

HEALTH PROMOTION AND DISEASE PREVENTION A Handbook for Teachers, Researchers, Health Professionals and Decision Makers	
Title: 3.1.1	Contemporary Concept and Definition of Health Care
Module: 3.1.1	ECTS: 0.5
Author(s), degrees, institution(s)	Zvonko Susic , MD, MSc, PhD, Associate Professor Andrija Stampar School of Public Health Medical School, University of Zagreb, Croatia Doncho Donev , MD, PhD, Professor Institute of Social Medicine, Institutes, Medical Faculty , University of Skopje, Macedonia
Address for correspondence	Zvonko Susic , MD, MPH, PhD, Associate Professor Andrija Stampar School of Public Health Medical School, University of Zagreb Rockefellerova ul. 4, Zagreb 10000, Croatia Phone: +385 1 4566996 Fax: +385 1 4590275 e-mail: Zvonko.Susic@andrija.snz.hr
Key words	Health care, levels of prevention, health promotion, disease prevention, screening, early treatment, rehabilitation, palliative care, social support
Learning objectives	After completing this module students and public health professionals should be able to: <ul style="list-style-type: none"> • understand the contemporary concept of health care; • the idea of health intervention and the levels of prevention in terms of natural history of disease; • locate the position of prevention in the system of health care; • understand and adopt the definitions of terms: health promotion, health maintenance, disease prevention, early treatment, rehabilitation and palliative care; • value the specific (particular) measures for health promotion and disease prevention in terms of their acceptability, effectiveness and efficiency; • estimate the possibility of the implementation of particular measures on individual level, the level of community as well as the society as whole.

<p>Abstract</p>	<p>Paper gives a historical and theoretical overview of understanding and contemporary concept of health care and various levels of prevention (primary, secondary and tertiary prevention) in terms of the natural course/ history of disease. Special emphasize is given to the primary prevention and preventive medicine, what is disease, how to prevent it, to cure it, and to make its consequences less harmful. Specific examples and practices are presented for the specific measures for prevention of disease, control of risk factors, prevention of mental disorders in susceptible individuals or populations, protective procedures for communicable diseases control, as well as monitoring and regulation of environmental pollutants. Primary prevention is to be distinguished from secondary prevention, which is the prevention of complications or after-effects of a drug or surgical procedure, and tertiary prevention, the amelioration of the after-effects of a disease.</p>
<p>Teaching methods</p>	<p>Lecture 1 hour, seminar 3 hours (Seminar is using the experience of students as the result of the implementation of “interventional questionnaire” and pre-practice.)</p> <p><i>Task:</i></p> <p>1-3-students are interviewing one adult person each according to their choice (health workers, very old persons /70+ years), and adolescents excluded), using the given questionnaire. Each student is reporting on:</p> <ol style="list-style-type: none"> a) his/her own reaction after studying the questionnaire (particularly related to expected patient’s understanding, reactions to questions, acceptability of particular question, etc.); b) the procedure and result of the interview, the reactions of the respondent and his/her decisions regarding his/her health behaviour in the future; c) how informed is respondent and what is he/she doing for his own health; d) student’s opinion relating the effects of the interview done and suggestions for improvements.
<p>Specific recommendations for teachers</p>	<p>Teaching methods include introductory lectures, self learning, and extensive discussion on different levels of prevention in terms of the natural course of the disease and the concept of pathogenesis.</p>
<p>Assessment of students</p>	<p>Seminar paper and case problem presentation – preventive programme design</p>

CONTEMPORARY CONCEPT AND DEFINITION OF HEALTH CARE

Zvonko Susic, Doncho Donev

Historical overview

The history of the idea about medicine and its objectives comprises two different concepts. According to the first one, the main objective of medicine is health promotion that is strengthening and promotion of health, and prevention and protection from diseases. According to the other concept, the main objective of the medical science and health care is treatment of disturbed health status.

The antagonism between these two concepts is rooted in the traditional Greek myth about the God of healing Asclepius (known as Salus in the Roman mythology) and his daughter Hygieia, Goddess of health whose attribute – a serpent drinking from a flat pot – became a symbol of the medical profession. Asclepius's followers pointed out that the main role of the doctor was to cure the disease, renew the disturbed health regardless of the fact whether it came with the birth or was developed in the course of life. On the other side, the Hygieia's followers considered the health as positive attribute of every man that led a wise life. According to them the medicine should reveal and learn the natural laws that provide people with healthy mind and body and enable them to maintain total health (1).

The oscillations between these two concepts have maintained through centuries. Nevertheless, Asclepius' treatment concept was more dominant and achieved notably higher development.

The scientific and technical development in the last 100 years, especially in the field of the medical science, enabled notable recognition of many diseases, their description in details, their classification, and explanation of the leading mechanisms of their development. This was followed by strong development of the health care system. The health care system, which until the Middle Age, mainly consisted of isolated general practitioners and church-monastery hospitals, grew into an intricate system with complex health institutions that primarily deal with diseases. The positive health study advanced little slower. In comparison to the abundant literature about diseases, the literature about health seemed very poor.

Nowadays despite the modern scientific and technical achievements worldwide, in the undeveloped world more than 10 million children per year die from hunger and bad living conditions. Due to the weak economy these countries cannot apply modern world medicine. On the other hand, the developed countries firstly faced an increase in the "new types of deaths" caused by cardiovascular diseases, cancer, injuries, chronic respiratory and other systems diseases etc. Further health problems in the developed world manifested in increase of the behavioural and lifestyle caused diseases, mental diseases and diverse pathology in the elderly population. The unemployment has also shown its health consequences, as well as the changed and polluted environment. The health care system responses to these problems were specializations and sub-specializations, new and advanced high technologies and increased use of medications. The results were dissatisfactory and the health care costs were too high even for the most developed countries. This augmented the discontent in "all interested parties": population, health workers, financiers (Health Insurance Funds) and politicians. The opinions for need of reorientation in the understanding of the role of the medicine and health care, which should not deal only with disease, but also with their prevention and modes for health maintenance and promotion, became louder.

The definition of health care is of importance for the theorists and researchers in order to identify the research problem, create tools for carrying out the research and select appropriate variables. On the other hand, for the public health sciences the definition also provides an operationalization important for measuring, comparison, planning and acting in the field of health care. This imposes the need to define and explain the health more thoroughly and to emphasize all the factors that enable its maintenance and promotion. In addition, besides the active approach of the individual that seeks for answers and help from the institutions responsible to provide health care, the collective approach to the population level gains on significance through institutions responsible for groups and communities health care. In wider sense, the social community is obliged to provide equal right to health for all its members (citizens), and not only by the health service activities, but by active participation of all social sectors in undertaking measures for health prevention and promotion and healthy living and working conditions creation. This is the fundament of the WHO strategy “Health for All” for the European region, where dominates the position that “the health is not a merchandise that could be bought in the health service”, but it is a part of the continuous responsibility of the community and the individuals to prevent and promote their own health.

During the 20th century a significant increase of life expectancy was achieved, especially in the developed countries. First of all, this was result of a successful contagious disease control and decreasing of the general mortality rate, especially the newborns and infants, and small children mortality rate. However, despite the strives for further life expectancy increase, nowadays health care development objectives more and more emphasize the better life quality providing. In the European Region WHO “Health for All” strategy’s goals this is declared as “adding years to the life” and “adding life to the years”. It means that the goal is not only to increase the life expectancy, but also to provide a better quality life, that is to build up the capacity for leading economically and socially productive life. Following the logic, the life quality studies are dominantly directed towards identifying the treatment, rehabilitation and other health care measures, including the prevention, that influence the capacity for work and daily life function completion. For this purpose measures that include physical, mental and social state are used. All these is linked to the medicine and health care new goals – its measures to influence not only on the protection and life expectancy increase, but especially, on the life quality improvement.

Therefore, in recent times, the population’s health and health conditions measuring, in addition to the classic mortality and morbidity indicators and other negative health indices, includes some new indicators. These new indicators are complex and some of them are QALY – Quality Adjusted Life Years as well as DALY – Disability Adjusted Life Years, which result from the health service’s work, and in which the life expectancy and life quality improvements resulted from the undertaken health interventions and programmes.

Definitions of Public Health and Health Care

Different terms and definitions for the health care have been used. In 1920 Winslow, from the University of Yale, defined the term *Public Health*, in our terms also known as *people’s health*, as follows: “Public health is a science and art of disease prevention, prolonging life, and promoting health and well-being through organized community efforts for sanitation of the environment, control of communicable infections, organization of medical and nursing services for early diagnosis and prevention of disease, education of the individuals about personal health and the development of social machinery to assure everyone a standard of

living adequate for the maintenance or improvement of health” (2).

The WHO Constitution includes precise definition of health, but the health care is not defined. In different countries there were and still are different definition of the term “Public Health”. In many countries the real “public health” and “health care” exist as two different sectors. However, the need for joint work of these two sectors is evident. In its fundamentals the public health is health of the people. Thus, it includes organization of the personnel, the facilities and the requirements for health care services that provide health promotion, diseases prevention, diagnosis and treatment of the ill, as well as medical, social and professional rehabilitation.

Hence, *health care* is an entirety of measures and activities conveyed by the community and especially its integral part – the health i.e. the health service, as well as each individual measures and activities for prevention and promotion of his/her own health and health of the other people.

Definition of Prevention

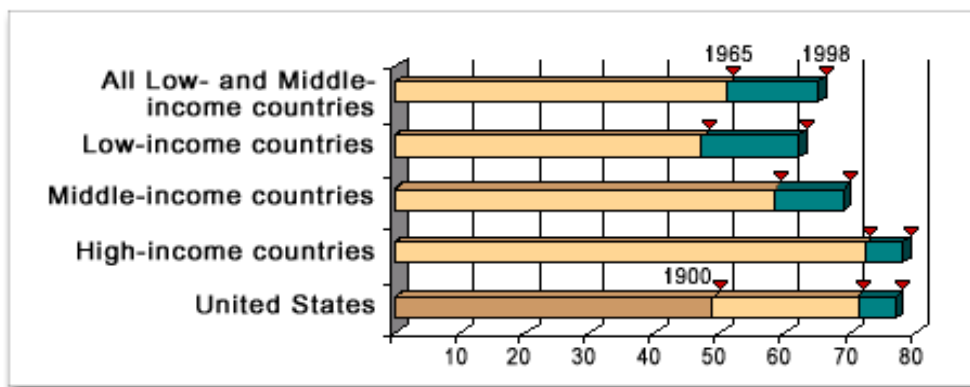
Actions aimed at eradicating, eliminating, or minimizing the impact of disease and disability. The concept of prevention is best defined in the context of levels, traditionally called primary, secondary, and tertiary prevention” (3).

The practices of public sanitation and personal hygiene have dramatically reduced the incidence of certain infectious diseases. The control of many infectious illnesses has occurred as societies themselves have become more advanced. Many of the protections are now in place such as vaccination, water and sewage treatment, and safe food-handling and distribution practices have vastly improved our ability to control infectious disease outbreaks.

Why should one practice prevention?

The world is healthier than it has ever been, with a 30 year global increase in the past 100 years. The dramatic increase in life expectancy that was observed in the past century in both developing and developed world (Figure 1) can be attributed primarily to improved preventive practices, not to advances in clinical medicine. It has been estimated that the majority of the increase in life expectancy was due to prevention.

Disease prevention and hygiene practices have a very long history. Hygienic practices are inherent in all the major religions such as Islam, but also including Christianity, Judaism, and Hinduism. The best scientific information can be approached via the Internet to the major religions. This prevention information can then be carried on the existing information sharing systems in the local communities, including religion, school friends, colleagues, social groups, etc.

Figure 1. Life expectancy at birth in different countries, 1965 and 1998

Source: *The World Bank Group, 2001*

Epidemiologic transition and Health

Today, it is widely assumed that with increasing economic growth, the developing countries will follow the same path as Europe and North America and experience what has become known as the “epidemiologic transition.” This term describes the changing patterns of disease that accompanied overall improvements in health in the late 19th and early 20th Century. As mortality rates declined and life expectancy rose, these populations experienced a shift in the pattern of disease, from one dominated by infectious diseases to one dominated by chronic disorders such as heart disease and cancer. The shift to chronic diseases can be partly explained by the fact that many more people were living to the age when chronic diseases strike. Even so, this transition represented not just a simple substitution of one set of problems for another but an overall improvement in health. Elements of this epidemiologic transition are in fact occurring now, to varying degrees, throughout much of the developing world. In some of the middle-income countries of Latin America and Asia, for instance, chronic diseases now take as great or an even greater toll than infectious diseases (1). But this transition is by no means complete. Many countries, especially the poorest, still have a huge burden of infectious diseases along with a growing problem of chronic diseases. These populations have not traded one set of problems for another; instead, they are suffering from both, in what is known as the “double burden” of disease (4). Nor is the transition inevitable. As the history of the Sanitary Revolution illustrates, concerted policies and investments are necessary to improve both environmental quality and public health.

Lifestyle Factors

In the first half of the last century people were too busy trying to survive to worry about health as much we do today, much less about how we might practice healthier habits in order to prevent disease. Progress that did occur was brought about through the organization of unions in the workplace, legislatures, and public health ordinances. Toward the end of the century, in 1990, the *Healthy People 2000* report made a call to work toward a culture that actively promotes responsible behaviour and the “adoption of life-styles that are maximally

conducive to good health. Since that time, there is more and more concrete evidence indicating that practicing healthy habits can significantly decrease our chances of developing chronic disease. Therefore, of all the health determinants that we have discussed, lifestyle factors are among the most controllable and influential factors influencing our health.

According to Susser, our knowledge on how to prevent diseases is developing through 4 phases:

1. phase he calls the phase of sanitary statistics (first half of 19th century) characterized by theoretical consideration of miasma i.e. poisoning by foul emanations from soil, air, and water with analytical approach demonstrating clustering of morbidity and mortality, and preventive interventions such as introducing drainage, sewage, sanitation
2. phase - infectious disease epidemiology (latter half of 19th century) dominated by germ theory: single agent relate one to one specific disease, and efforts in laboratory isolation and culture from disease sites, experimental transmission and reproduction of lesions. Preventive measures were mainly to interrupt transmission (vaccines, isolation of the affected through quarantine and fever hospitals, and ultimately antibiotics)
3. phase - chronic disease epidemiology (latter half of 20th century) with “black box” type of understanding of aetiology: exposure related to outcome, without necessity for intervening factors or pathogenesis. Analytic approach was preoccupied with calculation of risk ratio of exposure to outcome at individual level in populations, and preventive strategy was focused on control risk factors by modifying lifestyle (diet, exercise, etc), agent (guns, food etc), or environment (pollution, passive smoking, etc)

The phase - eco-epidemiology is just emerging, and instead of “black box” will hopefully understand Chinese boxes: relation within and between localized structures organized in a hierarchy of levels, and be able to analyze determinants and outcomes at different levels of organization: within and across contexts (using new information systems) and in depth (using new biomedical techniques). Prevention will then apply both information and biomedical technology to find leverage at efficacious levels, from contextual to molecular.

Components (levels of prevention) of the contemporary concept of health care

Even though all health prevention measures are an integral whole they still can be divided in several groups according to the stadium of the natural course of the considered disease and the levels at which the health care is provided. Regarding the phase of the natural course of the disease in which we act, there are primary, secondary and tertiary intervention, that is prevention (Scheme 1).

Scheme 1. Levels of disease prevention in the natural course of the disease with responsible sectors/institutions (1)

<p>PREPATHOGENESIS</p> <p>HEALTH</p>	<p>100% HEALTH</p> <p>I. PRIMARY PREVENTION</p> <ol style="list-style-type: none"> 1. Measures for promotion and prevention of the health – health promotion 2. Measures for health prevention – specific care 	<p>WHO CONVEYS THEM?</p> <ul style="list-style-type: none"> • Social community with the non-health sectors • Individuals and the population through self-care • The health service through the primary health care (PHC) and the specialized preventive medical care
<p>Preclinical asymptomatic stadium</p> <p>PATHOGENESIS</p> <p>Clinical manifested stadium</p> <p>DISEASE</p> <p>Stadium of convalescence</p>	<p>II. SECONDARY PREVENTION</p> <ol style="list-style-type: none"> 3. Measures for early detection of the diseases 4. Measures for prompt treatment and restriction of the disability <p>III. TERTIARY PREVENTION</p> <ol style="list-style-type: none"> 5. Measures for rehabilitation 6. Measures for support <p>DEATH</p>	<ul style="list-style-type: none"> • The health care through: <ul style="list-style-type: none"> ○ primary health care ○ secondary health care ○ tertiary health care <p>=> The health service and the rehabilitation service => Social, humanitarian and educational institutions and services and NGOs</p>

Primary, secondary, and tertiary prevention is important part of the broad-based knowledge base needed for practice of public health worker. Primary, secondary, and tertiary prevention activities, or promoting health, early disease detection and treatment of established disease, are crucial parts of the role of public health. A sound understanding of these concepts is important to being successful in your professional activities.

Primary prevention

Primary prevention (intervention) is prevention and promotion of the general health condition – that is *health promotion*, and neutralization of the causes and risk factors in order to prevent disease development – that is *specific prevention*. The U.S. Preventive Services Task Force (5) defines primary prevention measures as “those provided to individuals provided to prevent the onset of a target condition.” Primary prevention measures include activities that help avoid a given health care problem. Examples include passive and active immunization against disease as well as health protecting education and counselling promoting the use of automobile passenger restraints and bicycle helmets. Since successful primary prevention helps avoid the suffering, cost and burden associated with disease, it is typically considered the most cost-effective form of health care. The primary prevention is more effective and more economic than all other therapeutic measures for disease control and treatment. Nevertheless, many doctors in their practice still does not apply enough health education, advising and other primary prevention measures regarding the causes and risk factors in order to prevent the preventable conditions and diseases development in their practice. In this first prevention level the intervention is directed towards the healthy individuals. There are two groups of measures:

1. Measures for health promotion

The community as a whole, with all its social sectors, including the health sector that is the health services, convey these measures as well as measures for training people to take control over their health and to promote it. In order to achieve complete physical, mental and social health, individuals and groups must be able to identify and fulfil their aspirations, satisfy their needs and change and control the environment in positive sense. Health promotion goal is to achieve and maintain the balance between the individual and the environment combining the individual choice with the social responsibility. These measures should make more favourable hygienic, economic, social and other conditions with positive influence on the people's health, such as:

- environment promotion and pollution control through adequate water-supply, disposition of waste materials, sufficient hygienically correct, accessible to the people, food, prevention of air pollution, prevention of noise pollution, adequate urban development and housing, traffic safety and neutralization/diminishment of the industrialization, urbanization and technological development's side effects etc.;
- working (enterprises) and education (schools) conditions improvement and the like;
- improvement of the life economy, nutrition and the living standard in general, as well as community's general social problems (rights, solidarity, equity etc.) solving;
- promotion of the individual and group's behaviour, providing adequate conditions for rest and recreation, increasing the population educational level in general and health culture, health education activities for training each individual and the population as a whole, in health prevention and promotion through changing the harmful habits and risky behaviour for healthy lifestyles and appropriate usage of the health, social and other services;
- analysis of the health behaviour, lifestyle and habits, introduction and application of special programmes (preventive and health-educational programmes, healing-target programmes, etc.), work on development and promotion of the health services (infrastructure, personnel, equipment).

2. Measures for diseases prevention and control – specific prevention

These measures for diseases prevention and control are also called measures for specific prevention (of prophylaxis) because they are directed towards diminishment of risk factors for specific diseases and susceptibility of the organism to agents in order to prevent occurrence of certain contagious and other diseases. These types of measures are:

- vaccinations/immunization (compulsory and facultative) – vaccines (live or dead bacterial and viral vaccines) provoke a creation of active immunity against certain infectious diseases agents;
- serum-prophylaxis is protection by bringing into the body passive immunity in healthy individuals exposed at risk or threatened by some contagious diseases through administration of serum with antibodies against that infectious disease;
- chemo-prophylaxis is protection of healthy individuals from infectious diseases with use of medicaments (tablets quinine for protection from malaria);
- identification and control of germs-carriers in order to protect the healthy population from spreading and epidemics of infectious diseases;
- epidemic monitoring, isolation and quarantine of diseased and suspected individuals

- in order to prevent the epidemic of certain contagious or quarantine disease;
- disinfection, extermination of insects and rodents, environment cleaning up for eradication of the vectors (insects, rodents, wild and domestic animals) transmitted infectious diseases;
- fluoride-prophylaxis – using fluoride compounds on individual level or fluoridation of the drinking water for caries prevention of the population;
- vitamins-prophylaxis – with vitamin preparations on individual level (A+D drops and pearls, multivitamin syrups and similar) for rachitic and other vitamin deficiencies in children, and vitamin enrichment of food products, especially for children nutrition, for prevention of vitamin deficiencies at the population level;
- fight against the risk factors, first of all against smoking and other carcinogens and risk factors for cancer, cardiovascular and other chronic and degenerative diseases .

Secondary prevention

Secondary prevention (intervention) is strictly within the health care services domain and consists of identification of the “individuals with pathological conditions” or in the early stadiums of the diseases, when the patient is still not aware of the disease and has no symptoms. The U.S. Preventive Services Task Force (3) describes secondary prevention measures as those that “identify and treat asymptomatic persons who have already developed risk factors or preclinical disease but in whom the condition is not clinically apparent.” These activities are focused on early case finding of asymptomatic disease that occurs commonly and has significant risk for negative outcome without treatment. Screening tests are examples of secondary prevention activities, as these are done on those without clinical presentation of disease that has a significant latency period such as hyperlipidemia, hypertension, cervical, breast and prostate cancer. With early case finding, the natural history of disease, or how the course of an illness unfolds over time without treatment, can often be altered to maximize well-being and minimize suffering.

The early diagnosis enables prompt intervention and treatment that prevents development of manifested disease and its spreading in the environment (in the cases of infectious diseases) or prevents the disease from advancing and complications, chronicity and recidivism, disability and invalidity. It also contributes to lowering the treatment and rehabilitation costs, and in some diseases prevents rapid and premature dead. Thus, secondary prevention also includes two groups of measures: measures for early diagnosis and measures for prompt treatment.

1. Early diagnosis of diseases

Early diagnosis of diseases is most usually done through daily routine work of the health service, systematic and periodical check-ups, as well as through targeted screening check-ups of the population or certain risk groups – *method of tracking or screening*. This method uses special specific procedures and tests for early diagnosis of certain diseases so called screening tests. Actually, the tracking means searching – sifting the population or its groups with specific tests and procedures in order to select potential ill persons in the earliest pre-clinical asymptomatic stadium of the diseases from the apparently healthy population. The aim of the applied tests is to point out a suspicion for certain disease or pathological process, to show that “something is going on” in the people with positive test results, in order to subject those people to further monitoring and testing

for making diagnosis. Classic examples of tracking are the fluorography of the lungs for early detection and treatment of TBC and the blood pressure measuring for detection and treatment of hypertension. Other measures include: Papanicolaou (Pap) tests for early diagnosis of uterine cancer in women, various laboratory biochemical tests for measuring the blood and urine sugar levels for early detection of diabetes, mammography for early detection of the breast cancer, monitoring the eye pressure for early detection of glaucoma etc.

There is a *mass screening* for the whole population or *selective (group) screening* for part of the population or population groups at risk for certain disease occurrence. There is also a *multiple screening* when a serial of tests for early detection of two or more diseases (test battery) are performed, as well as *multi-step or multi-phase screening* when in the disease diagnosis several phases, several experts and several level of the health care system are included. In this group of measures, in addition to the early diagnosis measures, measures for detecting the risk are included, that is, identification of the cases under suspicion. In order to be widely applicable, the screening test should possess many of the following features: to be fast (in order to save time), cheap (to save money), simple to perform (by nurse or technician and not only by doctor or doctor specialist), to be flexible in order to be performed (applicable) on field, painless, harmless and non invasive, sensitive (to give no false negative results) and to be credible and reliable (to give no false positive results).

2. Measures for prompt treatment

Treatment has always been the most attractive and most trustworthy protection measure. It is a curative – therapeutic part of the health care intended to hold back and stop the pathological process, to prevent further clinical development of the disease, to limit the disability and to prevent complications and consequences.

Regarding the place where it is performed the treatment could be conducted: at home, in outpatient departments (policlinics), in hospitals (general and specialized), in other specialized institutions and at other places.

Regarding the mode of action the treatment could be causal and symptomatic.

Regarding the mode of performance that is the therapeutic method: with medicaments, surgical intervention, psychotherapy and physical therapy.

Regarding the success cured disease, improvement, maintaining the condition, worsening the disease and fatal outcome.

Tertiary prevention

These measures include identification and taking care of those conditions that could not be cured or leave consequences despite the treatment. They are attempts to prevent, diminish and eliminate the diseases and injuries' consequences. The aim is to maintain the quality of life where due to the unfavourable course of disease, lack of effective medical technology or inadequate treatment it has been impossible to promptly and successfully eradicate the disease. Tertiary prevention activities involve the case of established disease, with attempts made to restore to highest function, minimize the negative effects of disease, and prevent disease-related complications.

The third level of prevention comprises also two groups of measures: measures for rehabilitation and measures for support and palliative care.

1. Measures for rehabilitation

Rehabilitation means more than just impeding the disease process, because it also presents prevention of complete disability after more or less stabilized condition of anatomic and physiological changes, with the aim of maximal usage of the remaining capacity of such individuals. Thus, the rehabilitation has physical, mental and social components. Rehabilitation could take place during the disease itself or after the cure.

The aim of the rehabilitation is to impede or diminish the sequels, to shorten the disability period, to prevent the invalidity, to prevent premature death and to decrease the health care costs.

Regarding the performer and its aim the rehabilitation could be: medical (physical), psychical, professional and social.

2. Measures for support and palliative care

Measures for support and palliative care are given to individuals where the disease, despite the conveyed treatment and rehabilitation, has left permanent consequences as invalidity and work disability, dependence on other people's help and care of end-of-life stage diseases etc. These measures could be governmental, conveyed by the state (legislative, budget's interventions, etc.), then institutional, conveyed by specialized institutions, familial – by the family, or measures for support given by different voluntary charitable organizations (donations, foundations, sponsorships).

Exercises

Exercise 1.

Consider the following situations.

Ms. Milić is a 72 year-old woman with chronic bronchitis who is former cigarette smoker. Her medications include ipratropium bromide (Atrovent) and albuterol. Her primary prevention needs include:

- A. Reviewing appropriate use of her medications
- B. Receiving an annual influenza immunization
- C. Obtaining spirometry measurement
- D. Periodic sigmoidoscopy
- E. In the example of Ms. Milić correct response is B. Primary prevention measures are those provided to individuals provided to prevent the onset of a target condition. Receiving an annual influenza immunization will prevent M. Milić to develop influenza by inducing production of specific antibodies.

Ms. Danev is a 68 year-old woman with hypertension who resides alone in a private home. Her secondary prevention needs include:

- A. Administration of pneumococcal vaccine
- B. Annual mammography¹
- C. Discussion of home safety to minimize fall risks
- D. Assessment of the presence of S4 heart sound

The correct response in Ms. Danev's scenario is B. Secondary prevention activities are aimed at early disease detection; mammography is an example. Pneumococcal vaccine is an example of primary prevention as is education to minimize falls. The presence of S4 heard sound, indicative of diastolic dysfunction and frequently found in the presence of protracted blood pressure elevation, is part of the ongoing evaluation of the person with established hypertension. The goal of treating a person with hypertension is not only to achieve normotensive status. Rather, tertiary prevention measures for Ms. Danev include avoiding or minimizing damage in the target organs of hypertensive; brain, eye, cardiovascular system and kidney.

When primary prevention techniques are totally effective, there is no need to consider secondary prevention; likewise, when secondary prevention techniques are totally effective, tertiary prevention is unnecessary.

Exercise 2:

The top 20 list of preventive health measures by Frank Greve:

The top rank goes to taking aspirin daily to prevent heart attacks and strokes in men over 40 and women over 50, according to a study reported Wednesday on the Web site of an alliance of health insurers, state health departments, academics, and trade groups.

Immunizing children and discouraging people from smoking follow closely behind, the Washington-based Partnership for Prevention found. Former Surgeon General David Satcher led the effort, which entailed a review of more than 8,000 preventive-medicine studies. The rankings are intended as a checklist for patients, doctors and insurers.

Analysts quantified the health gains in terms of longer life and better quality of life for each preventive measure. They also compared the cost-effectiveness of each preventive intervention. Finally, they combined the two rankings into one score that measures bang-for-the-buck for the top preventive-care options.

To read the study, which ranks 25 preventive measures, and to learn more about prevention-based strategies to improve US health, go to www.prevent.org/content/view/46/96/.

Below are the top 20 preventive measures in rank order. Mark primary preventive measures wit «A», secondary preventive measures wit «B»,and terciary preventive measures wit «C»,.

¹ John Last is a legendary figure in the area of prevention, known by many people as the “father of prevention” John Last has held academic positions with the British Medical Research Council in London, at the Universities of Sydney, Vermont (USA), and Edinburgh and has been professor of epidemiology and community medicine at the University of Ottawa since 1969. He was the editor of the 11th 12th and 13th editions of *Public Health and Preventive Medicine* and editor emeritus of the 14th edition (“Maxcy-Rosenau-Last”); editor of the 1st, 2nd , 3rd and 4th editions of the *Dictionary of Epidemiology*, and author of the 1st and 2nd editions of *Public Health and Human Ecology*.

1. Daily aspirin to prevent heart attacks and stroke in men over 40 and women over 50.
2. Childhood immunizations for diphtheria, tetanus, whooping cough, measles, mumps, rubella, polio, hepatitis B, etc.
3. Tobacco-use screening and brief counseling by doctors.
4. Routine colorectal-cancer screening for adults 50 and older by any recognized method.
5. Hypertension screening via routine blood-pressure tests and medication if necessary.
6. Annual flu shots for adults 50 and older.
7. Immunization of adults 65 and older against bacteria that cause pneumonia and related diseases.
8. Screening and brief counseling of problem drinkers by their physicians.
9. Vision screening for adults 65 and older.
10. Cervical cancer screening for sexually active women and women over 21.
11. Cholesterol screening for men 35 and older and women 45 and older.
12. Routine breast-cancer screening for women 50 and older and discussion with women ages 40 to 49 to set an age to begin screening.
13. Routine chlamydia screening for sexually active women under 25.
14. Calcium-supplement counseling for adolescent girls and women.
15. Vision screening for children under 5.
16. Routine counsel for women of childbearing age on the use of folic acid supplements to prevent birth defects.
17. Obesity screening for adults and high-intensity diet and exercise counseling for the obese.
18. Depression screening for adults.
19. Hearing-impairment screening for adults 65 and over.
20. Promotion of child-safety measures such as car seats, pool fences, bicycle helmets, poison control, and curbs on scalding-water burns.

Exact answers:

- | | |
|-------|--------|
| 1.- A | 8.- B |
| 2.- A | 9.- B |
| 3.- B | 10.- B |
| 4.- B | 11.-B |
| 5.- B | 12.- B |
| 6.- A | 13.- B |
| 7.- A | 14.- A |

- 15.- B
16.- A
17.- B
18.- B
19.- B
20.- A

References

1. Donev D. Contemporary Concept and Definition of the Health Care [In Macedonian]. In: Nikodijevic B, Editor: "Contemporary Diagnostic and Therapy in Medicine", Faculty of Medicine in Skopje, 2000:13-9
2. Donev D, et all. Glossary of Social Protection Terms. European Commission PHARE Consensus Programme 2000:537pg.
3. Last JM. A dictionary of epidemiology. Oxford, Oxford University Press; 2001.
4. The World Bank Group. Life Expectancy in different countries. Washington, DC: The World Bank Group, 2001.
5. USPSTF. The Guide to Clinical Preventive Services. Rockville: Agency for Healthcare Research and Quality, 2006. Available from: <http://www.ahrq.gov/clinic/uspstfix.htm> (Accessed: August 18, 2007).

Recommended reading

1. USPSTF. The Guide to Clinical Preventive Services. Rockville: Agency for Healthcare Research and Quality, 2006. Available from: <http://www.ahrq.gov/clinic/uspstfix.htm> (Accessed: August 18, 2007).