Alleviating the burden of chronic illness

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Introduction

The demands made on the health systems of the world are insatiable. In the United States, health care expenditures are projected to reach 18% of the gross national product (GNP) by the year 2000, an unsustainable level. In the less wealthy Pacific islands, an increased demand for medical services is occurring simultaneously with a period of economic decline and reduced support by international donors. Unable to meet the demands for curative services, many health and finance ministries have felt compelled to reduce expenditures on preventative care. This penny wise, but pound (or dollar) foolish stratagem is doomed to failure for there is little hope of curing all the illness in the world, but there is the possibility of promoting a healthy lifestyle and preventing or delaying illness until later in life. With limited financial resources available to health departments, the most productive expenditures are allocations devoted to protecting health, and not those dedicated to treating already established disease.

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It is estimated that 70% of premature death is preventable. Just as poliomyelitis has been eradicated by vaccination and the malaria prevalence decreased by treated bed nets, so can the prevalence of lifestyle diseases (atherosclerosis, chronic lung disease, and AIDS) be reduced through the adoption of healthy practices. As the Pacific islands move out of an era of high mortality due to infectious diseases and into the realm of morbidity and mortality from chronic illness, it is imperative that their health care systems change their paradigm from curative treatment to preventative care and health promotion. If the health systems, and the people they serve, do not adopt new practices, then the present health delivery organization will be overwhelmed by insatiable demands.

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What are the skills and the knowledge base necessary for health workers to lead their nations into this new world of the primary prevention of chronic health problems? What do Pacific health workers need to know and advise regarding health screening? Can we afford to effectively prevent diseases? How can people change to healthy lifestyles? This article will provide an introduction to these issues and is intended to motivate Pacific action.

Screening for disease

Health workers are familiar with the concept of screening to detect potential problems or actual illness. Maternal child health clinic nurses can monitor pregnant women to identify high-risk situations, such as twins or fetal malpresentation, and to encourage healthy behaviour through an appropriate diet and lifestyle. Nutrition can also be monitored during infant weighing at immunization clinics. If one is willing to forego the expense, patients can be screened for any number of diseases from cervical cancer and breast cancer, to Down syndrome (prenatal maternal blood tests coupled with amniocentesis) and prostate cancer (prostatic specific antigen). In the report of the United States Clinical Preventative Services Task Force Guide to Clinical Preventive Services,[1] 169 screening questions and examinations are reviewed and specific recommendations are offered for American physicians. The Canadian Guide to Clinical Preventative Health Care[2] provides more recent and more conservative advice.

What should be the response to the above recommendations in Pacific countries? The tests listed in these reports are neither affordable nor necessarily applicable to different populations. Each health care provider and department will need to decide the most appropriate cost-effective approach that meets their client's and nation's specific needs. A decision to offer a screening test depends on three questions:

1. Is the disease to be detected by the proposed test treatable, or can transmission be prevented? It makes no sense to look for a problem that cannot be alleviated or at least modified.

2 Is the disease common? Searching for a rare disease is expensive and a waste of resources, thus screening for sickle cell disease in Pacific islanders is inappropriate, although it may be appropriate in West Africa where this hereditary haemoglobinopathy is prevalent.

3. Is the disease serious? AIDS is a deadly infection. If it is common, screening of blood donors may be indicated to protect transfusion recipients, from HIV infections..

Before embarking on a screening program, it is important to consider these questions and the arguments for and against screening for a disease in a specific population Above all, a screening program must be cost effective in order for it to be practical in a country with limited resources In general, screening examinations that require expensive or sophisticated equipment (mammograms) or diseases that require overseas referral for more definitive evaluation or treatment (PSA for prostate cancer) require careful consideration of appropriateness and cost-effectiveness prior to their general introduction.

Keeping these caveats in mind, there are a number of simple and low-cost screening tests that are appropriate for many Pacific islands. Hypertension is prevalent and blood pressure determination is inexpensive and reasonably sensitive. Screening for cervical cancer is relatively inexpensive although a single Pap smear is only 50-90% sensitive (correctly identifies cancer when it is actually present). The test is specific (there is a 90-95% chance that when a Pap smear is reported as cancer it is really cancer)[3]. In many women, there is a gradual progression over a number of years from mildly atypical cervical cells to invasive cancer. This allows time for local intervention and avoids costly overseas referrals for advanced disease

Employed in selected populations with a high prevalence of disease, screening can save lives and money, although screening can never be enough on its own. Besides detecting illness, there is a need to prevent its occurrence.

Disease prevention

The prevention of disease can be either primary, secondary, or tertiary. An example of primary prevention is immunization against measles. Secondary prevention stops the development of complications in people who have the disease. An example of this is removing or treating cervical cancer detected by a Pap smear before it becomes *invasive*. Tertiary prevention concerns limiting the effects of established disease. An example of the latter would be the use of laser therapy to prevent blindness in a person who has diabetic retinopathy.

Primary prevention practices that are familiar and effective include: immunizations, dietary advice to increase vitamin A consumption to prevent night blindness, and programs to prevent or decrease the prevalence of adult obesity and associated diseases: eg. hypertension and diabetes. Equally important is advice not to begin cigarette smoking (primary prevention) or to stop smoking before serious consequences result (secondary prevention). Cigarette smoking is the most common cause of preventable death in the United States[4] and is increasing throughout the Pacific. The primary care providers must attempt to persuade every smoker to quit smoking at each encounter. Fiore et al[5] have suggested that the status of tobacco use be considered a 'vital sign' to be recorded at every visit to a health provider. Prevention of tobacco use through individual efforts and public advocacy (curtailment of cigarette advertising, introduction and enforcement of legislation to limit a minor's access to tobacco products, and taxation) are the responsibility of all health workers. The limitation of tobacco abuse in the Pacific may well be the most important health prevention priority facing health workers today.

Other important health problems that demand urgent attention include increasing seat belt use, reducing alcohol abuse, preventing spousal and child abuse, and improving access to prenatal and family planning services. Primary prevention efforts can be effective in preventing morbidity and mortality from motor vehicle accidents, alcoholism, domestic violence, and unplanned pregnancies

Secondary prevention of diabetic retinopathy through the early diagnosis and aggressive treatment of diabetes and the reduction in the incidence of ischemic heart disease through the pharmacological treatment of hypertension have been shown to be effective. Patient motivation and compliance with therapy are essential for successful secondary prevention. Health care providers need to be more than astute diagnosticians in order to reduce the morbidity form chronic disease; they require skills in motivating their patients to follow recommended therapy and change their lifestyles. For secondary prevention in practice demands a partnership between provider and patient. Neither can be successful alone.

Health promotion and protection

Marc Lalonde[6] identified four elements directly related to causes of morbidity and mortality. This Health Field Concept is applicable to Pacific populations as it is to North Americans although the proportions attributable to each element may vary. Illness can be ascribed to:

Unhealthy behaviour or lifestyle	*50%*
Human biological factors	*20%*
Environmental factors	*20%*
Inadequacies in the health care system	*10%*

Thus a death from renal failure secondary to adult onset diabetes mellitus in a 45 year old Pacific male may be due

to unhealthy behaviours (poor diet, lack of exercise, etc.), human biological factors (presence of the 'thrifty gene' in Pacific Islanders[7]), and environmental factors (inexpensive Western foods and abandonment of traditional farming land and practices), with only a small component secondary to inadequacies in the health care system (physicians unskilled in bringing about lifestyle changes, lack of funding for dialysis, or access to renal transplant). Despite the physician's best clinical efforts, this man's premature death was largely attributed to his risky lifestyle.

It should be apparent that the availability of expert medical knowledge, skills, and medications are insufficient to improve the health of Pacific nations. Health providers need to strive to bring about lifestyle and environmental changes within Pacific societies. If we are to succeed, we need to encourage people to enjoy living, not how to avoid dying[8]. The Alameda County Study[9] identified seven health practices related to morbidity and mortality: regular physical activity, no tobacco use, nil or moderate alcohol consumption, maintenance of an ideal weight, adequate sleep, eating breakfast, and eating three meals a day with no snacks. A 45 year old man who followed these practices could expect to live 11 years longer than a man who followed only one or two practices. For a woman the difference in life expectancy would be seven years.

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The chronic diseases prevented or delayed by these healthy practices are diabetes, atherosclerosis, lung and liver cancers, emphysema, and obesity. These Western diseases are now spreading worldwide driven by an increase in disposable income, abandonment of traditional healthier lifestyles, and advertising and marketing of unhealthy activities.

It is the duty of all health workers to bring about positive lifestyle changes in their patients just as it is the responsibility of the ministry of health to protect the health of the nation. If we hope to ameliorate the burden of chronic disease, we must implement new strategies to initiate and maintain behavioural changes. In order to positively impact patient lifestyles, most health workers require the acquisition of new skills in health education, social marketing, media advocacy, and community and political mobilization.

As noted earlier in this paper, traditional clinical services are less important in improving a patient's health than targeted education directed toward the promotion of a healthy lifestyle as well as the early detection of disease. Our role as providers is to encourage movement away from high-risk behaviours. Every opportunity during every patient encounter should include counselling for health improvement[10].

Changing behaviour is seldom easy. This is intuitively obvious to any of us who have tried to lose weight or persuade a smoker to quit. It is helpful to consider the adoption of a new behaviour or the giving up of an unhealthy one as the movement through a continuum of steps. Once we understand this process that leads to self-protective behaviours, we can begin to motivate people to change.

A number of people are unaware that aspects of their lifestyle are dangerous, or they may be vaguely aware of the risk but never really considered it in the context of their activity (precomtemplation stage)[11]. The health worker's task is to inform them and encourage change. "Didn't you know that cigarette smoking is bad for you? You need to quit." Surprisingly, only 60% of American smokers have ever heard that message from their physician[12]. Although this paternalistic method is not very effective on its own (less than 5% successful), it is a crucially important beginning on the road to change.

Once the individual has learned of the risk, the next step is their acknowledgement of personal susceptibility to the consequences of the action[14]. "I might catch AIDS from unprotected sex." This realization may arise from experience, mass media information, physician anticipatory guidance, or through peers. Convincing people about significant risk is difficult. The optimistic bias[15] (it can't happen to me) is pervasive, especially among teenagers. Often a creditable health worker or peer counsellor can assist a person in their analysis of the risk.

Occasionally, a teaching moment presents itself such as a smoker with pneumonia or an auto accident victim who was not wearing a seat belt. An unjudgmental personalized risk message can be a very powerful agent in these settings.

When a person has decided to make a lifestyle change, it is our task to assist them in understanding their behaviour and actuating the desired modification. Green[16] suggested that behaviour choices are based on predisposing, enabling, and reinforcing factors. Predisposing factors include knowledge about the risk factor; attitudes toward the behaviour; personal, family, and cultural values; and their perceived needs. Each of these areas should be considered in context of the patient's sense of self-efficacy. Enabling factors include the patient's skills and resources necessary to make the change (does the teenager know how to properly use a condom and are condoms readily available?). Social support, physician approval, and rewards are reinforcing factors for change. "I'll put the money I save from not smoking away to purchase a new boat", is an example of a reward. The patient must believe that the change is

effective and that the costs are worth the effort and expense. Social support is critical. Once a change is accepted and adopted, there is a need to maintain the healthy lifestyle. Actions that can be taken to avoid relapse include:

- Avoidance of high-risk situations;
- Contracts between physicians and patients pledging abstinence;
- anticipation of antecedents to relapse; and
- self and outside monitoring.

By learning and using these steps to bring about behaviour change, we can assist people in adopting a healthy lifestyle.

Individual patient counselling can be successful and rewarding, but it will remain inadequate in itself in changing the health of nations. We do not have enough time and resources to support everyone in a behaviour change program. It is inefficient to promote health individually when we can protect the health of a society as a wholesale effort through legislative mandates, persuasive marketing of healthy activities, and media advocacy for healthy and against unhealthy lifestyles.

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The control of the access to tobacco products through legislation, setting a minimum age for purchase, increased cost through taxation, or limits on advertising has proven effective in decreasing the amount of smoking in a society. When legislative actions are coupled with marketing of health activities, such as youth sports and positive role models of non-smoking athletes, the message begins to take hold throughout a nation. We all have the responsibility to persuade our legislators and lead our health departments in bringing about social changes supporting positive lifestyles.

Conclusion

The Pacific islanders are rapidly undergoing change in their societies, economics, morbidity and mortality patterns. In many cases the most economically advantaged are becoming the most health disadvantaged because of the rise in chronic diseases secondary to the adoption of unhealthy lifestyles. Most of these diseases can be controlled through inexpensive methods: health screening, disease prevention, and health protection. Health care providers and the people they serve need to shift the paradigm of health care away from the treatment of disease and toward the promotion of health. We can afford nothing less.

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