - Organisational governance;
  - Intersectoral collaboration;
  - Programme implementation;
  - SWOT analysis (Strengths-Weaknesses-Opportunities-Threats);
  - Development modelling;
  
- Main principles for the organisation of health systems;
  
- Concerning health and social services in one European country:

- Components, structure and organisation;
  - Economics;
  - Functioning;
  - Legal aspects;
  - Regulation;
  - Management;
  - Human resources;
  - Decision processes;
  - Production/output;
- 
- Main principles and methods of evaluation of public health policies, strategies, programmes, and institutions, including:
    - General principles of evaluation;
    - Health economics evaluation;
    - Health technology assessment;
    - Evaluation of comprehensive strategies;
  
  - Limitations of market principles in the finance and organisation of health care;
  - The role of national and international organisations in the development of public health, such as:
    - WHO;
    - EU;
    - NGOs;
  
  - National, EU, European, international and global public health strategies, e.g.:
    - WHO's strategies, e.g. HFA2000, Health 21, Health2020, Ottawa Charter;
    - EU's strategies, e.g. 'Together for health – a strategic approach for the EU 2008-2013';
    - The public health strategy of one European country;
  
  - The role of national and international commerce in supporting or hindering the development of public health interventions to improve population health, for example:
    - The tobacco industry;
    - The alcohol industry;
    - The farming and food industries;
    - The pharmaceutical industry;
    - The military industry;
    - Insurance companies.

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

- Develop and describe a public health strategy based on standard public health methods and guidelines, and including:
  - The identification of stakeholders and establishment of potential partnerships – for potential intersectoral joint working - for the development and implementation of the strategy;
  - Opportunities of intersectoral collaboration;
  - The identification of structural, cultural and behavioural barriers for the implementation of the strategy;
  
- Perform a health economics assessment of a given procedure, intervention, strategy or policy, e.g.:
  - Cost-effectiveness assessment;
  - Cost-utility assessment;
  - Cost-benefit assessment;
  
- Perform a SWOT analysis for a programme, an institution or a procedure;
- Identify relevant documentation needs and sources for the the development of a public health strategy to meet a population health challenge;

## Health Promotion: Health Education, Health Protection and Disease Prevention

### Definitions

#### *Health promotion*

Health promotion consists of activities to improve or protect health and to prevent disease.

#### *Health education*

Activities to increase awareness and influence favourably attitudes and knowledge relating to the improvement of health on both a personal and on a community basis.

#### *Health protection*

Activities based on legislative or other means seeking to promote healthier environments, within which healthy choices are easier to make.

#### *Disease prevention*

Measures taken to prevent diseases or injuries, working at population level.

### Competencies

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

- Significant aspects of the history of health promotion theory and practice, including main health promotion charters, e.g. Ottawa;
- The definitions of:
  - Health education;
  - Health protection;
  - Disease prevention;
- The definitions of types of disease prevention:

- Primary prevention;
- Secondary prevention;
- Tertiary prevention;
- Central concepts applied in health promotion, e.g.:
  - Empowerment;
  - Holism;
  - Community development;
  - Participation;
  - Capacity building;
  - Social marketing;
  - Health advocacy;
- Major social, behavioural and biomedical theories and models underlying:
  - Health education, including behaviour change, e.g.:
    - Stages of change theory;
    - Social-psychological theory;
    - Diffusion theory;
  - Health protection systems, e.g.:
    - Communicable disease control;
    - Environmental health management;
    - Accident prevention systems;
  - Disease prevention, including:
    - Primary prevention;
    - Secondary prevention;
    - Tertiary prevention;
- The basic theories underlying communication skills – the basic principles of:
  - Learning processes;
  - Strategic communication;
  - Marketing;
- Basic principles and methods used in health promotion practice
  - Health education, including information on methods for behavioural modification as concerns:
    - Basic health assessment;

- Common risk factors;
  - Common factors improving health;
  - Relevant use of health services;
  - Health protection, including e.g.:
    - Communicable disease control;
    - Environmental health management;
    - Accident prevention systems;
    - Protection from occupational hazards;
  - Primary prevention programmes, including:
    - Prevention of infectious disease, e.g. immunisation;
    - Prevention of non-communicable diseases;
  - Secondary prevention programs (screening), including the criteria to be satisfied before a screening programme is set up;
  - Tertiary prevention;
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- The effectiveness and cost-effectiveness of major health promotion programmes as documented by scientific methods (evidence of effect);
  - Major health promotion policies and strategies in one European country.

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

- Identify population health challenges relevant for health promotion at various levels of social and political organisation, from global to local;
- Communicate effectively public health messages – including risk analysis - to lay, professional, academic and political audiences, by use of modern media, e.g. written media and audio-visual techniques;
- Design and describe a health promotion strategy, using standard public health tools;
- Write a policy proposal:
  - Title page;
  - General introduction;
  - Scientific background;
  - Implications of the scientific position;
  - Policy options;
  - Policy recommendations;
  - References (based on the Vancouver rules).

## Ethics

### Definition

Ethics is the branch of philosophy focusing on distinctions between right and wrong.

### Competencies

#### ***Intellectual competencies - The student shall know and understand:***

- Major ethical theories and concepts relevant for public health, including human rights concepts;
- Significant aspects of the history of ethics;
- Important ethical concepts, such as:
  - Autonomy/self decisiveness;
  - Paternalism;
  - Uninvited intervention;
  - Responsibility;
  - Respect;
  - Acceptability and acceptance;
  - Non-discrimination;
  - Human rights;
- Good epidemiological practice and good clinical practice, including ethical aspects of data handling, confidentiality, security, privacy and disclosure;
- Ethical dimensions of:
  - Public health strategy making, including the ethical challenges of each individual stage of a strategy;
  - Professionalism in relation to the implementation of responsibility and accountability in an institutional context;
- Ethical committee systems and requirements for public health research;
- Respect and adhere to ethical principles regarding data protection and confidentiality regarding any information obtained as part of professional activities.

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

- Identify ethical aspects of concrete public health interventions, strategies and policies;
  - Demonstrate the implementation of basic ethical principles in public health strategies making, such as a non-discriminatory approach to the target population and in human resources management;
  - Prepare an application to the ethical committee system within the context of appropriate research governance.
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