Health of the Elderly

J. Fung, S. Maggi, & K. Steel

For the good health of senior citizens...

Guidelines are needed which will lead to policies on the prevention of illness in the elderly and lay the foundations of cost-effective primary health care designed specifically for this section of the population.

In most countries the problem of rising health service costs is compounded by the need to provide care for increasing numbers of elderly people. In Japan and the USA the percentage of elderly people is likely to double in just over 30 years; during the same period the proportion of older people in China is expected to increase three-fold (1, 2). Most developing and developed countries will need to give high priority to the planning of health and social services for the elderly in order to maximize the availability of these services to those who need them and minimize the associated economic burden.

All the elements of primary health care, as laid down at Alma-Ata (3), are needed by older people. However, a system should be designed specifically for their requirements, addressing the chronic illnesses of old age and certain acute conditions. WHO's Health of the Elderly Programme focuses on health promotion and disease prevention because these two elements are likely to be especially cost-effective and should take some of the pressure off primary care facilities. As health authorities consider how best to provide for aging populations they should have the opportunity to use guidelines on the prevention of illness to underpin their primary care delivery systems.

Cost-effective strategies for the prevention of illness

If the costs associated with disease are taken into account it is clear that intervention for the prevention of illness can save money. Cost-effective preventive measures are the
most likely to yield the best health outcomes at the lowest cost. The costs of implementing preventive measures should be assessed in relation to those of the manpower and the technological and socioeconomic resources which would otherwise be required.

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Preventive measures have usually been considered of importance primarily in the young, but there is increasing evidence to suggest that prevention and health promotion are beneficial to older people as well (4). In particular, preventive measures directed at people subject to certain risk factors can be expected to delay the onset of disease or reduce the disability associated with it.

Establishing guidelines

Once the main diseases and conditions responsible for mortality and morbidity among elderly people have been determined, preventive measures can be adopted. Data concerning the illnesses with the most harmful effects on the functional status of older people should also be examined. For example, osteoporosis might be included because of the morbidity it causes. It may also contribute significantly to mortality among older people, yet this may not be apparent by simply reviewing statistical information. Elderly women may become physically inactive due to osteoporosis and may subsequently develop pneumonia and die; in this way the former disease leads to increased mortality. If is also worth noting that estimates of morbidity and functional status can serve to indicate the quality of life.

The next stage is to analyse the degree to which a disease or condition is preventable. Risk factors may operate at the macro-level, as with smoking, poverty and societal effects on family support structures. Micro-level risk factors may relate to blood pressure, calcium intake, estrogen levels, especially in women, and so on. In order to assess the preventability of a disease it is first necessary to determine the associated risk factors. This information may allow controlled double-blind studies to be conducted so that preventable risk factors can be identified. Of course, it may prove impossible to do this for financial, cultural or technical reasons. In this event an analysis of the best available data can form the basis for recommendations on the strengths of an intervention. Follow-up studies, whether or not an intervention is initiated, are likely to improve the quality of the data. Furthermore, when dealing with risk factors operating at the macro-level it is not possible to conduct controlled double-blind clinical trials. For risk factors such as societal influences it is necessary to use population studies in order to obtain guidance as to the proper approach. Well-controlled, selected groups often do not indicate the effectiveness that can be achieved in larger populations (5). In population studies there is no special selection of subjects, nor are there special measures ensuring that preventive action has proper application and compliance. Thus in addition to controlled double-blind studies that measure effectiveness under the most favourable conditions, further investigation is necessary under specific conditions of population.
In the third stage the cost-effectiveness of preventive methods should be evaluated. They can be categorized as primordial, primary, secondary and tertiary. The primordial category, concerned with preventing the emergence of risk factors, is especially pertinent in developing countries. For example, it covers methods designed to discourage people from starting to smoke or to consume foods containing high levels of cholesterol, notably in countries where such habits have not yet become established. Where smoking and high fat intake are already present as risk factors, primary prevention comes to the fore in attempts to combat them and reduce the incidence of disease. Secondary prevention is intended to stop diseases from recurring and progressing (6), while tertiary preventive measures comprise clinical intervention (7). In all four categories of preventive strategy the measures that are appropriate and judged to be effective by scientific evidence should be evaluated for their cost-effectiveness in elderly people.

Of course, the elderly themselves can take action that tends to prevent illness, as is the case with physical exercise. When appropriate and scientifically sound, such action should be covered in the guidelines. The merits of the approach are illustrated below in relation to influenza immunization and the prevention of osteoporosis.

**Influenza immunization**

Influenza is a major mortality factor in elderly people. However, immunization can be 50–60% effective in preventing pneumonia and hospitalization, and 60–70% effective in preventing death. Some studies suggest that influenza vaccination is one of the most cost-effective medical interventions available to the elderly (8). Guidelines for the prevention of influenza could assume the following pattern.

- In both developing and developed countries, all people aged 65 and over who do not have a specific contra-indication should be offered influenza immunization annually.

Guidelines on the prevention of illness would address only major problems that are common in both developing and developed countries, whose health authorities may have to face specific regional challenges.

- In all developed and some developing countries, health care workers and other people who might transmit influenza to the high-risk elderly should be offered influenza vaccine unless they have a specific contra-indication.

The manpower and the technological and socioeconomic resources consumed by preventive measures should be sustainable. Increments in the capacity of a developing country to provide resources for health care should be accompanied by the issuing of new guidelines.
Mainly in developed countries but also in a small number of developing countries, influenza vaccine should be offered to all nursing home residents and all elderly persons discharged from hospitals during the autumn and winter, unless there are specific contraindications.

Despite the global variation in disease patterns it is to be hoped that the recommendations will serve as a framework within which health authorities can establish their own health care priorities for the elderly.

In developed countries, elderly people who plan to travel to areas of endemicity should be offered immunization unless a specific contraindication exists.

Prevention of osteoporosis

In osteoporosis there is a reduced amount of bone tissue per unit volume of anatomical bone, and the condition is a major risk factor for fractures and consequent disability or even death in elderly women. Some fractures can be prevented if bone loss is reduced.

There is evidence that calcium may be especially effective in increasing bone mass in prepubertal children, and for a short period of time thereafter. This could lead to an increased peak bone mass and possibly to a reduced risk of osteoporotic fractures later in life (9). However, it may not be effective or cost-effective to give people calcium supplements throughout their lives in order to prevent fractures when they are older.

The advantages of using calcium, together with its costs, have to be considered in relation to short- and long-term expenditure on medical and rehabilitative health care associated with fractures, as well as the costs of decreased mobility and independence.

In addition, given that the condition is probably multifactorial in origin, adequate intakes of calcium and other nutrients, such as phosphorus and vitamin D, coupled with lifelong weight-bearing exercise, may provide the most valid approach to prevention (10). The provision of calcium is only one of many possible interventions. The efficacy and cost-effectiveness of the following methods should also be evaluated:

- administration of estrogen and perhaps progesterone in postmenopausal women at special risk of developing osteoporosis;
- use of diphosphonates, calcitonin, calcitriol and other agents at different ages;
- attention to preventable risk factors in both middle age and later life, such as physical inactivity, falls, smoking, and excessive use of alcohol and caffeine.

The formulation of guidelines for the prevention of this disorder is bound to be difficult, not only because data on the mortality and morbidity it causes are scarce in most regions of the world, but also because of the possibility that there are multiple risk factors. Furthermore, a cost-effectiveness approach needs to consider long-term prevention and compare the merits of a number of methods. After the best possible guidelines have been established on the basis of current information, revisions should be made as new scientific evidence emerges.
Health planning

As well as providing clinicians with a framework for delivering health care to the elderly, guidelines of the kind outlined above could be used by health planners seeking advice on cost-effective preventive measures. It falls to health authorities to make the best possible decisions as to which guidelines can be implemented.

Guidelines on the prevention of illness could be strengthened through international collaborative research. Assessments could be made of the cost-effectiveness of distinct programmes for prevention by conducting cross-national studies. Research conducted in individual countries on the basis of these studies could contribute further to the improvement of the guidelines.

It is important to note that the envisaged guidelines on the prevention of illness would address only major problems that are common in both developing and developed countries, whose health authorities may have to face specific regional challenges. Despite the global variation in disease patterns it is to be hoped that the recommendations will serve as a framework within which health authorities can establish their own health care priorities for the elderly.

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If guidelines on the prevention of illness are developed to form the foundation of a primary care system for the elderly, these people should enjoy improved health and there should be increased efficiency in resource utilization. WHO's Health of the Elderly Programme hopes to initiate such guidelines so that health planners can provide the best possible services for their aging populations in a cost-effective manner.

Acknowledgements

We thank Mr E. Dowd for his assistance and comments on risk factors, population studies and primordial prevention. We are also grateful to Dr E. Tarimo for giving us his views on primary health care, and to Dr D. Fedson for his contribution to the section on influenza immunization. We should like to thank the following people for advice given during the preparation of the present article: Dr J. Rochon, Dr A. Lopez, Dr I. Tabibzadeh, Dr M. A. C. Dowling, and Mr R. Harrison.

References