HEALTH PROMOTION AND DISEASE PREVENTION **A Handbook for Teachers, Researchers, Health Professionals and Decision Makers**	
Title	**An Alternative View of Health Promotion and Disease Prevention in Eldercare**
Module: 5.11	**ECTS: 1**
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Key words	Public health, eldercare, health promotion, disease prevention
Learning objectives	After completing this module students and public health professionals should: • contrast traditional health promotion and disease prevention activities for older adults with a concentric model of interaction and interdependence between the individual, their community, and the society in which they live; • cite four areas in which the older adult directly impacts health promotion and disease prevention; • describe the importance of access to care and social connectivity in health promotion and disease prevention in the elderly; • increase knowledge of the value of selected immunizations in eldercare; • understand the importance of Hospice and Palliative Medicine in promoting a culture of caring and respect at the end of life; and • recognise the importance of public health and a chronic care model of care to the successful implementation of health promotion and disease prevention activities in eldercare.

Abstract	Eldercare is a specific component of the health care life cycle. As our societies age, there is a growing recognition of the value and importance of providing quality care for our older adults. Traditional approaches to health promotion and disease prevention focus on lifestyle change, screening tests, and immunizations. This paper highlights the interconnectivity of three areas: the individual, the community, and society, to facilitate effective health promotion and disease prevention in eldercare. While health promotion and disease prevention is a public health construct, interacting areas of the lives of older adults influence the success or failure of these programs. Each area can promote quality health care or become a barrier to effective disease prevention strategies.
Teaching methods	Teaching methods: *Lecture 1:* Health Promotion/Disease Prevention in Eldercare – The Essence of Public Health. *Lecture 2:* Evidence-based data on the benefits of selected immunizations in eldercare. *Lecture 3:* Disease-specific recommendations for prevention and control of diabetes mellitus, hypertension, hypercholesterolemia, and colon cancer. *Exercise 1:* Students will select one of the following topics (diabetes mellitus type II, hypertension, colon cancer or hypercholesterolemia) and develop a practical program for patient self-education to assist an older adult on how to better control or avoid certain health problem. *Small group discussion:* The role of hospice and palliative care in promoting quality of life at the end of life. *Exercise 2:* Students will identify practitioners and/or a care centre where hospice and/or palliative medicine are practiced. *Practicum:* Students will visit a local or regional hospice centre for the purpose of understanding the relationship of patient and families to the care program. Students will interview staff to better understand each staff member's role and attitude toward the residents with whom they work. Students will accompany an appropriate staff member during their daily rounds in the facility.
Specific recommendations for teachers	*Question and answer session to follow each lecture.* A question and answer session will follow each lecture to help students' clarify key aspects of each topic. *Lecture 1:* Provides an overview of how health promotion and disease prevention in eldercare directly relate to the practices and principles of public health. Audiovisual equipment useful. Summary handout to students in attendance based on this paper. *Lecture 2:* Focuses on the role of immunizations in eldercare and their impact on morbidity and mortality. Audiovisual equipment useful. Summary handout to students in attendance based on this paper.

	Lecture 3: Summarizes selected disease specific recommendations to promote health and prevent disease in older adults. Cite specific screening tests, timeframes and management goals. Highlight evidence-based recommendations related to diet, exercise, and medical therapy. *Exercise #1:* Regarding diabetes, hypercholesterolemia, or hypertension, students should identify dietary and exercise lifestyle changes that affect disease onset and control. They should note disease specific tests, screening timeframes and management goals. They should also cite steps to promote medication adherence. Regarding colon cancer, they should identify dietary and screening recommendations. Exercise #2: Faculty should identify programs and individuals engaged in hospice and/or palliative care within the community or region. They should have a working knowledge of what types of services are provided. *Small group discussion:* Mandatory participation. Interactive session. It is expected that students will have read the reference material pertaining to this topic prior to the session. *Practicum:* Mandatory participation. Faculty will identify one or more centres or individuals providing hospice and/or palliative care that will allow student visitations. They will arrange for specific health professionals to work with students to achieve the programmatic goals.
Assessment of students	*Pre/Post tests in association with each lecture* Each student will complete a ten question pre-lecture test. This test will be repeated after the lecture is completed. Each post-test represent 10% of a student's grade. *Small group discussion:* Mandatory participation. The small group discussion represents 20% of the student's grade. *Practicum:* Mandatory participation. Synthesizing the material presented in class, the assigned readings, and their practicum experience, students will write a two-page paper describing how end of life care relates to health promotion and disease prevention. The summary paper represents 50% of a student's grade.

AN ALTRNATIVE VIEW OF HEALTH PROMOTION AND DISEASE PREVENTION IN ELDERCARE

Peter A. DeGolia

As our societies age, there is a growing recognition of the value and importance of providing quality care for our older adults. People do not become "seniors" in a void; they evolve into their elder years over time bringing with them an accumulation of physical and mental conditions that represent unique challenges for the health care provider. Older adults are more diverse and complex individuals than younger cohorts. The aim of this paper is to highlight the interconnectivity of three areas: the individual, the community, and society, and to discuss their impact on health promotion and disease prevention in older adults.

Aging Societies

The term *elderly* is applied to persons 65 years of age or older. This definition does not showcase the variation that exists in the rate of aging or the incidence of chronic age-related disease within this population. The prevention of disease and disability, as well as the optimization of a person's quality of life are the primary goals of patient care with this age group. The objectives of this care change and are influenced by a person's functional status, level of disability, additional years of life expectancy, and the presence of fatal diseases. Goals and objectives of care change as a person ages. A person who is considered *young-old* (65 years to 74) may have goals of care similar to middle aged adults. For example, with a life expectancy of more than 10 years, primary preventive care that sought to prevent the onset of disease, screen for common diseases, and treat early disease would be appropriate. Dietary counseling to prevent diabetes and heart disease would fall into this category. A screening mammogram to identify breast cancer also would be appropriate. The *old-old* (75 years to 84) are more likely to be influenced by the presence of chronic and disabling diseases, such as heart failure or Alzheimer's disease. Issues pertaining to quality of life become a more prominent feature. Functional status and steps to prevent disability are prominent goals of care for this group. The *very-old* (85 years and greater) are likely to pursue a more cautious approach to therapeutic interventions. Weighing benefits and consequences such as discomfort or harm during diagnostic or therapeutic interventions is paramount. Dialysis in a person with advanced Alzheimer's disease with less than two years survival may not be appropriate.

As a population ages, the focus of care shifts from management of acute illness to chronic diseases such as functional disabilities, diabetes, hypertension, urinary incontinence, heart failure, and impaired cognition. Societies across the world are aging. Even in developing countries the number of older adults is growing at a rapid pace. The current level and pace of people aging varies widely by geographic region, and usually within regions. However, virtually all nations are now experiencing growth in their number of elderly adults. Europe is still the "oldest" region of the world. International comparison data supplied by the U.S. Census Bureau highlights the world's 25 oldest countries (percent of population 65 years and over). In 2000, three South Eastern European countries were ranked #7 (Bulgaria at 16.5%), #15 (Croatia at 15%), and #19 (Serbia at 14.8%). Bulgaria will more than double its "aging index" – people aged 65 years and over per 100 people aged 0-14 – from 13.3% in 2000 to 27.8% in 2030. (1)

As with other developed countries, southeastern Europe is experiencing a change from conditions of high fertility and high mortality to low fertility and low mortality. The

consequence of this change is an aging population. This process is known as "demographic transition." Summary demographic data as recent as August 24, 2006, describes these changes as they apply to each country in South Eastern Europe. In every country, the rate of birth is expected to decline from 2005 to 2025, while the young-old, old-old, and very-old age cohorts increase substantially. (2)

"Epidemiologic transition" is another process taking place in these countries. It describes the long-term change in leading causes of death from infectious and acute diseases to chronic and degenerative diseases. As children survive childhood infections and acute illness such as infectious diarrhea and dehydration that once caused death, they are increasingly exposed to risk factors associated with chronic disease and accidents. In 1996, Kalache noted that as fertility declines and the population ages, the preeminent causes of death shift from those associated with childhood mortality to those associated with older age. Frenk showed in 1989 that the increase in older adults shifts morbidity profiles of a given country from acute disease to chronic and degenerative diseases (1). A review of cause-specific mortality explains this development. This data shows that cardiovascular diseases are the primary cause of death among the men and women of South Eastern Europe. In Bulgaria, for example, over two-thirds of all deaths in the elderly are due to cardiovascular diseases. The older the age cohort, the more pronounced the finding. Malignant neoplasm is a distant second. Life expectancy is expected to increase on an average of 4 years between 2005 and 2025 (2).

As life expectancy increases, the quality of a longer life becomes a central issue for both personal and social well-being. How are we spending our additional years of life? The answer to the question of whether people are living healthier lives or spending an increasing portion of those years with disabilities, mental disorders or ill health will have a profound impact on national health, retirement, family systems, and the demand for long-term care services. Healthy life expectancy will become an important marker of a society's well being as the life expectancy is today.

Traditional Health Promotion / Disease Prevention in Older Adults

Health promotion in the United States has been narrowly focused on advocating for lifestyle changes that enable a person to achieve a more optimal state of health. The World Health Organization defines health promotion more broadly as a process of enabling people to increase control over, and to improve, their health. The Ottawa Charter for Health Promotion defines basic principles of health promotion (3), (See appendix).

Disease prevention attempts to prevent and control acute (often infectious) disease, but is primarily focused on chronic disease. Heart disease such as hypertension or heart failure, cancer, and diabetes are common examples. In the US, these diseases account for 7 of every 10 deaths and affect the quality of life of 90 million Americans. Chronic diseases are among the most common and costly health problems, yet most preventable. Eating nutritious foods, being physically active, and avoiding tobacco use can prevent or control the devastating effects of these diseases (4).

Preventive services are applicable to older adults. Even the very-old can benefit from certain specific interventions. Preventive interventions are classified as primary, secondary and tertiary. Primary prevention refers to the prevention of disease, such as when an influenza vaccine is given to a frail elder. Early detection of asymptomatic disease, such as screening for colon cancer through the use of hemoccult cards, represents secondary prevention. Tertiary prevention is activity that optimizes health once a disease process is

detected. Surgical removal of a focal breast tumor that has not metastasized is an example of this type of prevention.

An Alternative View: Interactive and Interdependent Systems of Care for Older Adults

Following the usual application of preventive services is problematic in the elderly. It is difficult to know which preventive services will benefit which subset of older adults since many studies evaluating the benefit of health promotion and disease prevention services exclude people 65 and older. Complicating preventive service intervention are the wide variations in health status of this population, individual and family issues regarding the value of extending life in old age, and the risk-benefit considerations associated with the effect of limited life expectancy. Screening decisions should incorporate the patient's values and preferences. Prevention activities should focus on increasing the percentage of life that is lived in good health rather than prolonging life spent in poor health (5).

An alternative view to health promotion and disease prevention in the older adult is one that recognizes the biological realities of aging. Health and vigor sustained in youth cannot be maintained as we age. Age-determined physiologic declines are unavoidable. Medicine has successfully converted lethal diseases into chronic diseases. These chronic diseases are often associated with considerable frailty or disability. The result is a more diverse geriatric population with greater morbidity. Community and societal interventions play a greater role in health promotion and disease prevention as we age. While counseling patients to avoid behaviors that are known to shorten lives (such as smoking alcohol or drinking excessive amounts of alcohol) is important, activities that minimize harm and maximize benefit to improve quality of life (such as eliminating potentially harmful or inappropriate medications, providing vaccinations to prevent influenza or pneumococcal pneumonia, or emphasizing comfort and the relief of suffering at the end of life) become more important (6).

Figure 1. Interactive and interdependent systems of care for elder adults

The interaction between these three important spheres can be viewed in terms of three concentric circles. In the center is a sphere representing the individual. The axiom "eat right, eat less, and exercise more" typifies the role of health promotion and disease prevention for the individual. These behavioral activities are cost-effective and scientifically proven to

promote health and improve the quality of life (7). Surrounding the individual is a sphere that represents the community in which the older adult lives. The degree of supportive services and access to health care will impact the quality of life. The effective management of chronic diseases requires access to medical services and, at times, home nursing services. Availability of rehabilitation and personal care services can help overcome acquired disabilities and delay functional decline. Society is the third sphere that embraces the other two areas. Social support for specific health promotion and disease prevention activities benefits older adults. Immunizations save lives in older adults. Social campaigns to discourage smoking are effective. Seat belts save lives and campaigns to promote their use are effective. One of medicine's most important missions is to allow terminally ill patients to die with as much dignity, comfort and control as possible. In patients for whom a cure is not possible, there is still an enormous amount of care and support that can and should be provided for patients and their families.

Health Promotion/ Disease Prevention in Older Adults: The Individual

The traditional approach to treatment is to focus on the individual patient, with minimum consideration of the family, community, or society. The individual is important, but not to the exclusion of other factors that impact our lives. Factors affecting health promotion and disease prevention in older adults include the doctor-patient relationship, self-management of chronic diseases, acceptance of responsibility for care, and disease-specific interventions.

Older adults are more likely to suffer from chronic illness and impairment in function, are more likely to take multiple medications, and on average are more likely to die than younger adults. Consequently, health promotion and disease prevention activities are often overlooked, forgotten, or underemphasized in senior care. On the other hand, the overenthusiastic application of health promotion and disease prevention guidelines developed for young or middle-aged adults to frail adults with a limited life expectancy is also inappropriate. The concepts of life expectancy and quality of life are critical for health care providers to consider when discussing health promotion and disease prevention activities with their older patients (8).

The doctor-patient relationship is one of the most unique and privileged relations and its impact on the health and welfare of the patient is not to be underestimated. A physician's knowledge of a person's health status together with their values toward prolongation of life, maintenance of function, and comfort or the relief of pain and suffering can help guide the level of intervention pursued. For example, knowledge of a patient's progressive neurological decline due to Alzheimer's disease, as well as knowledge of the literature indicating placement of artificial feeding tubes does not prolong life in this subset of people, can impact the outcome of a medical intervention that, on the surface, may seem to promote health.

Patient self-management has been shown to be a key component of effective chronic care and improve patient outcomes. Reduction of hospitalizations, emergency department use, and overall managed care costs have been cited. With self-management, the patient takes an active role in monitoring his/her condition and making necessary cognitive, behavioral, and emotional changes to maintain a satisfactory quality of life. The physicians support this process by addressing health literacy issues, understanding problems from the patient's perspective, promoting goal-setting and problem-solving strategies for patients, and making office system changes such as close follow-up to review action plans and goals, as well as group visits emphasizing education (9, 10).

Screening for disease at an early age, counseling about a healthy lifestyle, and chemoprophylaxis are three of five domains recommended for health promotion and disease prevention activities. Individuals can perform disease-specific activities that will delay or prevent acute or chronic diseases and promote successful aging. The United States Preventive Services Task Force (USPSTF) can guide busy clinicians in this regard. The goal of the task force has been to reduce confusion among practitioners pertaining to the effectiveness of preventive medicine interventions. The Task Force website offers complete evaluations and recommendations (11). Blood pressure monitoring is effective for health promotion and disease detection. Screening tests are advised based on the life expectancy of the individual, effectiveness of treatment for early detected disease, and the accuracy of the diagnostic test. Examples of other areas emphasized by the task force include the following activities:

1. Breast cancer screening. Nearly 50% of all breast cancers occur in women over 65 years of age. While studies have shown a reduction of 20% to 35% in mortality for women 50-69 years of age who have had mammograms, no studies have evaluated women older than 75. The USPSTF recommends screening up to age 70 unless co-morbid conditions limit life expectancy making this procedure less beneficial. Other agencies cite life expectancy of at least 10 years. The American Geriatrics Society recommends at least 5 years life expectancy to age 85.
2. Vision and hearing. The USPSTF recommends routine vision screening with a Snellen chart and screening for hearing impairment by history or referral. This recommendation is well accepted by geriatricians.
3. Dementia. The USPSTF recommends evaluation of elders with suspected cognitive impairment based on direct observation (non-adherence to treatment plans of care, confusion or difficulty following instructions) or concerns raised by family members or caregivers.

Mark Twain once stated: "The only way to keep your health is to eat what you don't want, drink what you don't like, and do what you'd rather not" (12). Smoking and excessive alcohol uses are well documented as behaviors that shorten lives. Dietary control for community-dwelling seniors with specific diseases (diabetes or heart failure, for example) can help prevent morbidity and disease progression (13). Physical function declines irreversibly with advancing age, yet aerobic and anaerobic exercises are considered the cornerstones of health promotion in the elderly. The ability to perform this activity is often difficult for many older adults. Falls prevention and safe driving are two other common areas that should be addressed in older adults.

Chemoprophylaxis includes recommending aspirin for people at high risk for coronary heart disease. Physicians must weigh the risk of gastrointestinal hemorrhage or stroke with the benefits of preventing myocardial infarction or ischemia. The use of cholesterol lowering drugs such as statins in primary cardiovascular prevention in the elderly is controversial. The PROSPER study of subjects with a mean age of 75 and a cholesterol of 220 mg/dL treated with a statin medication showed a significant difference in primary outcome (myocardial infarction, stroke, coronary or cardiovascular accident death) but no significant difference in secondary outcomes (cognition, disability, hospitalization, or all-cause mortality). Statins appear to be most effective in patients with cardiovascular disease (14).

Combating non-compliance with medication use and lifestyle changes, as well as systematically reviewing all mediations (prescription, over-the-counter, or herbal) and discarding unnecessary medications are appropriate health promotion / disease prevention

activities with older adults. While encouraging older adults to follow disease-specific guidelines to promote health and prevent disease is important, addressing non-compliance and working with patients to follow through with important lifestyle changes may have the greatest impact. Greater physician mentoring and guidance in order to attain the goal of a healthier and higher quality of life is needed. In the United States, adverse drug events are the fifth most frequent, and the most common preventable, health problem among the elderly in the US. Nearly 28% of hospitalizations of elderly patients are related to medication errors (15). The active review and elimination of unnecessary medications is an important health promotion and disease prevention activity for this population.

Health Promotion/ Disease Prevention in Older Adults: The Community

Chronic disease management requires access to health care services. The lack of transportation is a major public health problem facing the elderly. Often older adults rely on others to provide access to shopping, banking and medical care. Without access to health care, many problems afflicting the elderly go untreated or under treated. Chronic diseases are among the most common and most expensive health care problems, yet most preventable. Patients with chronic diseases have difficulty coping with their disorders, managing their medications properly, adapting their diets, and following other lifestyle changes known to promote good health and prevent a worsening of a disease process. Community support and interventions are often necessary to improve the quality of life in older adults. Programs that provide services to seniors, whether in the home or at community centers, can lessen the burden carried by family members, ensure the delivery of care that may otherwise not be provided, and detect problems early that could spiral into an avoidable hospitalization. Safe and appropriate avoidance of hospitalizations in the elderly should be viewed as an important health promotion/disease prevention activity. The hazards of hospitalization experienced by hospitalized older adults are well documented (16).

Health Promotion/ Disease Prevention in Older Adults: Society

Immunizations and system changes to promote patient safety are the remaining two of five domains recommended in health promotion and disease prevention. Annual influenza vaccination reduces mortality and morbidity in the elderly. Pneumococcal pneumonia vaccination for persons over age 65 has been shown to be effective. These are recommended by the USPSTF. Health care system changes to promote patient safety include standing protocols for influenza and pneumococcal vaccinations, electronic medical records that cross check potentially adverse drug-drug and drug-food interactions, and information technology that facilitates the accurate transfer of clinical information across health care settings. Most recently, the use of telemedicine technology to provide vital signs and patient responses to disease-specific questions transmitted via telephone lines from a person's home to the doctor's office is another example of evolving health promotion and disease prevention activity. In Cleveland, this technology is being used to identify weight changes and early symptom onset of homebound heart failure patients. Early detection results in early intervention to prevent heart failure exacerbation, morbidity and hospitalization.

End of life care is not often considered a health promotion/disease prevention activity. Yet dying is an event we all will face. Dying with dignity, free of pain and suffering, is a basic human right. Health care professionals can help promote a culture of caring by actively controlling end of life symptoms and seeking to relieve pain and suffering. Throughout most

of our life medical decision-making is straightforward. When we become ill, we seek medical advice and treatment. Following the prescribed treatment plan returns us to our previous state of health. However, as our health declines, medical decision-making becomes more complex. Patients with multiple medical problems, who are dependent on others for activities of daily living and personal care, or who have terminal conditions, often face difficult treatment choices. These choices are made difficult because some medical interventions for people with terminal illness or long-term chronic conditions offer little benefit. At the same time these interventions can be harmful, cause pain, or increase the burden of living. Promoting dignity and comfort at the end of life, and preventing interventions that can cause harm require health professionals to discuss treatment options with their patients. Working with patients and families to develop goals of medical care helps promote comfort and dignity at the end of life. Cure, stabilization of functioning, and preparing for a comfortable and dignified death are three medical goals that should be reviewed with patients with terminal disease or chronic co-morbid conditions (17).

Conclusion

Health promotion and disease prevention in older adults is complex, but effective. There is an interconnected relationship between the individual, their community, and the society in which they live that profoundly influences quality of life and successful aging. The partnership between patients and their primary health professionals is the foundation of successful health promotion/disease prevention activity. Physicians, through the therapeutic doctor-patient relationship, can strongly motivate patients to adhere to healthful lifestyles, accept recommendations and actively participate in the management of their chronic diseases. The USPSTF serves as a resource for practitioners, offering sound, evidenced-based recommendations for guiding patient care. Concepts such as life expectancy and quality of life guide health care professionals in their discussions with patients and families. Medication management, proactive telemedicine monitoring, and promoting a culture of caring at the end of life constitute new health promotion and disease prevention activities in this age group.

APPENDIX A

Basic principles of health promotion as outlined by The Ottawa Charter for Health:

Prerequisites for health: The fundamental conditions and resources for health are peace, shelter, education, food, income, a stable ecosystem, sustainable resources, social justice and equity. Improvement in health requires a secure foundation in these basic prerequisites.

Advocate: Good health is a major resource for social, economic and personal development and an important dimension of quality of life. Political, economic, social, cultural, environmental, behavioral and biological factors can all favor health or be harmful to it. Health promotion action aims at making these conditions favorable through advocacy for health.

Enable: Health promotion focuses on achieving equity in health. Health promotion action aims at reducing differences in current health status and ensuring equal opportunities and resources to enable all people to achieve their fullest health potential. This includes a secure foundation in a supportive environment, access to information, life skills and opportunities for making healthy choices. People cannot achieve their fullest health potential unless they are able to take control of those things that determine their health. This must apply equally to women and men.

Mediate: The prerequisites and prospects for health cannot be ensured by the health sector alone. More importantly, health promotion demands coordinated action by all concerned: by governments, by health and other social and economic sectors, by nongovernmental and voluntary organizations, by local authorities, by industry and by the media. People in all walks of life are involved as individuals, families and communities. Professional and social groups and health personnel have a major responsibility to mediate between differing interests in society for the pursuit of health.

Health promotion strategies and programs should be adapted to the local needs and possibilities of individual countries and regions to take into account differing social, cultural and economic systems.

Health Promotion Action Means: Build healthy public policy Health promotion goes beyond health care. It puts health on the agenda of policy-makers in all sectors and at all levels, directing them to be aware of the health consequences of their decisions and to accept their responsibilities for health.

Health promotion policy combines diverse but complementary approaches including legislation, fiscal measures, taxation and organizational change. It is coordinated action that leads to health, income and social policies that foster greater equity. Joint action contributes to ensuring safer and healthier goods and services, healthier public services, and cleaner, more enjoyable environments.

Health promotion policy requires the identification of obstacles to the adoption of healthy public policies in non-health sectors, and ways of removing them. The aim must be to make the healthier choice the easier choice for policy-makers as well.

Create supportive environments: Our societies are complex and interrelated. Health cannot be separated from other goals. The inextricable links between people and their environment constitute the basis for a socioecological approach to health. The overall guiding principle for the world, nations, regions and communities alike is the need to encourage reciprocal maintenance - to take care of each other, our communities and our natural environment. The conservation of natural resources throughout the world should be emphasized as a global responsibility.

Changing patterns of life, work and leisure have a significant impact on health. Work and leisure should be a source of health for people. The way society organizes work should help create a healthy society. Health promotion generates living and working conditions that are safe, stimulating, satisfying and enjoyable.

Systematic assessment of the health impact of a rapidly changing environment - particularly in areas of technology, work, energy production and urbanization is essential and must be followed by action to ensure positive benefit to the health of the public. The protection of the natural and built environments and the conservation of natural resources must be addressed in any health promotion strategy.

Strengthen community action: Health promotion works through concrete and effective community action in setting priorities, making decisions, planning strategies and implementing them to achieve better health. At the heart of this process is the empowerment of communities, their ownership and control of their own endeavors and destinies.

Community development draws on existing human and material resources in the community to enhance self-help and social support, and to develop flexible systems for strengthening public participation and direction of health matters. This requires full and continuous access to information, learning opportunities for health, as well as funding support.

Develop personal skills: Health promotion supports personal and social development through providing information, education for health and enhancing life skills. By so doing, it increases the options available to people to exercise more control over their own health and over their environments, and to make choices conducive to health.

Enabling people to learn throughout life, to prepare themselves for all of its stages and to cope with chronic illness and injuries is essential. This has to be facilitated in school, home, work and community settings. Action is required through educational, professional, commercial and voluntary bodies, and within the institutions themselves.

Reorient health services: The responsibility for health promotion in health services is shared among individuals, community groups, health professionals, health service institutions and governments. They must work together towards a health care system that contributes to the pursuit of health.

The role of the health sector must move increasingly in a health promotion direction, beyond its responsibility for providing clinical and curative services. Health services need to embrace an expanded mandate that is sensitive and respects cultural needs. This mandate should support the needs of individuals and communities for a healthier life, and open channels between the health sector and broader social, political, economic and physical environmental components.

Reorienting health services also requires stronger attention to health research as well as changes in professional education and training. This must lead to a change of attitude and organization of health services, which refocuses on the total needs of the individual as a whole person.

APPENDIX B

Case Presentation

In 1992, Alexander Bevkoff was a 62 year old general laborer approaching retirement. He had a history of diet controlled hypertension, osteoarthritis of his shoulders and knees, regular alcohol use (a beer after work and 2 glasses of schlivavitz at home), and smoked 2 packs of cigarettes a day (which he had done for 30 years). He walked frequently on his job and often moved heavy supplies. Together with his wife, he lived in a high rise apartment building on the 5th floor. In 1987, his new physician encouraged him to reduce his alcohol consumption and to stop smoking. Mr. Bevkoff did not follow these recommendations. Over the years, he visited his doctor's office every six months for routine examinations.

In 1997, at age 67 years, Mr. Bevkoff retired, became less physically active and began to spend more time at home and in his neighborhood. He reduced his use of tobacco to 1 pack per day but gained 3 kilograms. On routine screening his blood pressure was noted to be elevated, as was his cholesterol. Mr. Bevkoff was instructed to start antihypertensive medication and dietary control for hypercholesterolemia. He did not change his diet and occasionally forgot to take his medication. Over the next several years he visited his physician more frequently with improved control of his blood pressure and cholesterol.

In 2002, at age 72 years, Mr. Bevkoff presented to his doctor's office with bilateral lower extremity edema, increased shortness of breath, and intermittent left anterior chest pressure while climbing two flights of stairs to his apartment, and waking up at night feeling short of breath. In addition, he complained of indigestion and heartburn for which he took an antacid routinely. For the past two months he developed worsening knee pain and began to take a

Non-Steroidal Anti-Inflammatory Drug (NSAID) routinely. His doctor diagnosed him with new onset CHF and admitted him to the local hospital. While there he developed a urinary tract infection from the foley catheter that was inserted into his bladder on admission. One night he fell while trying to get out of bed and injured his shoulder. He was discharged home on the following medications: ACE-Inhibitor, beta-blocker, nitrate, diuretic, low dose aspirin, statin, and proton pump inhibitor. Over the course of the next several years, he continued to gain weight, remained sedentary, and began using NSAID medications intermittently for worsening knee and shoulder pain. Three years ago he developed urinary hesitancy and was started on an alpha-adrenergic antagonist.

In 2007, at age 77, Mr. Bevkoff is having gradual problems with short-term memory and his balance. His gait is unsteady at times and he feels "lightheaded" when he stands up. After a fall one evening while at home he went to the local urgent care and was placed on medication for vertigo. At that time he also complained of insomnia and was instructed to take a tablet of diphenhydramine at bedtime. At the doctor's office today, his wife notes that he is again developing swelling of his lower extremities and she is afraid he is developing heart failure again. She is also concerned about his worsening mental status with periods of acute confusion. She reports he needs increased direction to care for himself.

Case discussion

Does this sound like an unusual situation? In fact it is not. This is a fairly common scenario of a person gradually developing significant ailments that, in time, become severe enough to warrant treatment. It is also common that one treatment intended to "cure" or control the first problem results in a new problem that goes unrecognized as iatrogenic in origin. Consequently a new medication is added to treat the new problem started by the previous medication. In the case presentation above, Mr. Bevkoff was at risk for several significant problems – both immediate and long term. His environment and occupation placed him at risk for severe osteoarthritis. His lifestyle put him at risk for hypertension, coronary artery disease, and cognitive impairment, as well as gastrointestinal and pulmonary diseases. When he began taking NSAID medication to control arthritis pain he precipitated congestive heart failure related to his poorly controlled hypertension. This etiology was not noted and he was not instructed to stop using NSAIDs. This problem reoccurred several years later. During his stay in the hospital he developed iatrogenic problems not uncommon for older adults – a urinary tract infection due to prolonged catheter placement, probable delirium associated with a strange environment and withdrawal from daily alcohol use that also resulted in a fall. He was discharged on multiple medications, yet he was non-adherent with 1 or 2 before his admission. As he aged he developed symptoms of prostate hypertrophy and cognitive impairment. He was placed on medications (alpha adrenergic antagonist and diphenhydramine) that can precipitate delirium and worsen cognition. He continued on a proton pump inhibitor even though there was no indication for continued use. These medications directly reduce vitamin B12 absorption placing Mr. Bevkoff at further risk for cognitive problems. We do not know whether or not he continued to consume alcohol and at what rate. Finally, we are beginning to get a picture of caregiver stress. His wife notes that Mr. Bevkoff is declining in Activities of Daily Living[1], the consequence of which is increased care and direction by her.

1 Activities of Daily Living are learned behaviors we perform in our daily lives. These include ambulation, bed mobility and transfers, toileting, bathing, dressing and grooming.

While we do not know his functional level in Instrumental Activities of Daily Living[2] but can anticipate that these abilities are impaired.

EXERCISE

Task 1.

Based on this case study, develop your own case study that would illustrate the principles cited in this paper.

Recommended readings

1. An Aging World: 2001. Available from: http://www.census.gov/prod/2001pubs/p95-01-1.pdf
2. International Data Base Summary Demographic Data updated August 24, 2006. U.S. Census Bureau. Available from: http://www.census.gov/ipc/www/idbsum.html
3. American Geriatric Society Ethics Committee. Health Screening Decision for Older Adults. Available from: http://www.americangeriatrics.org/products/positionpapers/stopscreening.html
4. Steven Gambert, Series Editor. Clinical Geriatrics. Successful Aging: Health Promotion/Disease Prevention in Older Adults – An Evidence-Based Update Parts I to III. Available from: http://www.clinicalgeriatrics.com/article
5. *Influenza and Pneumococcal vaccination coverage among persons aged > or =65 years and persons aged 18-64 years with diabetes or asthma--United States, 2003.* MMWR Morb Mortal Wkly Rep. 2004 Nov 5; 53(43): 1007-12.
6. Hovell H, Roussos S, Hill L, Johnson NW, Squier C, Gyenes M. Engineering clinician leadership and success in tobacco control: recommendations for policy and practice in Hungary and Central Europe. European Journal of Dental Education 8(4):51-60.
7. Crandall, Cameron S; Olson, Lenora M; Sklar, David P. Mortality Reduction with Air Bag and Seat Belt Use in Head-on Passenger Car Collisions. American Journal of Epidemiology. February 1, 2001;153(3): 219-24.
8. Dunn H. *Hard Choices for Loving People. CPR, Artificial Feeding, Comfort Care and the Patient with a Life-threatening Illness.* A & A Publishers, Inc. June 2002. 4th edition.

References

1. An Aging World: 2001. Available from: http://www.census.gov/prod/2001pubs/p95-01-1.pdf.
2. U.S. Census Bureau. International Data Base Summary Demographic Data updated August 24, 2006. Available from: http://www.census.gov/ipc/www/idbsum.html (Accessed April 15, 2007).
3. Title of the referen. Available from: http://www.euro.who.int/AboutWHO/Policy/20010827_2 (Accessed: April 21, 2007).
4. Title of the reference. Available from: http://www.cdc.gov (Accessed: April 21, 2007)
5. Walter LC, Covinsky KE: Cancer screening in elderly patients: A framework for individualized decision making. JAMA 2001; 285:2750 [PMID: 11386931]
6. Nakasato YR, Carnes, BA. Promoting successful aging in primary care settings. Geriatrics, April 1, 2006.
7. Healthy People 2010. Nchs page. Available from: www.cdc.gov/nchs/hphome.htm (Accessed: April 22, 2007).
8. Richardson, JP. Considerations for health promotion and disease prevention in older adults. Medscape Public Health and Prevention 2006; 4(1).
9. Lorig KR, Sobel DS, Ritter PL, Laurent D, Hobbs M. Effect of a self-management program on patients with chronic diseases. Eff Clin Pract. 2001 Nov-Dec; 4(6): 256-62.
10. Coleman MT, Newton KS. Supporting self-management in patients with chronic illness. AFP, October 15, 2005;72(8).
11. Website of Unites States Preventive Services Task Force. Available from: www.preventiveservices.ahrq.gov (Accessed: April 19, 2007).
12. Mark Twain, 19th Century American Novelist and Social Commentator. Twain, M. Pudd'nhead Wilson's new calendar. In Following the Equator, vol. II. New York, NY. Harper and Brothers, 1907:137.

2 Instrumental Activities of Daily Living are tasks we perform routinely and require executive function skills derived directed through the frontal lobe of our brain. These include the ability to manage finances, grocery shop, and clean house, use the telephone, and perform yard work.

13. Paul K. Whelton, MD, MSc; Lawrence J. Appel, MD, MPH; Mark A. Espeland, PhD; William B. Applegate, MD; Walter H. Ettinger, Jr, MD; John B. Kostis, MD; Shiriki Kumanyika, PhD; Clifton R. Lacy, MD; Karen C. Johnson, MD, MPH; Steven Folmar, PhD; Jeffrey A. Cutler, MD, MPH; for the TONE Collaborative Research Group. Sodium Reduction and Weight Loss in the Treatment of Hypertension in Older Persons, A Randomized Controlled Trial of Nonpharmacologic Interventions in the Elderly (TONE). JAMA, 1998; 279:839-46.
14. Fields S and Nicastri C. Health Promotion/Disase Prevention in Older Adults – An Evidence-Based Update Part II: Counseling, Chemoprophylaxis, and Immunizations. Clinical Geriatrics. Dec. 2004;12(12):18-26.
15. Zagaria, MA. Pharmaceutical care of the older patient. US Pharmacist 2000; 2:94-5.
16. Morton C. Creditor. Hazards of Hospitalization of the Elderly. Feb 1, 1993;118(3):219-23
17. Dunn H. *Hard Choices for Loving People. CPR, Artificial Feeding, Comfort Care and the Patient with a Life-threatening Illness.* A & A Publishers, Inc. June 2002. 4th edition.