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**POLICIES FOR HEALTHY AGEING: AN OVERVIEW**

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## SUMMARY

This paper reviews policies in the area of healthy ageing. With the ageing of OECD countries' population over coming decades, maintaining health in old age will become increasingly important. Successful policies in this area can increase the potential labour force and the supply of non-market services to others. They can also delay the need for longer-term care for the elderly. A first section briefly defines what is meant by healthy ageing and discusses similar concepts – such as “active ageing”. The paper then groups policies into four different types and within each, it describes the range of individual types of programmes that can be brought to bear to enhance improved health of the elderly. A key policy issue in this area concerns whether such programmes have a positive effect on health outcomes and whether they are cost-effective.

Looking at specific programmes, the material covered by this review also suggests that important improvements to the health and welfare of older cohorts seem possible from some combination of: delaying retirement, increased community activities, improved lifestyles, health-care systems that are better adapted to the needs of the elderly, particularly where they are combined with more emphasis on cost-effective prevention. However, this study also finds that, while there is considerable evidence that certain policy instruments can help improve the health status of the elderly, it remains unclear as to which are the most (cost) effective. Thus, more research is needed in this area if policy choices are to be (more) evidence-based. But whatever the choice of specific programmes, progress towards healthy ageing would probably be enhanced by placing individual programmes within broader policy frameworks that bring together the full range of measures so as to make them mutually reinforcing.

## RÉSUMÉ

Ce document de travail examine les politiques relatives au vieillissement en bonne santé. Compte tenu du vieillissement démographique annoncé dans les pays de l'OCDE au cours des prochaines décennies, préserver la bonne santé des personnes âgées deviendra de plus en plus important. Des politiques réussies dans ce domaine peuvent augmenter la main-d'œuvre potentielle ainsi que l'offre de services non marchands. Elles peuvent aussi retarder le besoin de soins de longue durée pour les personnes âgées. Une première partie définit brièvement ce que l'on entend par « vieillir en bonne santé » et analyse des concepts similaires – tels que le « vieillissement actif ». Le rapport présente ensuite quatre groupes de politiques et, pour chacun, les différents programmes mobilisables afin d'améliorer l'état de santé des personnes âgées. Une question importante sur l'action publique dans ce domaine consiste à savoir si ces programmes ont un effet positif sur les résultats de santé et s'ils sont coût-efficaces.

S'agissant des programmes spéciaux, les études couvertes dans le présent rapport indiquent en outre que la combinaison de plusieurs mesures apporterait des améliorations majeures à la santé et au bien-être des cohortes âgées. On citera par exemple le report du départ à la retraite ; le développement des services communautaires ; l'amélioration du mode de vie ; une meilleure adaptation des systèmes de soins aux besoins des personnes âgées conjuguée au développement des mesures de prévention d'un bon rapport coût-efficacité. Néanmoins, cette étude conclut aussi que, s'il a été montré que certains instruments d'action peuvent contribuer à améliorer la santé des personnes âgées, les plus coût-efficaces n'ont pas été clairement identifiés. Par conséquent, si les interventions publiques doivent se baser davantage sur les faits, de nouvelles études s'imposent dans ce domaine. Cela dit, quels que soient les programmes retenus, leur intégration à des cadres d'action plus larges réunissant l'ensemble des mesures afin qu'elles se renforcent mutuellement, stimulerait probablement les progrès en matière du vieillissement en bonne santé.

## TABLE OF CONTENTS

SUMMARY .....	3
1. INTRODUCTION .....	6
2. DEFINING “HEALTHY AGEING” .....	8
3. WHAT IS THE SCOPE OF HEALTHY AGEING POLICIES? .....	10
3.1 Improved integration in the economy and into society .....	10
3.2 Better lifestyles.....	10
3.3 Adapting health systems to the needs of the elderly .....	11
3.4 Attacking underlying social and environmental factors affecting healthy ageing.....	11
4. ASSESSING WHETHER POLICIES/PROGRAMMES ARE (COST) EFFECTIVE .....	12
4.1 Cost-efficiency and cost-benefit analysis .....	12
4.2 Economic and social integration .....	13
4.2.1 Longer working lives .....	13
4.2.2 Increasing social capital.....	14
4.3 Encouraging more healthy lifestyles .....	15
4.3.1 Maintaining physical activity.....	15
4.3.2 Healthy eating and appropriate nutrition .....	17
4.3.3 Substance use, abuse and misuse .....	19
4.4 Adapting health systems to the needs of the elderly .....	20
4.4.1 Better co-ordination of care within the health-care systems.....	20
4.4.2 More attention to cost-effective prevention.....	20
4.4.3 Problems with pharmaceutical drug use among the elderly.....	21
4.4.4 Reducing injury among the elderly.....	21
4.4.5 A growing role for home visits? .....	23
4.4.6 Improving health literacy.....	23
4.4.7 Influencing social and environmental factors affecting healthy ageing.....	24
5. CONCLUDING ASSESSMENT .....	25
BIBLIOGRAPHY.....	26
 <b>Boxes</b>	
Box 1. Alternative policy approaches to ageing.....	9

## 1. INTRODUCTION

1. Life expectancy of the elderly has progressively increased over recent decades and this trend is expected to continue. However, lengthening lifetimes are not always accompanied by good health. Studies in the United States suggest that the cost and prevalence of chronic disease is increasing among the elderly (Thorpe and Howard, 2006). Similarly, Lafortune and Balestat (2007), in a study of data from 12 OECD countries, find that severe disability is rising in some countries and falling in others with no clear overall trend. In this context, healthy ageing – i.e. maintaining the elderly in good health and keeping them autonomous and independent<sup>1</sup> over a longer period of their remaining years – is generally considered to impact directly on the costs of health and long-term care, as well as independently increasing the welfare of the elderly.

2. In addition, healthy ageing is likely to be of singular importance for the costs of ageing.<sup>2</sup> Many studies at the OECD – most notably OECD (1998) – have stressed the need to adapt policies in the face of accelerated population ageing over coming decades. Recent projections foresee an increase in overall age-related public spending (pensions, health and long-term care) of approximately four to five percentage points of GDP between 2004 and 2050 for the EU-15 and around 6% for the EU-10 (excluding Poland) (Economic Policy Committee, 2006).<sup>3</sup> Latest OECD projections for health and long-term care (Oliveira-Martins and de la Maisonnette, 2006) suggest spending increases of around three and a half percentage points of GDP (OECD average) and around six percentage points if current trends in non-demographic drivers of health care spending (*e.g.* technology) continue.

3. While the magnitude of the results are, to a large degree, assumption-dependent, they nonetheless suggest that health and long-term care costs will place growing pressure on public finances and that patterns of dependency will have an important impact on the long-term care component. Simulations of different hypotheses indicate that, in the case of continued lengthening of lifetimes, public spending would increase half a percentage point of GDP less (between 2005 and 2050) if half of this lengthening in lifetimes took the form of increased independent living by the elderly.<sup>4</sup> Whatever the magnitude, there is widespread consensus that the impact of an increased share of the elderly in the population on overall health-care costs can be mitigated by keeping individuals in good health and out of hospitals and doctors' offices. Nonetheless, the desirability of any of these policy actions will depend on whether unhealthy

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<sup>1</sup> Autonomy refers to the ability to control, cope with, and make personal decisions about how one lives on a day-to-day basis according to one's own preferences. Independence is the ability to perform functions related to daily living with little help from others. (WHO, 2002)

<sup>2</sup> Grammenos (2005) estimates that health care expenditure for the elderly currently represents about 30-40% of total health expenditure in the EU.

<sup>3</sup> The EU-10 grouping includes Malta, Estonia, Latvia, Lithuania, Poland, the Czech Republic, the Slovak Republic, Hungary, Slovenia and Cyprus.

<sup>4</sup> Compared with a base case where the corresponding increase in the elderly population is entirely made up of dependent individuals. Projections for the EU countries also find that the impact of ageing on public health expenditure could be halved if healthy life expectancy increases in proportion with the increase in life expectancy. (DGECFIN, 2006).

behaviour is amenable to correction from public policies, and the potential size of the impact on health outcomes once the cost of such programmes are allowed for.

4. Policies for healthy ageing may also have a broader role to play in mitigating future ageing-related pressures on public finance. A healthy older workforce could be less inclined to withdraw from the labour force, under existing age-pension or disability arrangements. This would reduce transfer spending, increase the labour force and raise government revenues. The number of working days lost through sick leave may also be reduced (OECD, 2006).

5. Nonetheless, the overall impact on spending will depend on whether ageing-related programmes are cost-effective. Healthy-ageing policies can encompass a range of programmes. Some of these imply costs that, in certain cases, may exceed the potential savings. In these cases, governments will need to consider whether the benefits to the elderly, for example in terms of better health, clearly outweigh the net costs for individual programmes.

6. A considerable part of healthy-ageing policies concerns longer-term prevention issues that focus on one age group. The underlying analytical approach and issues of policy evaluation are broadly the same as those found in the ongoing work on prevention of obesity (Sassi and Hurst, 2008) even though the particular instruments in this case are tailored towards the specific needs of the elderly. A wide range of policies can affect healthy ageing and, when structured appropriately, can interact and be self-reinforcing. Thus, a wide range of policies need to be addressed. As these can include socio-economic factors, the environment and levels of education, they often lie outside the normal scope of activities of health ministries. Policies for healthy ageing are thus likely to require policy integration across a number of ministries.

7. Against this background, this paper reviews policies in the area of healthy ageing. A first section briefly defines what is meant by healthy ageing and discusses similar concepts – such as “active ageing”. The paper then establishes four different groups of policies and, within each, describes the range of programmes that can be brought to bear. Available information on cost-effectiveness is assessed. A final section draws some broad policy conclusions.

8. The paper draws heavily on two important reviews prepared for the European Union (Walters *et al.*, 1999, and Swedish National Institute of Public Health [SNIPH], 2007). Both provide a framework assessing healthy ageing and an extensive literature review, focusing on the results of meta-studies. Both studies – which were almost a decade apart – emphasise the lack of (and need for) cost-effectiveness studies in this subject area that help motivate policy decision. This has been complemented by additional reports from North America and Australia.

## 2. DEFINING “HEALTHY AGEING”

9. A number of different definitions have been used as descriptors for this policy area (See Box 1). While each draws on a different policy perspective, all aim at optimising welfare for the elderly during retirement and later life through, *inter alia*, better health. Within this broad context, *Active Ageing* generally places greater emphasis on maintaining labour market activity and the need to maintain functional capacity for as long as possible. For the Commission of the European Communities (2002), active ageing can improve individual welfare, but also increase overall social welfare through a larger workforce, higher output and a lower burden of dependency. As regards the concept of *Healthy Ageing*, both WHO (2002) and SNIPH (2007) pay greater attention to improving the situation of the elderly against a wide range of objectives relating to their individual well-being. For the SNIPH (2007), the maintenance of personal control over one’s life as physical health gradually declines is a key ingredient to policy, something that may be compromised by top-down as opposed to bottom-up policies. “Active ageing”, as defined by the SNIPH, also focuses somewhat more on reducing the overall cost of ageing to society. However, all of these definitions are broad and overlapping and, at a more practical level, recommend much the same set of concrete programmes and policies.

### Box 1. Alternative policy approaches to ageing

#### Active Ageing

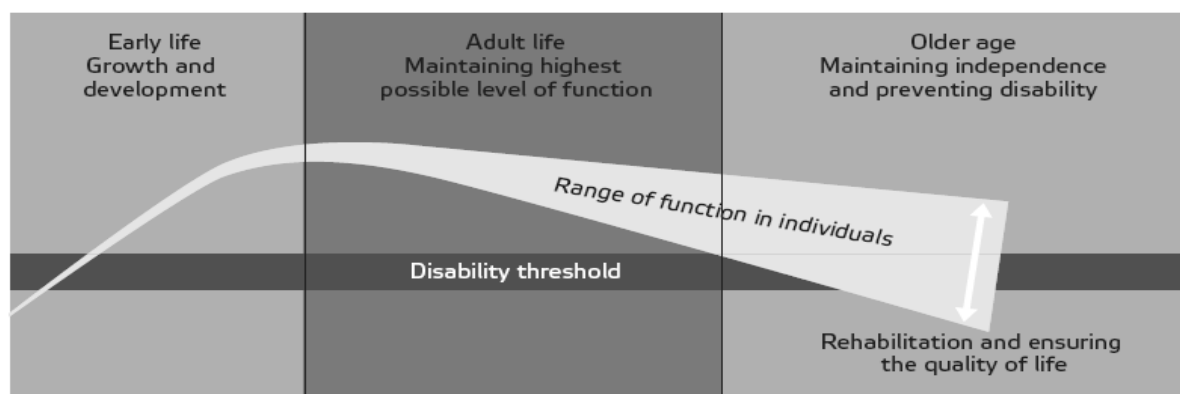
For WHO (2002), *Active ageing* “is the process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age”.

For the EU (CEC, 2000), *Active Ageing* is seen as “an orientation towards policies and practices (sic) including life-long learning, working longer, retiring later and more gradually, and engaging in capacity-enhancing and health-sustaining activities. Such practices aim to raise the average quality of individual lives and, at the same time, at a societal level, contribute to higher growth, lower dependency burdens and substantial cost savings in pensions and health. They therefore represent win-win strategies for people of all ages.”

An important dimension in “Active Ageing” policies of the WHO is maintaining functional capacity over an individual's lifetime as illustrated by Figure 1, which indicates the degree of functional capacity. The degree of functional capacity progressively widens across individuals over their lifespan. The objective of active ageing is to move individuals to the highest level of function that is possible for their age. This means, for older age groups, maintaining independence and preventing disability for as long as possible.

Figure 1. A Life Course Approach to Active Ageing

Functional capacity



Source: Kalache and Kirkbusch, 1997, reproduced in SNIPH (2007).

Another alternative term – “*Successful Ageing*” – is widely used in gerontology and geriatrics and refers, more specifically, to the maintenance of physical and mental function, thereby ensuring that individuals have the psychological and physical “reserves” necessary to withstand stressful experiences in later life. The absence of these “reserves” can lead to increased frailty and dependence (Walters *et al.*, 1999).

Finally, *Healthy Ageing* concerns “the process of optimizing opportunities for physical, social and mental health to enable older people to take an active part in society without discrimination and to enjoy an independent and good quality of life” (SNIPH, 2007). The following elements/objectives of policy appear of greater concern for the authors of that report:

- It presumes that older people are of intrinsic value to society rather than a burden and that their autonomy and sense of personal control are essential for maintaining human dignity and integrity;
- Population-wide healthy ageing requires focusing on health inequalities and the underlying socioeconomic factors. Heterogeneity of needs across individuals must be taken into account;
- Healthy ageing policies rely strongly on prevention and, in this context, “it is never too soon and never too late to promote health” (SNIPH, 2007).

### 3. WHAT IS THE SCOPE OF HEALTHY AGEING POLICIES?

10. The potential scope of “healthy ageing” policies is wide. But a review of recent studies suggests that policies aimed at improving healthy ageing can be grouped under four broad headings.

#### 3.1 Improved integration in the economy and into society

- The need for extending *working lives* as life-expectancy increases has been and continues to be extensively discussed in OECD member countries. Delayed retirement raises the level of GDP, and, therefore, the capacity to finance social programmes more generally. The economic impact of ageing populations on public sector spending on pensions and on health over coming decades can be substantially mitigated if lengthening lifetimes are accompanied by parallel increases in the age of retirement (Turner, 2007; OECD, 2006). It also helps avoid or at least delay the social and economic difficulties many individuals face when exiting the labour market, particularly as there is some evidence that the length of remaining lifetimes at age 60 does not appear to be affected by delayed retirement (Tsai *et al.*, 2005).
- Nonetheless, there remains a wide range of policy impediments that discourage individuals from working longer (see below).
- Working longer is also important because work is an important social network in its own right. For those no longer in employment, “healthy ageing” can also be promoted by better integration into society through participation in communal activities (*e.g.* charitable or community organisations, etc.).

#### 3.2 Better lifestyles

- *Better lifestyles* are likely to be key to further improvements in the longer-term health of the elderly. But because they require changes to individual behaviour, improvements in this policy dimension may be difficult to engineer. While it is “never too early and never too late” to change lifestyles, it is clear that, the earlier risky behaviour changes, the higher the chances of enjoying longer healthy lives. In this context, three policy concerns stand out:
  - *Physical Activity*: This is widely recognised as benefiting both the length and the quality of life of the elderly and promotes independence. Nonetheless, the elderly tend to become less active as they age. There is some evidence that policies to encourage activity can bring about a reversal in this physical decline.
  - *Nutrition*: Older people’s energy requirements decline with age but they have the same need for nutrients. Thus, special attention needs to be given to promoting healthy diets.
  - *Substance use/misuse*: While smoking often starts in adolescence, the longer-term negative effects are mainly felt by the elderly. Promote smoking cessation and lowering excessive alcohol consumption are therefore key policy objectives. Inappropriate use of pharmaceutical drugs also remains an important policy issue and continues to contribute to visits to accident and emergency units and unplanned hospital stays.

### 3.3 Adapting health systems to the needs of the elderly

11. This policy subgroup focuses on more direct public policies to maintain health status among the elderly through health-care systems that are better adapted to their needs. As discussed in Hofmarcher *et al.* (2007), the growing importance of chronic diseases among the elderly will require more appropriate, via better co-ordinated and more patient-centred care. Key areas where policy needs to focus include:

- *More regular follow-up of chronically-ill patients and better co-ordination of care.* A growing share of the elderly has chronic conditions – and individuals often cumulate several of them – while medical care systems have become more specialised and fragmented over time.
- *Enhanced preventive health services:* Primary and secondary prevention are of particular importance. Policies in this area include vaccinations, reducing substance abuse and screening for diseases such as cancer and diabetes and conditions such as high blood pressure. Policies can also include efforts to reduce accidents, for example through the promotion of safe homes of the elderly and their environment or programmes against violence and suicide.
- *Greater attention to mental health:* Mental illness – which can take on a range of forms from depression to dementia and to psychiatric disorders – is widespread among the elderly in OECD countries and can lead to entry into institutional care. Policies to address wider determinants of mental health as well (social isolation, poverty and discrimination and housing) may also be required.
- *Encourage better self-care:* Increased health literacy (see definition in section 4.4.6) and access to technology such as ITC and the Internet may provide individuals with the potential for a greater understanding of their condition and how to adapt their lives to deal with it best.

### 3.4 Attacking underlying social and environmental factors affecting healthy ageing

12. There are wide differences in health, morbidity and mortality outcomes across socio-economic groups (OECD, 2009). Many risk factors such as unhealthy eating and lack of exercise and their associated non-communicable diseases have a greater incidence in disadvantaged segments of the population. Poor-quality housing – where low-income households are often constrained to live – can have negative effects on health. Where such lodgings are concentrated in areas where services and public transport are lacking – for example, in run-down housing estates – the access to public health services may fall as well. Thus, safe and agreeable surroundings can encourage individuals to increase activity and can help break down social isolation and loneliness.

## 4. ASSESSING WHETHER POLICIES/PROGRAMMES ARE (COST) EFFECTIVE

### 4.1 Cost-efficiency and cost-benefit analysis

13. To determine whether preventive interventions will increase social welfare, the costs and benefits of such intentions need to be compared with alternative courses of action. In many OECD countries, the assessment of the allocative efficiency of interventions and programmes is increasingly based on the framework of cost-effectiveness analysis (Sassi and Hurst, 2008). This approach tends not to place monetary values on health outcomes. Rather, other measures, such as quality-adjusted life years (QUALYS), are used for the comparison of programmes.

14. Cost-benefit analysis is an alternative approach that attempts to gauge the efficiency of the intervention relative to the *status quo*. The costs and benefits of the impacts of an intervention are evaluated in terms of the public's willingness-to-pay for them (benefits) or willingness-to-pay to avoid them (costs, e.g. environmental pollution). Inputs are typically measured in terms of opportunity costs. The guiding principle is to list all of the parties affected by an intervention, and place a monetary value of the effect it has on their welfare as it would be valued by them.

15. However, the use of either of these approaches faces important practical problems and choices of method that often make comparisons between studies difficult.

- There is debate as to which costs and benefits should be included. While some of the purported benefits of programmes can often be identified, few studies provide corresponding information on their costs. Differences in the timing of the costs and benefits may also be important. Some healthy ageing policies programmes may not be cost-effective in terms of QUALY's (or a monetary value in cost-benefit analysis) if only the immediate and direct effects are taken into account. In addition, given the long-term nature of some of them, the costs and benefits of the healthy ageing programmes need to be discounted to the present and the degree of cost-effectiveness between programmes may be affected by the size of the discount rate chosen and the timing of the costs relative to the benefits that have been identified;
- Many of the policies belonging to, say, prevention, overlap with other policy areas, jurisdictions or budgets. For example, prevention policies based on public advertising campaigns can also be affected by other factors which are difficult to gauge: for example, on the degree of education of the population. Such cross-effects may need to be taken into account;
- Finally, studies often draw on the results of small groups or those living in circumstances that may be difficult to replicate or generalise to other groups or to a larger share of the elderly population.<sup>5</sup> This is all the more the case when the estimates are based on studies that include population groups other than the elderly.

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<sup>5</sup> For example, exercise programmes may take place in gymnasiums or sports facilities that most of the elderly do not have access to.

16. These features can make the results of these decision tools assumption-dependent. In the case where benefits appear only over the longer haul (*e.g.* prevention), the uncertainty can make policy makers uncomfortable about diverting resources away from uses that have a more immediate and certain return, particularly in a budgetary environment that is typically tight and where it is often impossible to finance all available curative options. Thus, any assessment may need to start with the long-term financial implications of policies and the expected impact of new programmes on health care spending.

## 4.2 Economic and social integration

### 4.2.1 Longer working lives

17. The work place is an important environment for social integration and helps maintain self-esteem. As noted, it also helps avoid or at least delay the social and economic difficulties many individuals face when exiting the labour market. Nonetheless, there is a wide range of policy impediments that discourage individuals from working later in life. In the absence of delayed retirement, the percent ratio of older inactive persons per worker will almost double from around 38% in the OECD area to just over 70%. In OECD Europe, this same ratio could rise to around 100% over the same period. To avoid such a shift in the relative importance of the active to the inactive, a major change in the employment of older workers (age 50 to 64) is required. At present less than 60% of them actually have jobs – compared with 76% of those aged 24-49 (OECD, 2006).

18. Despite increasing longevity, the age at which workers retire has been on a declining trend in virtually all OECD countries, at least up until recently. While the channels into inactivity/retirement are varied – ranging from regular retirement schemes to disability pensions – few of those moving into retirement return to work. Less than 5% of older workers who are inactive have moved back into employment a year later. But whatever the channel into inactivity and the source of replacement income, this pattern reflects the difficulties that older workers have in keeping their jobs and poor prospects of finding employment once laid off. On average, the hiring rate of workers aged 50 and over is less than half the rate of those aged 26-49. Older workers are also under-represented in active labour market programmes (OECD, 2006).

19. Changing policies in this area is extremely important not only for economic but also for broader social and public policy reasons. Moving into retirement can imply an important loss of income for individual retirees and they place burdens on public sector budgets, reducing the available public resources and the scope for public action needed in other areas. The workplace is also an important element of social integration as it gives individuals a role in life and naturally creates social linkages that are not easy to replace once the person leaves the labour force (OECD, 2006). In addition, recent studies suggest that working longer may increase average life expectancy but, of course, it will reduce leisure time.<sup>6</sup>

20. Policies to increase labour market activity among older workers need to act on both the supply and demand sides of the market. In both dimensions, effective policies require setting appropriate incentives within a comprehensive set of policies. Pension and welfare reforms have moved in the appropriate direction in many OECD countries and such policies may have contributed to recent increases in the activity rates of older cohorts in some countries. Pension systems have been made more neutral as regards the retirement decision; the minimum retirement age or the required periods of contribution have

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<sup>6</sup> For example Tsai *et al.* (2005) find, for a cohort of past employees of the petrochemical industry in the United States, that mortality was higher for employees that retired at 55 than for those that continued working.

been increased; formal early retirement schemes have been wound back; and, access to “unofficial” early retirement schemes – such as long-term unemployment support and disability – has also been tightened up in a few countries. However, as populations age, incentives to remain economically active may need to be reinforced further and there remains some way to go in limiting the scope for early retirement through unemployment or disability benefits (OECD, 2007).

21. Increased labour market activity and later retirement among older workers will also depend on “healthy ageing” policies to the degree that poor health is also an important reason for early withdrawal from the labour market. As noted, very limited information suggests working later in life may not reduce mortality. At the same time, Dave *et al.* (2007) estimate – in a cohort study of the possible effect of retirement on “healthy ageing” – that complete retirement is associated with a 5-16% increase in difficulties associated with mobility and daily activities, a 5-6% increase in illness conditions, and 6-9% decline in mental health over an average post-retirement period of six years.<sup>7</sup>

#### 4.2.2 *Increasing social capital*

22. But even if retirement is delayed, individuals will leave employment at some point. At this stage, healthy ageing will also depend on the institutional and social support structures that permit the elderly person to find their footing in society outside the workplace. Evaluating the role and importance of such institutions and effects for the promotion of “healthy ageing” often draws on the concept of “social capital” (Putnam, 1993). This concept concerns the array of political, community and social institutions, social relationships, civic engagement, and informal arrangements that can help the elderly to build a sense of trust in their communities, promote social integration and prevent solitude and social isolation from developing.

23. Social capital and social institutions and behaviour vary across countries with different social environments and mores. For example, the results of the Hale project (Bodgers *et al.*, 2005) indicates that women living in southern Europe have more social contacts and lower total morbidity than those in northern Europe and the same was found for men either living with a partner or with other people.

24. Problems of social integration may be more important for lower income or socially disadvantaged groups in society where life stress and lack of social support can, for example, affect coronary heart disease. Lack of social support may well increase the prevalence of chronic illness and have effects on mortality (Pinquart and Sörensen, 2001). In this same context, Greenwood *et al.* (1996) find that coronary heart disease mortality increases by up to four times in the absence of social support when compared with a control, a feature that the authors attribute to stress.

25. Evidence presented by SNIPH (2007) provides some indication of specific programmes that can encourage healthy ageing, largely through various dimensions of social activity:

- Gillies (1998) finds that alliances or partnerships to promote health across sectors, across professional and lay boundaries and between public, private and non-government agencies do work. He also argues that volunteer activities, peer programmes and civic activities help maximise benefits from community approaches.

<sup>7</sup>

As regards the direction of causality, the study looks at the effects of retirement on health on the basis of panel data that follow individual cohorts through time. Any adverse health effects are mitigated if the individual is married and has social support, continues to engage in physical activity post-retirement, or continues to work part-time upon retirement. Some evidence also suggests that the adverse effects of retirement on health may be larger in the event of involuntary retirement.

- Volunteer work undertaken by elderly volunteers increases mental well-being among those who volunteer and improves the mental health of older people who receive the services (Wheeler *et al.*, 1998).
- Cattan *et al.* (2005) examine health-promotion interventions to prevent social isolation and loneliness among older people. A review of the literature suggests that 90% of effective interventions were group activities with an educational or support input. General results are that voluntary work has a positive effect in reducing loneliness, as do educational and group activities.

26. A more recent study (Sirven and Debrand, 2008) using the SHARE panel data finds that the potential effect of social participation in societies is important for self-reported health. Results suggest that if all elderly persons were involved in social participation activities, the share of respondents aged 50+ who categorized themselves as having good/very good health would be 62.8% compared with 53.5% if no-one participated.

27. There is less consensus on how to improve – or at least maintain – social capital and to encourage greater intercourse among the more elderly population. Some authors – such as Putnam (1996) – have argued that social capital has been decreasing in the United States as a result of a decline in community activity. Some dimensions of globalisation may also contribute to weakening social capital – increased immigration in some countries may make it more difficult to integrate newcomers into local communities. The elderly without relatives can be particularly isolated and language may be a barrier to finding remedies. Thus, the formulation and analysis of the effectiveness of policies in this area for individual countries will need to take account of the cross-country variation in underlying social behaviour and the social and cultural conditions of the sub-groups in each.

### 4.3 Encouraging more healthy lifestyles

28. Achieving better lifestyles has probably the largest potential for improving the health of the elderly. This can cover a number of dimensions: physical ability, substance misuse or abuse and healthy eating and diet. Peel *et al.* (2005), in a systematic review of evidence on the behavioural determinants of healthy ageing, confirmed *inter alia* that healthy ageing is associated with non-smoking, being physically active, maintaining weight within moderate ranges and consuming alcohol in moderation.

#### 4.3.1 Maintaining physical activity

29. Physical exercise is very important for maintaining health and physical functioning as people age; it increases strength and, more importantly, it is a strong predictor of healthy ageing. It is associated with lower incidence of cardiovascular disease, osteoporosis and bone loss, and certain forms of cancer. It can reduce the risk of falls, lower blood pressure among those suffering from hypertension, and reduce the risk of stroke and of insulin sensitivity. Exercise may also reduce the risk of depression and may decrease the chances of developing dementia, although it is difficult to isolate exercise from other factors that are often associated with other health-ageing policies such as social networks (Callaghan P., (2004).<sup>8</sup> Better physical condition reduces the risk of dependency. In sum, exercise is the “best preventive medicine for old age” and reduces significantly the risk of dependency in old age (SNIPH, 2007).

30. Physical strength peaks in young adulthood and then declines irreversibly: by the age of 80 about half of the muscle mass will have disappeared for the average individual and this sometimes leaves the individual precariously close to the point where a small decline in strength will render basic everyday activities immobile and dependent. A subsequent period of inter-current illness may leave the person

<sup>8</sup> However, Lawlor and Hopker (2001), in a meta-study, were unable to find clear evidence of positive effects of exercise on depression given the methodological quality of the underlying studies.

immobile and dependent. However, there is growing evidence that exercise that strengthens the remaining muscle tissue can lead to a “rejuvenation” that may be equivalent to “turning back the clock” by 1 to 2 decades even in extreme old age, thereby preventing individuals falling below the threshold for independent living (McMurdo, 2000).

31. In general, the elderly do not exercise enough although the degree of exercise is very hard to measure as formal measures do not necessarily take into account exercise of a casual nature – i.e. shopping or housework.<sup>9</sup> Comparable data on exercise is, therefore, not readily available.<sup>10</sup> In the United Kingdom, studies suggest that physical activity declines rapidly at around the age of 55 and a third of people over 55 do not exercise at all compared with 10% of people aged 33-54. In practice, only relatively few individuals are doing enough physical exercise to maintain their health whatever the age (Allied Dunbar Health Education Authority, Sports Council, 1992.)

32. Studies of the effects of exercise on falls suggest that regular exercise programmes can reduce the incidence of falls by 10% and as much as 25% if the focus is on balance (Province *et al.* 1995). This is also associated with improvements of intermediate indicators such as strength, gait and balance. However, the impact on overall costs is difficult to judge as there is little information as to whether they reduce falls requiring medical attention, and not all studies show the same positive benefits (Walters, *et al.* 1999).<sup>11</sup> Weight-bearing activity increases bone density and reduces osteoporosis, and progressive-resistance training has been shown to have positive effects.

33. There is more doubt about how best to persuade people to exercise more and to sustain this over time. The literature in this area often describes programmes that take place in artificial/optimal conditions using equipment that may not be available in real life, making it difficult to know whether any conclusions can be generalised. A growing body of research has shown that most of the health benefits can be obtained from regular physical activity of moderate intensity rather than formal exercise programmes aimed at achieving high levels of physical fitness. Generally, there is a need to make the exercise as pleasant and accessible as possible.<sup>12</sup> In the US and the UK, walking at a brisk pace is considered to be the cheapest and the most acceptable form of exercise (Walters *et al.*, 1999; Hillsdon *et al.*, 1995).

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<sup>9</sup> Observational studies of activity among older adults are often based on questionnaire results that suffer from recall bias, are unable to account for free-living activity (i.e. activity that does not have the objective of formal exercise), leading to an under-estimate of the actual amount of exercise undertaken. These measurement problems make interpretation difficult. Using a method that takes into account all energy expended, Manini *et al.* (2006) find a strong link between exercise and survival, indicating that all kinds of exercise can lead to reduced risk of mortality.

<sup>10</sup> One study cited by Walters *et al.* (1999) collected data in 18 European towns of people aged 71-75 on employment, participation in sport and leisure activities, which allows some comparison between activity patterns in different parts of Europe. The study found considerable variation across countries in activities. There was a much greater likelihood of men over 65 still being in full or part time employment in southern Europe than in the north, and a greater level of participation in sports activity in northern Europe than in the south for both men and women.

<sup>11</sup> Nonetheless, physical activity interventions appeared to reduce health-care costs relating to falls under the health-care system of the United States (Fries, 1997; Rizzo *et al.*, 1996) and the United Kingdom (Munro *et al.*, 1997). Robertson *et al.* (2001a) find that exercise programmes for a randomly controlled sample in New Zealand have a positive effect on falls but that the programmes are cost-effective only for the 80+ group. The results are sensitive to the type of programme (Robertson *et al.*, 2001b).

<sup>12</sup> McMurdo (2000) suggests that public health advice has failed to shake off the image of being “high-tech” with an emphasis on high levels of physical performance.

34. However, it is difficult to change the behaviour patterns of elderly individuals, particularly those who have done little exercise earlier in life. Some studies suggest that programmes were more effective under the following circumstances (Conn *et al.*, 2002, Eakin *et al.*, 2000, Munro *et al.*, 1997):

- Interventions incorporating self-monitoring and regular contact with an exercise specialist in a centre-based environment that promotes activity of moderate intensity.
- Programmes or exercise supported by the advice of a health professional accompanied by written material or advice from a primary-care professional and/or exercise specialist.
- When the interventions were: home-based; unsupervised and informal; used walking as the promoted exercise; involved exercise of moderate intensity and involved frequent professional contacts (Hillsdon *et al.*, 1995).

35. In sum, policies should focus on opportunities for affordable, accessible and attractive exercise of moderate intensity in areas that are pleasant and safe with professional support in both home and community settings. But policies should also focus on the incentives for activity of an informal nature – such as home working (see Manini *et al.*, 2006). In some cases, home help for the elderly may effectively eliminate the only exercise that they do undertake. Thus, policies regarding physical exercise may need to take a more global view of measuring activity and policies that emphasise training such that individuals are less reliant on home helpers (McMurdo, 2000) unless really in need.

36. A key problem with an evaluation of healthy ageing is the paucity of cost-effective or cost-benefit studies of alternative programmes. SNIPH examines a number of studies showing that certain programmes can be highly cost-effective. In this context, Munro *et al.* (1997) evaluate an exercise programme in the UK using two hypothetical cohorts and find it highly cost-effective compared with alternative programmes for the elderly.<sup>13</sup> Similar results were found by Roberston *et al.* (2001b) for the effects of home exercise on the cost of medical care and on falls. A study of the effects of Tai Chi exercise by nursing-home residents showed that the value of benefits outweighed the costs (Wilson and Datta, 2001).<sup>14,15</sup>

#### 4.3.2 *Healthy eating and appropriate nutrition*

37. Healthy eating belongs to a wider set of policy issues concerning diet, particularly in the context of increasing levels of obesity. (Sassi and Hurst, 2008).

38. Finding and maintaining the appropriate weight for the elderly needs to take account of a number of factors:

- Problems of obesity are also frequent for the elderly and require programmes to reduce the associated health risks (Michaud *et al.*, 2007). As for younger age groups, it remains difficult to know how to achieve extensive weight loss and to sustain it over time.
- While obesity remains a major public health problem, some bodyweight increase may help promote healthy ageing. While the elderly do need slightly less calorie intake than younger age groups, care must be taken to ensure that bodyweight is maintained as the elderly find it difficult to put weight back on once they have lost it (Bodgers *et al.*, 2005).

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<sup>13</sup> Cost was 331 pounds per QALY.

<sup>14</sup> The cost per QALY was 121 pounds per prevented fall.

<sup>15</sup> The cost was approximately €17 000 per QALY gained.

- At the other extreme, low weight is associated with increasing risk of osteoporosis and malnutrition (Hagenfeldt *et al.*, 2003).

39. The elderly need to ensure that they receive adequate nutrients. As with other age groups, they need to consume a lot of vegetables and fruits and lower intake of saturated and animal fats and salt. There are significant effects on diet of fruits and particularly vegetables on the risks of cancer and diabetes; reducing intake of salt and animal and dairy fats can significantly reduce blood pressure, cholesterol and associate the mortality and morbidity from cardiovascular disease (Muldoon *et al.*, 1990, Riboli and Norat, 2003). In this context, a report of the Swedish Council on Technology Assessment in Health Care found that eating habits were related to bone density and osteoporosis (Hagenfeldt *et al.*, 2003). They also found that Vitamin D was very important in the northern countries where lack of sunlight in winter reduces its natural formation.

40. There are wide variations in diet across OECD countries. Within Europe, for example, people in the north tend to have less balanced diets than in the Mediterranean area where there is greater consumption of vegetables, fruits and fibre and less of dairy fats, contributing to some of the differences in morbidity patterns. But whatever the country, dietary patterns appear to be changing and elderly people – like their younger counterparts – are relying more on pre-packaged and processed foods, often with high salt content.

41. Irrespective of the dietary patterns and needs, actual food consumption often declines with age such that there may be problems of low vitamin, mineral and calorie intake. A number of factors can affect the intake of food. Disabilities can reduce the ability to feed oneself, for example where the capacity to swallow has been affected. Lack of exercise can diminish appetite and, more generally, interest in food may be affected by dementia and depression. Secondary effects of medicines may also negatively affect the desire to eat. In terms of the simple pleasure of eating, the sense of taste diminishes with age while poor teeth and mouth infections can make eating painful or reduce the ability to chew. Bad eating habits can result from lack of social integration or solitude or depression. People living alone will find cooking for themselves a chore and the opportunity of being able to eat meals with family and friends may positively affect the pleasure of preparation and of eating.

42. While there is relatively little in the way of experimental results as to how best to induce the elderly to change their eating habits or the best way to adjust diets to maximise the effect on health and disability, several meta-studies provide some hints as to how healthy eating can be improved (SNIPH, 2007):

- It helps to use “goals” or “targets” for eating and to involve the elderly in group food preparation in settings such as community housing or meal arrangements.
- Food in institutions for the elderly or social services serving the elderly in a non-institutional environment need to provide balanced meals in line with their dietary needs.
- Dietary advice for the very old is required to ensure that their diets are balanced. Dietary needs may change over the remaining lifetimes of the elderly and advice may need to be recurrent and adapted to new needs. Such advice needs to be tailored in a way that makes the elderly able to absorb the message.<sup>16</sup>

<sup>16</sup>

In judging the impact of policies in this area, Matson-Koffman *et al.* (2005) identified a number of policies that can encourage better eating. Several studies showed that labelling healthy foods in restaurants affected food choices in the desirable direction and the effect was stronger when combined with price decreases. The results do suggest that policies can have effects on behaviour. But there is little knowledge of the long-term impact of these policies or of their cost-effectiveness.

- More general recommendations (Walters *et al.*, 1999) include: setting national targets of one balanced meal a day; targeting assistance on those most in need; including an assessment of eating habits at the time of geriatric evaluations; encouraging local availability of healthy and affordable food; and establishing programmes for improved diet by regulating at a national level prepared or processed foods.

#### 4.3.3 *Substance use, abuse and misuse*

43. As regards substance abuse, policies need to address the difficult issue of addiction to nicotine, alcohol and, more generally, to narcotic drugs. This makes it very hard to persuade individuals to change their behaviour.

##### 4.3.3.1 *Tobacco*

44. Tobacco is one of the few consumer products that eventually kills half of its regular users if manufacturers' recommendations are followed (Beaglehole and Yach, 2003). Although tobacco consumption often starts at a young age, the lag between smoking and negative health effects is long. The impact of continued smoking tends to be larger at older ages and the risks of illness and death increase as people age and continue smoking. Smokers lose on average 13 years of healthy life expectancy and smoking is associated with increased risks (sometimes as much as 10 to 20 times) of contracting 40 or more different diseases. Peel *et al.* (2005) find that non-smoking – along with moderate alcohol consumption – are correlated with healthy ageing. Ex-smokers and never-smokers with a high level of physical activity were 2½ times more likely to age successfully. Studies on younger populations also suggest that this is the case. Even though stopping smoking when aged 65-70 halves the excess risk of premature death, some studies show that older smokers are less likely to try to stop than younger smokers (but are more successful when they do). In summary, smoking cessation has very high payoffs in terms of healthy ageing and remains one of the key policy levers in improving health in old age.

##### 4.3.3.2 *Alcohol*

45. There is some inconclusive evidence of the positive effects of moderate alcohol consumption, (particularly of red wine) on heart disease and other medical problems. Nonetheless, alcohol misuse disorders are common among older people and are notably associated with health problems. These are often ignored or under-assessed. In addition, alcohol intake often negatively interacts with pharmaceutical drugs and can make falls more likely.

46. There is a wide range of opportunities to improve population health of the elderly through primary and secondary prevention in this area. In many countries, however, these policies appear to be often unused and the perception of weak incentives to invest in prevention is common. A number of preventive strategies with proven effectiveness are underutilised or not utilised at all. For example, taxes to deter alcohol and tobacco consumption are cost-effective preventive measures and there is often scope for further tax increases.<sup>17</sup> Regulation governing access to tobacco for teenagers may also help as well as limitations on advertising for addictive substances more generally (OECD, 2006). Clean air policies in public areas also provide strong incentives to limit smoking. As regards alcohol, wine is often little taxed.

<sup>17</sup> Price increases have consistently been shown to reduce cigarette consumption in a variety of high-income settings. Typically a relative price increase of 10% leads to a fall of 3% to 5% in consumption (Chaloupka and Warner, 2000). Consumption among teenagers falls more than among adults. Raising tobacco taxes is, therefore, a very effective means of reducing mortality and morbidity. Other very cost-effective preventive actions targeting tobacco are a comprehensive ban on tobacco advertising and the development and enforcement of clean indoor air laws – the latter is something that countries such as France, Italy, Ireland and Sweden have undertaken.

#### 4.4 Adapting health systems to the needs of the elderly

47. There is a wide range of policies discussed in the literature as to how to adapt the health and social care needs to the growing number of elderly. This section examines a number of policy areas that has received particular attention in terms of policies in individual countries. Where available, evidence on cost-effectiveness is highlighted.

##### 4.4.1 *Better co-ordination of care within the health-care systems*

48. Health-care systems need to adapt to the changing needs of increasingly elderly populations. As noted, care for acute episodes of illness is giving way to chronic conditions which may require patients to be seen by a number of different providers in a context where the supply of care is becoming increasingly fragmented. At the same time, older patients tend to have lower health literacy than younger cohorts. This can mean that older patients – particularly those with severe medical conditions – fail to receive coherent and patient-centred care with adequate follow-up, thereby increasing the risk of unplanned hospital stays and higher overall costs. Lack of appropriate co-ordination is also associated with poor quality of care. Particular problems appear to occur when patients transfer from one level of health care to another, and such problems appear to be most intense for transitions into long-term care. Addressing these issues implies the need for improved care co-ordination.

49. As discussed at length in Hofmarcher *et al.* (2007), concern over the adequacy of care co-ordination is widespread across OECD countries. However, there appear to be a number of important impediments to achieving better performance in this area. Many countries do not identify a medical practitioner as care co-ordinator for individuals with chronic conditions and there are few incentives for co-ordination even when they do so. Primary or ambulatory-care provision may not be adequate to service the new demands for the chronically ill and may need more resources. Some payment systems also tend not to favour care co-ordination and patient follow-up. Information systems that permit the transmission of patient information between providers is nascent in most countries, increasing the risk of medical and prescription errors and/or duplication of tests. Finally, there is need for increased system integration, particularly between social services and the medical system to improve system and policy coherence.

50. There is a wide range of responses that can make existing health and health-care systems better adapted to the needs of the elderly. At the level of health care, much care of a chronic nature can be provided in an ambulatory environment. Increased attention to improved co-ordination of care and, where feasible, improved models of primary care to enhance follow-up may be desirable. Hofmarcher *et al.* (2007) have pointed to the fact that doctors working in solo practice and paid on a fee-for-service basis may be the least likely to provide care that is best adapted to the elderly. While no single alternative model can be identified as optimal, multi-doctor practices working in teams with other health professionals and where patient follow-up is remunerated have many positive features (Wagner *et al.*, 2001).

##### 4.4.2 *More attention to cost-effective prevention*

51. Not all preventive activities improve health and some may actually increase cost and have relatively little impact on health (Russell, 2007) or even worsen it (Cohen *et al.*, 2008). Preventive health care needs to be evaluated on a case-by-case basis. Against this general background, there may, nonetheless, be benefits from an increased focus on prevention among the elderly.<sup>18</sup> Strictly speaking, screening for cancer is not a preventive intervention. However, early detection of cancers, particularly in

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<sup>18</sup> Prevention activity should also focus on lowering alcohol and tobacco consumption, as well as improving the diets of the elderly. The cumulative effects of improved performance in all three areas are likely to be stronger than for only one of them.

their asymptomatic stages with appropriate treatment, does prevent or attenuate morbidity and mortality. To be successful, screening programmes need to be able to ensure considerable compliance with the screening recommendations. Breast cancer screening with mammography every two years for women aged 40 to 60 is very cost-effective. Other screening programmes such as one-time colonoscopy screening at age 50 or colonoscopy every ten years or sigmoidoscopy every five years coupled with annual faecal occult blood testing also appear to be very cost-effective ways of improving population health (Groot *et al.*, in press; Ginsberg *et al.*, 2004), though they are rarely fully applied.

52. Second, there may be a need to introduce more active follow-up of the elderly for, say, vaccinations. A recent US study (Nichol *et al.*, 2007) covering more than 700 000 persons finds that preventive vaccination for influenza reduces the risk of hospitalisation by 27% and the risk of death by 48%. Such approaches are more easily integrated in health systems with a strong emphasis on care co-ordination and patient follow-up. Strategies to increase vaccination include reminder systems, mass mailing to encourage vaccination and both these approaches appear to be cost-saving (Berg *et al.*, 2004).

#### **4.4.3 Problems with pharmaceutical drug use among the elderly**

53. There is a wide range of drug-related issues among the elderly that begin with the fact that many drugs are rarely tested on elderly people even though their effects may differ from the younger population due, for example, to differences in the degree of renal function or weight. As noted, the elderly often have a number of different chronic conditions and consume a range of medicines which can interact sometimes with lethal effect. Drug-related errors are the most common type of medical error, occurring at the time of prescribing through to the monitoring of patients' responses. The percentage of hospital admissions due to adverse drug reactions varies from around 4% in young people to 16% and more among older persons, and ranks between the fourth and the sixth cause of death in hospitalised patients (SNIPH, 2007). Error rates are high in hospitals, as well as in long-term care settings and outpatient facilities. The costs of treating drug-related injuries occurring in hospitals alone amount to \$3.5 billion a year in the United States (IOM, 2006). Doctors may prescribe in the absence of full knowledge of the drugs already prescribed, make prescription errors and patients may under- or over-use the drugs that they are prescribed. The risk of adverse drug reactions increases with the number of prescriptions. Within this context, special attention may need to be given to:

- Inclusion of older people in clinical trials on the basis that these age groups will use the drugs the most. This will permit better information about dosage, efficacy and long-term effects of an undesirable nature.
- Establishment of clearer protocols of drug use and ways of checking that these are being followed. In this context, disease or case-management programmes can provide a vehicle for putting such arrangements in place (Hofmarcher *et al.*, 2007). In the United States, a recent IOM committee recommends steps to improve interactions between health-care professionals and patients through the creation of systems/resources providing objective, easy-to-understand information about prescription drugs for patients (IOM, 2006).
- In this context, the use of ICT with appropriate decision aids by primary-care co-ordinators may also help. Alternatively, incentive arrangements, such as the "pay for performance" that are under experimentation within the US Medicare programme, may be another possible method of limiting drug-related problems.

#### **4.4.4 Reducing injury among the elderly**

54. An area of specific interest concerns prevention of injury among the frail elderly. Falls are the most common cause of injury and of fatal injury among the elderly. These can occur in institutional environments, as well as at home or outside. In Norway, a study has found that 90% of fractures among

those over 65 were caused by falls and that 50% of falls occurred in the home (Ytterstad, 1996). Around 30% of elderly in Australia report one or more falls in the previous 12 months and, in the state of Victoria, 48% of people aged 65 and over who experienced a fall and who sought medical attention, were admitted to hospital (Bennett, 2003). A recent report by the Public Health Agency of Canada (2005) finds that:

- Falls are the second leading cause, after motor vehicle collisions, of injury-related hospitalisations for all ages, accounting for 29% of injury admissions.
- Seniors aged 65 and over accounted for 40% of all injury hospitalisations, the largest proportion of all injury hospitalisations. Falls accounted for 85% of injury hospitalisations in this age group. The fall-related injury rate is nine times greater among seniors than among those less than 65 years of age.

55. They also estimate that a 20% reduction in falls would translate to an estimated 7 500 fewer hospitalisations and 1 800 fewer permanently disabled seniors. The overall national savings could amount to \$138 million annually.

56. Women are particularly vulnerable to injury as they may be physically weaker and suffer from osteoporosis, particularly later in life. Every third woman in Stockholm County over 80 either risks eventually incurring a hip fracture or has already had such an accident (Hokby *et al.*, 1996). Even though all falls do not result in injury, they can lead to considerable morbidity and mortality among the elderly and are often accompanied by costly hospital stays, loss of autonomy and long-term residency in institutions. Fear of falling can also lead to reduced physical exercise, increasing further the risk of falls.

57. But falls are not the only potential cause of injury among the elderly. Violence towards older people is also a concern and this can occur within family environments, as well as in institutions (SNIPH, 2007). Such problems reflect the fact that living with the elderly can be a daunting task as individuals become more dependent on others. Poorly trained and inadequate numbers of staff in institutions may lead to difficult relations with residents and staff burn-out can be high.

58. As noted in the section above on exercise (4.3.1), a number of studies suggest that programmes to increase physical exercise have relatively low costs per QALY and lead to reductions in falls. But other types of programmes have also been considered. Sahlén *et al.* (2006) report the results of a randomised controlled trial in Sweden with 200 elderly pensioners who received preventive home visits and found that mortality and the use of certain health-care services decreased, with a moderate cost per QALY of €18 500.<sup>19</sup> Finally, a hip-fracture prevention programme in Sweden using a comprehensive information package also proved cost-effective with the benefits appearing to outweigh the costs.<sup>20</sup>

59. There is a wide range of responses that can make existing health and health-care systems better adapted to the needs of the elderly. At the level of health care, much care of a chronic nature can be provided in an ambulatory environment. Increased attention to improved co-ordination of care and, where feasible, improved models of primary care to enhance follow-up may be desirable. While no single alternative model can be identified as optimal, a number of countries are moving towards multi-doctor practices that face incentives to encourage better care co-ordination and patient follow-up.<sup>21</sup>

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<sup>19</sup> This study took into account the wider social benefits.

<sup>20</sup> The authors claim that this could reduce the cost of treating hip fractures by approximately one quarter (The Health gain project, 2004).

<sup>21</sup> Some elements of such an approach are under experiment, for example, in Germany, the United Kingdom and the United States (*e.g.* Wagner *et al.*, 2001).

#### 4.4.5 *A growing role for home visits?*

60. Home visits can serve a number of goals in healthy ageing of the elderly and such activities are likely to become more important as the population ages. Maintaining autonomy of the elderly will become progressively more important as the costs of institutional care rise. It can encourage a certain number of public health activities such as:

- The promotion of exercise. As noted above, home-based exercise arrangements with frequent contact with professionals do appear to encourage physical activity such as walking.
- Vaccinations where the person visiting has adequate medical training.
- Review of the state of health and an assessment whether medication is being taken as prescribed.
- Prevention of falls through an assessment and elimination of risks in the elderly person's accommodation.
- Ensuring that individuals are able to take care of themselves following an episode in an institution – either acute or longer term.

61. The effectiveness and cost-efficiency of home visits remains, nonetheless, ambiguous, and this may partly reflect the fact that these are often provided by social affairs ministries operating on different budgets from medical services.<sup>22</sup> There is consistent evidence that home visits could reduce mortality and nursing-home admissions. There is also some evidence that the reduction in mortality may be greater among the younger elderly, and that nursing-home admissions may be reduced to a greater extent if there are higher levels of visits. But visits have not been shown to reduce functional decline, except amongst those with a low mortality rate and in programmes providing multi-dimensional geriatric assessment and follow up. On balance, home-visiting programmes do have the potential to be cost-effective due to their low cost compared to long-term institutional care (Elkan and Kendrick, 2004). A review of meta-studies by SNIPH (2007) – covering much the same literature – indicates positive outcomes in terms of reduced hospital stays and readmissions (but only for home-care interventions extending beyond home visits), some modest reduction in mortality and, most important, a reduction in admissions to institutional care or nursing homes.

#### 4.4.6 *Improving health literacy*

62. Health literacy is increasingly becoming an issue for health promotion. It can be broadly defined as the ability of individuals to access and use health information to make appropriate health decisions and maintain basic health. It includes whether individuals can read and act upon written health information, as well as whether they possess the speaking skills to communicate their health needs to health professionals and the listening skills to understand and act on the instructions they receive (Canadian Council on Learning, 2007).

63. Greater health literacy can help improve individual health. They can allow patients to better manage chronic conditions and to make best use of the existing health-care systems. Surveys in the United States suggest that health literacy is more important than education achievement in explaining the use of preventive services (Scott et al., 2002). Surveys also indicate that health literacy falls as age rises (Baker et al., 2000; Scott et al., 2002). This means that an understanding of the implications of chronic conditions is weakest among those with the greatest need. Conventional methods of transmitting information may need to be adapted to those with problems of eyesight or other problems of communication.

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<sup>22</sup> In this context, England is experimenting with “community matrons” who are trained nurses working to bridge the gap between health and social-care provision.

#### 4.4.7 *Influencing social and environmental factors affecting healthy ageing*

64. As noted, there is considerable evidence of a close association between economic and social class and health status (CSDH, 2008; Mackenbach, 2006; Mackenbach *et al.*, 2008). While the need for action to reduce inequalities of a social and environmental nature has often been raised (SNIPH, 2007; Walters *et al.*, 1999), government policies in this area are, however, often limited to ensuring that there is equal access to health-care for equal need. National authorities – in their large majority – appear to have been much more cautious in setting policies aimed at narrowing the distribution of health status.<sup>23</sup> This may reflect a number of factors:

- There is a widespread acceptance of the inevitability of some inequality in health across groups as long as there are differences in broader measures of social inequality concerning education, income and social status.
- The disadvantaged – who are often most at risk – appear to react less positively to preventive measures or programmes, making programmes less cost-effective.
- Policies concerning education or limiting poverty may be beyond the policy ambit and scope of action of health ministries.
- While the objective of healthy ageing may benefit from focusing resources on socially disadvantaged groups, healthy ageing is not the primary reason for policies in these areas.

65. The links with and interactions between wider social and economic policies will not be addressed further in this note as they generally lie outside the direct responsibility of health ministries. However, this does not imply that these policies should be ignored as the impact of individual policies in areas outside the normal purview of health ministries may be strengthened if individual programmes are formulated in ways that reinforce each other. In practice, healthy ageing can be encouraged by a range of policies coming from a wide range of actors in both the public, para-public and the non-profit sectors. Actions to promote the health of older people have been identified in the fields of fiscal policy, social welfare, health services, transport, urban planning, housing, engineering and education. The individual impact of such actions has often been noted but they have rarely been implemented in a self-reinforcing way. Wider policy frameworks which bring together these different dimensions of policy into a more coherent whole and that take into account the potential interactions between different programmes are needed. Such strategies may be best achieved at national level within the context of a broader national health strategy, and such approaches have been put in place in some European countries.<sup>24</sup> These strategies can provide valuable support for health-promotion actions across different policy areas. (Walters *et al.*, 1999).

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<sup>23</sup> The United Kingdom may be an exception here.

<sup>24</sup> For example, Sweden and Ireland have set specific health strategies for older people, supported at the highest political levels and involving actions across various policy sectors.

## 5. CONCLUDING ASSESSMENT

66. With the ageing of OECD countries' population over coming decades, maintaining health in old age will become increasingly important. Successful policies in this area could have the following potential benefits:

- It will increase the probability that individuals can and will work longer and retire later;
- Once in retirement, more healthy individuals can also help care for their partners or elderly relatives who are still alive, for younger generations (for example through child care) and act as a labour reserve for community support activities. Thus, they can become an important resource for the economy and for society more broadly;
- As lifetimes lengthen, the need to care for individuals in costly institutional environments will be delayed, thereby slowing the continuing growth in health and long-term care spending.

67. However, while there is considerable evidence about the linkages between specific policy instruments and improved health, it still remains unclear as to which are most effective – and even more important for policy makers trying to make reasoned judgments about resource allocation – which are cost-effective. More research is needed in this area if appropriate policy choices are to be made for public interventions. But whatever the choice of specific programmes, progress towards healthy ageing would probably be enhanced by placing individual programmes within broader policy frameworks that bring together the full range of measures so as to make them mutually reinforcing.

68. Looking at specific programmes, the material covered by this review also suggests that important improvements to the health and welfare of older cohorts could come from some combination of: delaying retirement, increased community activities, improved lifestyles, health-care systems that are better adapted to the needs of the elderly and combined with more emphasis on cost-effective prevention. Other policy dimensions – such as housing, education and reduction in economic and social precariousness – have also been identified as potentially playing a role, but they require more in-depth review than can be addressed in this paper.

69. Within this policy context, government will want to focus on areas where the costs of intervention are low and the payoffs are high. This may mean emphasising the role of the associative and non-profit sector which mainly relies on volunteer/community activities but which can also benefit from some professional oversight and support. Changing lifestyle factors appear particularly important: cessation of smoking, reduced alcohol intake and, particularly, more exercise, seem to be the most promising measures to improve the health of the elderly. But much of the success of many existing programmes appears to depend on the willingness of the elderly themselves, and studies reviewed here suggest that it may be very difficult to engineer sustained changes in their behaviour. With this in mind, issues of prevention may need to start early: encouraging “good” behaviour at an early age may help ensure that these healthy lifestyles persist into older age. As emphasised by SNIPH (2007): “It is never too early and never too late to promote health.”

## BIBLIOGRAPHY

- Allied Dunbar, Health Education Authority, Sports Council (1992), *Allied Dunbar National Fitness Survey: main findings*, Sports Council and Health Education Authority, London.
- Baker, D., *et al.* (2000), "The Association between Age and Health Literacy among Elderly Persons", *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, Vol. 55(6), pp. 368-374.
- Beaglehole, R. and D. Yach (2003), "Globalisation and the Prevention and Control of Non-Communicable Disease: the Neglected Chronic Disease of Adults", *The Lancet*, Vol. 362, No. 9387, pp. 903-908.
- Bennett, J. (2003), "Investment in Population Health in Five OECD Countries", *OECD Health Working Papers*, No. 2, OECD, Paris.
- Berg, G.D., *et al.* (2004), "Reducing Medical Service Utilization by Encouraging Vaccines: Randomised Controlled Trial", *American Journal of Preventive Medicine*, Vol. 27, No. 4, pp. 284-288.
- Bodgers, R., *et al.* (eds.) (2005), Final Report of the HALE (Healthy Ageing: a Longitudinal Study in Europe) Project, RIVM report No: 260853003/2005, Bilthoven.
- Callaghan, P. (2004), "Exercise: a Neglected Intervention in Mental Health Care?" *Journal of Psychiatric and Mental Health Nursing*, Vol. 11, No. 4, pp. 476-483.
- Canadian Council on Learning (2007), *Health Literacy in Canada: Initial Results from the International Adult Literacy and Skills Survey*, Ottawa.
- Cattan, M., *et al.* (2005), "Preventing Social Isolation and Loneliness among Older People: a Systematic Review of Health Promotion Interventions", *Ageing and Society*, Vol. 25, pp. 41-67.
- Chaloupka, F. and K. Warner (2000), "The Economics of Smoking", in A. Cuyler and J. Newhouse (eds.), *Handbook of Health Economics*, Vol. 1B, Elsevier Science, Amsterdam, pp. 1539-1627.
- Cohen, J., *et al.* (2008), "Does Preventive Care Save Money? Health Economics and the Presidential Candidates", *The New England Journal of Medicine*, Vol. 358, No. 7, pp. 661-663.
- Commission of the European Communities (CEC) (2002), "Europe's Response to World Ageing, Promoting Economic and Social Progress in an Ageing World: A Contribution of the European Commission to the Second World Assembly on Ageing", Communication from the Commission to the Council and the European Parliament, COM(2002) 143 final.
- Conn, V.S., *et al.* (2002), "Interventions to Increase Physical Activity among Ageing Adults: a Meta-Analysis", *Annals of Behavioural Medicine*, Vol. 24(3), pp. 190-200.
- CSDH (2008), "Closing the Gap in a Generation: Health Equity Through Action on the Social Determinants of Health", *Final Report of the Commission on Social Determinants of Health*, World Health Organization, Geneva.

- Dave, D., *et al.* (2007), “The Effects of Retirement on Physical and Mental Health Outcomes”, *Andrew Young School of Policy Studies Research Paper Series*, Working Paper 07-35.
- Eakin, E.G., *et al.* (2000), “Review of Primary Care-Based Physical Activity Intervention Studies: Effectiveness and Implications for Practice and further Research”, *Journal of Family Practice*, Vol. 49(2), pp. 158-168.
- Economic Policy Committee (EU) (2006), “Impact of Ageing Populations on Public Spending on Pensions, Health and Long-Term Care, Education and Unemployment Benefits for the Elderly: Summary Report”, Brussels,  
[http://ec.europa.eu/economy\\_finance/epc/documents/2006/ageingsummary\\_en.pdf](http://ec.europa.eu/economy_finance/epc/documents/2006/ageingsummary_en.pdf)
- Elkan R., and D. Kendrick (2004), *What is the Effectiveness of Home Visiting or Home-Based Support for Older People?* Copenhagen, WHO Regional Office for Europe (Health Evidence Network Report; [www.euro.who.int/Document/e83105.pdf](http://www.euro.who.int/Document/e83105.pdf), accessed 07 February 2008.
- EU-DG ECFIN (2006), “The Impact of Ageing on Public Expenditure: Projections for the EU25 Member States on Pensions, Healthcare, Long-Term Care, Education and Unemployment Transfers (2004-2050)”, *DG ECFIN Special Report*, No. 1/2006.
- Fries, J.F. (1997), “Exercise and the Health of the Elderly”, *American Journal of Geriatric Cardiology*, Vol. 6(3), pp. 24-32.
- Gillies, P. (1998), “Effectiveness of Alliances and Partnerships for Health Promotion”, *Health Promotion International*, Vol. 13, No. 2, Oxford University Press, pp. 99-120.
- Ginsberg, G.M., *et al.* (2004), “Prevention, Screening and Treatment of Colorectal Cancer – A Global and Regional Generalised Cost Effectiveness Analysis”, World Health Organisation, Geneva (unpublished).
- Grammenos, S. (2005), “Implications of Demographic Ageing in the Enlarged EU in the Domains of Quality of Life, Health Promotion and Health Care”, *Centre for European Social and Economic Policy (CESEP)*, Brussels.
- Greenwood, D.C., *et al.* (1996), “Coronary Heart Disease: a Review of the Role of Psychosocial Stress and Social Support”, *Journal of Public Health Medicine*, Vol. 18(2), pp. 221-231.
- Groot, M.T., *et al.* (2006), “Costs and Health Effects of Breast Cancer Interventions in Epidemiologically Different Regions of Africa, North America, and Asia”, *Breast Journal*, Vol. 12(1), pp. S81-S90.
- Hagenfeldt, K., *et al.* (2003), “Osteoporosis – Prevention, Diagnosis and Treatment”, *Swedish Council on Technology Assessment in Health Care*, Report no. 165.
- Hillsdon, M., *et al.* (1995), “Randomised Control Trials of Physical Activity Promotion in Free Living Populations: a Review”, *Journal of Epidemiology and Community Health*, Vol. 49, pp. 448-453.
- Hofmarcher, M., *et al.* (2007), “Improved Health System Performance through Better Care Co-ordination”, *OECD Health Working Papers*, No. 30, OECD, Paris.
- Hokby A., *et al.* (1996), “A Community Intervention Program targeting the Elderly in Stockholm County”, *Scandinavian Journal of Rheumatology Supplement*, Vol. 103, pp. 115-118.

- Institute of Medicine (2006), *Preventing Medication Errors*,  
[www.iom.edu/Object.File/Master/35/943/medication%20errors%20new.pdf](http://www.iom.edu/Object.File/Master/35/943/medication%20errors%20new.pdf),  
accessed 6 February 2008
- Lafortune, G. and G. Balestat (2007), “Trends in Severe Disability among Elderly People: Assessing the Evidence in 12 OECD Countries and the Future Implications”, *OECD Health Working Papers*, No. 26, OECD, Paris.
- Lawlor, D. and S. Hopker (2001), “The Effectiveness of Exercise as an Intervention in the Management of Depression: Systematic Review and Meta-Regression Analysis of Randomised Controlled Trials”, *British Medical Journal*, Vol. 322, pp. 1-8.
- Mackenbach, J. (2006), *Health inequalities: Europe in profile*, UK Presidency of the EU 2005, London.
- Mackenbach, J., *et al.* (2008), “Socioeconomic inequalities in health in 22 European countries”, *The New England Journal of Medicine*, Vol. 358, pp. 2468–81.
- Manini, T.M., *et al.* (2006), “Daily Activity, Energy Expenditure and Mortality among Older Adults”, *JAMA*, Vol. 296, pp. 171-179.
- Matson-Koffman, D., *et al.* (2005), “A Site Specific Literature Review of Policy and Environmental Interventions that Promote Physical Activity and Nutrition for Cardiovascular Health: what works”, *American Journal of Health Promotion*, Vol. 19(3), pp. 167-193.
- McMurdo, M. (2000), “A Healthy Old Age: Realistic or Futile Goal?” *British Medical Journal*, Vol. 321, pp. 1149-1151.
- Michaud, P-C., *et al.* (2007), “Cross-Country Variation in Obesity Patterns among Older Americans and Europeans”, *Forum for Health Economics & Policy*, Vol. 10, Issue 2, Art. 8.
- Muldoon, M.F., *et al.* (1990), “Lowering Cholesterol Concentrations and Mortality: a Quantitative Review of Primary Prevention Trials”, *British Medical Journal*, Vol. 301 (6747), pp. 309-314.
- Munro, J., *et al.* (1997), “Physical Activity for the over-65s: Could it be a Cost-Effective Exercise for the NHS”, *Journal of Public Health Medicine*, Vol. 19, No. 4, pp. 397-402.
- Munro, J., *et al.* (2004), “Cost Effectiveness of a Community Based Exercise Programme in Over 65 Year Olds: a Cluster Randomised Trial”, *Journal of Epidemiology and Community Health*, Vol. 58(12), pp. 1004-1010.
- Nichol, K.L., *et al.* (2007), “Effectiveness of Influenza Vaccine in the Community-Dwelling Elderly”, *The New England Journal of Medicine*, Vol. 357, No. 14, pp. 1373-1381.
- OECD (1998), *Maintaining Prosperity in an Ageing Society*, OECD, Paris.
- OECD (2006), *Live Longer, Work Longer*, OECD, Paris.
- OECD (2007), *Pensions at a Glance*, OECD, Paris.
- OECD (2008), “Measuring Inequalities in Health Status, Access and Financing: Options for OECD Work”, Internal document

- OECD (2009), “Measuring Disparities in Health Status and in Access and Use of Health Care: Progress and next Steps”, forthcoming.
- Oliveira Martins, J. and C. de la Maisonneuve (2006), “The Drivers of Public Expenditure on Health and Long-Term Care: an Integrated Approach”, *OECD Economic Studies*, No. 42, OECD, Paris.
- Peel, N.M., *et al.* (2005), “Behavioural Determinants of Healthy Ageing”, *American Journal of Preventive Medicine*, Vol. 28(3), pp. 298-304.
- Pinquart, M. and S. Sörensen (2001), “How Effective are Psychotherapeutic and other Psychosocial Interventions with Older Adults?” *Journal of Mental Health and Ageing*, Vol. 7(2), pp. 207-243.
- Province, M., *et al.* (1995), “The Effects of Exercise on Falls in Elderly Patients – a pre-planned Meta-Analysis of the FICSIT Trials”, *JAMA*, Vol. 273(17), pp. 1341-1347.
- Public Health Agency of Canada (2005), *Report on Seniors’ Falls in Canada*, Minister of Public Works and Government Services, Canada.
- Putnam, R.D. (1993), “The Prosperous Community: Social Capital and Public Life”, *The American Prospect*, Vol. 4, No. 13.
- Putnam, R.D. (1996), “The Strange Disappearance of Civic America”, *The American Prospect*, Vol. 7, No. 24.
- Riboli, E. and T. Norat (2003), “Epidemiologic Evidence of the Protective Effect of Fruit and Vegetables on Cancer Risk”, *American Journal of Clinical Nutrition*, Vol. 78, Suppl. 3, pp. 559S-569S.
- Rizzo, J., *et al.* (1996), “The Cost-Effectiveness of a Multifactorial Targeted Prevention Program for Falls among Community Elderly Persons”, *Medical Care*, Vol. 34(9), pp. 954-969.
- Robertson, M.C., *et al.* (2001a), “Effectiveness and Economic Evaluation of a Nurse Delivered Home Exercise Programme to Prevent Falls. 1: Randomised Controlled Trial”, *British Medical Journal*, Vol. 322(7288), pp. 697-701.
- Robertson, M.C., *et al.* (2001b), “Effectiveness and Economic Evaluation of a Nurse Delivered Home Exercise Programme to Prevent Falls. 2: Controlled Trial in Multiple Centres”, *British Medical Journal*, Vol. 322(7288), pp. 701-704.
- Russell, L.B. (2007), “Prevention’s Potential for Slowing the Growth of Medical Spending”, *National Coalition on Health Care*, Washington, [www.nchc.org/nchc\\_report.pdf](http://www.nchc.org/nchc_report.pdf)
- Sahlén, K.-G., *et al.* (2006), “Is Prevention Profitable after the Age of 65? Preventive Care Home Visits in Nordmaling”, SNIPH, Report Number R-2006(19).
- Sassi, F. and J. Hurst (2008), “The Prevention of Lifestyle-Related Chronic Diseases: an Economic Framework” *OECD Health Working Papers*, No. 32, OECD, Paris.
- Scott, T.L., *et al.* (2002), “Health Literacy and Preventive Health Care Use among Medicare Enrolees in a Managed Care Organization”, *Medical Care*, Vol. 40(5), pp. 395-404.

- Sirven, N. and T. Debrand (2008), "Promoting Social Participation for Healthy Ageing: a Counterfactual Analysis from the Survey of Health, Ageing and Retirement (SHARE)", IRDES Working Paper No 7.
- Swedish National Institute of Public Health (SNIPH) (2007), *Healthy Ageing: a Challenge for Europe*, Brussels [Stockholm], [www.healthyageing.nu](http://www.healthyageing.nu)
- The Health Gain Project (2004), *Public Health Economy and Resource Allocation*, Göteborg, cited in SNIPH (2007), [www.vgregion.se/upload/Folkhälsa/hälsovinstprojektet.pdf](http://www.vgregion.se/upload/Folkhälsa/hälsovinstprojektet.pdf)
- Thorpe, K.E. and D.H. Howard (2006), "The Rise in Spending among Medicare Beneficiaries: The Role of Chronic Disease Prevalence and Changes in Treatment Intensity", *Health Affairs*, 22 August.
- Tsai, S., *et al.* (2005), "Age at Retirement and Long-Term Survival of an Industrial Population: Prospective Cohort Study", *British Medical Journal*, Vol. 331:995.
- Turner, A. (Lord) (2007), "Population Ageing or Population Growth: What should we worry about?" *The WDA – HSG Discussion Paper Series on Demographic Issues*, No. 2007/5.
- Wagner, E.H., *et al.* (2001), "Improving Chronic Illness Care: Translating Evidence into Action", *Health Affairs* (Millwood), Vol. 20(6), pp. 64-78.
- Walters, R., *et al.* (1999), *Proven Strategies to Improve Older People's Health*, A Eurolink Age Report for the European Commission, Brussels.
- Wheeler, J.A., *et al.* (1998), "The Beneficial Effects of Volunteering for Older Volunteers and the People they Serve: a Meta-Analysis", *International Journal of Ageing and Human Development*, Vol. 47(1), pp. 69-79.
- WHO (2002), *Active Ageing: A Policy Framework*, Geneva.
- WHO (2008), *MPOWER, WHO Report on the Global Tobacco Epidemic*, Geneva.
- Wilson, C. and K. Datta (2001), "Tai Chi for Prevention of Fractures in a Nursing Home Population: An Economic Analysis", *Journal of Clinical Outcomes Management*; Vol. 8, pp. 19-27.
- Ytterstad, B. (1996), "The Harstad Injury Prevention Study: Community Based Prevention of Fall-Fractures in the Elderly Evaluated by means of a Hospital Based Injury Recording System in Norway", *Journal of Epidemiology and Community Health*, Vol. 50, pp. 551-558.

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