Are Older People Responsible for High Healthcare Costs?

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The cost of public healthcare is continuously rising and 15 percent of the European population aged 65 and over consumes 60 percent of healthcare resources. In OECD countries, the over 65 age group accounts for 40 to 50 percent of healthcare spending and their per capita healthcare costs are three to five times higher than those under 65. Projections for Europe forecast that the population over 65 years old will increase from around 16 in 2000 to 23 in 2025 and to 30 percent in 2050, and, that healthcare costs are likely to grow at an average annual rate of 5 to 6 percent, most of this cost attributed to increasing ageing. Public expenditures on healthcare are projected to increase by 1 to 2 percent of GDP due to ageing in most OECD member states between now and 2050 – a relatively small amount in comparison to the total increases since 1950. In addition, if it becomes possible to maintain the proportion of a lifetime spent in good health as overall life expectancy increases, these additional costs could be halved (Liddle and Lerais 2007).

Table 1 is representative of the type of data responsible for propagating the belief that the increased numbers of older people are responsible for enormous (occasionally termed "catastrophic") increases in healthcare costs. There is no question that the number of old people will increase as long as life expectancy increases. Yet economic analyses have shown that the expected increase in per person health expenditure caused by greater longevity will be less than expected because of the concentration of expenditures at the end of life rather than during extra years of a relatively healthy life (Yang, Norton and Stearns 2003). Other researchers have shown that while both age and proximity to death have significant effects on quarterly hospital costs, age effects are small compared with the tripling of quarterly costs that occurs with approaching death in the last year of life. The 5 percent of patients in the last year of life generated approximately half of the hospital expenditures for those aged 65 and over (Seshamani and Gray 2002). Of course, the cost of nursing homecare increases with age but because

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Table 1

National healthcare costs in 1994 and projections for 2015 by age and healthcare sector for the Netherlands

	Age group				Total		Annual growth rate %
	0–64		>65				
	million euros	%	million euros	%	million euros	%	
1994							
Acute care	4,560	54.9	3,742	45.1	8,302	100	
Long-term care	3,129	38.3	5,501	61.7	8,180	100	
Total	7,689	46.7	8,793	53.3	16,482	100	
2015-I							
Acute care	5,105	49.4	5,232	50.6	10,337	100	1.1
Long-term care	3,298	31.5	7,175	68.5	10,473	100	1.2
Total	8,402	40.4	12,408	59.6	20,810	100	1.1
2015-II							
Acute care	6,101	40.5	8,977	59.5	15,078	100	2.9
Long-term care	7,058	51.2	6,724	48.8	13,781	100	2.5
Total	13,158	45.6	15,701	54.4	28,859	100	2.7

Note: 2015-I = demographic projection; 2015-II = demographic projection + age-specific trends.

Source: Polder, Bonneux, Meerding and Van der Maas (2002).

Table 2

Share of population and hospital expenditures by age group, 2002 and 2026, England

	0–4	5–15	16–44	45–64	65–74	75–84	85+
% of population							
2002	5.8	14.0	40.9	23.8	8.1	5.5	2.0
2026	5.4	11.9	36.0	26.2	10.4	7.3	2.7
%-point change	– 0.4	– 2.1	– 4.9	+ 2.4	+ 2.3	+ 1.8	+ 0.7
% of decedents							
2002	0.2	0.2	3.5	13.1	18.7	33.7	30.7
2026	0.1	0.1	2.5	12.0	17.1	32.9	35.2
%-point change	– 0.1	– 0.1	– 1.0	– 1.1	– 1.8	– 0.8	+ 4.5
% of expenditures							
2002	7.9	3.4	24.9	20.1	13.1	18.4	12.5
2026	7.3	2.8	21.3	21.9	13.7	19.0	14.0
%-point change	– 0.6	– 0.6	– 3.6	+ 1.8	+ 0.6	+ 0.6	+ 1.5

Source: Seshamani and Gray (2002).

Table 3

Share of population and hospital expenditures attributable to people in their last year of life, 2002 and 2026, England

Age group	2002		2026	
	Share of age group in last year of life (%)	Share of expenditures (%)	Share of age group in last year of life (%)	Share of expenditures (%)
0–4	0.03	1.54	0.02	1.02
5–15	0.01	0.65	0.01	0.44
16–44	0.09	3.83	0.07	3.10
45–64	0.56	18.97	0.47	16.48
65–74	2.35	43.06	1.68	36.81
75–84	6.24	55.94	4.63	51.44
85+	15.90	64.63	13.47	63.04
All ages	1.02	28.98	1.02	27.98

Source: Seshamani and Gray (2002).

Table 4

Average number of hospital days per year according to status, Germany

Age group	Survivors	Persons in their 3rd last year of life	Persons in their 2nd last year of life	Persons in their last year of life
–24	0.8	9.3	11.2	24.2
25–34	0.9	13.4	12.0	28.6
35–44	1.1	13.7	22.5	34.7
45–54	1.9	11.0	15.5	39.2
55–64	2.3	6.9	12.4	40.6
65–74	3.0	9.0	12.4	36.4
75–84	4.8	8.5	11.4	31.8
85+	5.4	5.1	6.3	23.2

Source: Busse, Krauth and Schwartz (2002).

hospital costs predominate in total health expenditures, the related research still finds a concentration of costs towards the end of life. A number of empirical studies confirm the findings of high levels of healthcare resources mainly occurring in the 12–18 months before an individual's death (Brockmann 2002; Dixon et al. 2004).

Individually older patients actually consume fewer healthcare resources than younger patients since, mainly because of age discrimination, they are less likely to receive intensive care or to undergo surgery or complex interventions. In fact, the most expensive patients are the ones who die young. If only the last year of life is counted, the 45–64 year olds have the highest number of hospital days; and if the last three years are taken into account, the 35–44 year olds use the most hospital days (Busse, Krauth and Schwartz 2002). Overall, it seems that *the negative image of* the "expensive older patient" may be a myth that needs to be dispelled (Zwifel, Felder and Meiers 1999; Jacobzone 2002).

Table 5

Share of persons admitted to hospital at least once a year according to status (%), Germany

Age group	Survivors	Persons in their 3rd last year of life	Persons in their 2nd last year of life	Persons in their last year of life
–24	7.7	17.9	32.1	56.0
25–34	7.5	25.0	28.6	50.0
35–44	7.7	34.1	30.6	59.6
45–54	10.2	24.5	38.0	74.6
55–64	12.5	28.3	35.2	80.2
65–74	14.9	30.6	39.3	81.2
75–84	20.2	34.0	37.5	82.4
85+	20.6	21.6	27.6	70.2

Source: Busse, Krauth and Schwartz (2002).

If, however, the population is not simply getting older, as assumed in the Eurostat demographic projections, but also getting healthier, there will be improvement in life expectancy in terms of years lived in good health and health costs will be squeezed within the very few last years of life ("compressed" morbidity). Also New Zealand calculations suggest that even plausible modest improvements in older persons' health could offset about one-third of the extra healthcare costs imposed by population aging (Bryant and Sorenson 2006). This highlights the importance of investing in population health as a means of mitigating future economic impacts of ageing populations (Suhrcke et al. 2005).

It must be pointed out that the examination of healthcare costs as well as projections about such costs are primarily focused on widely available hospitalization costs. The calculation of healthcare costs, however, cannot be separately examined from social care costs, especially when dealing with aging-related costs. Wanless (2002) correctly argues that any future reviews of aging and health costs should fully integrate modeling and analysis of health and social care. Indeed, even underestimated available data from Britain show that the ageing of the population is a more important cost pressure for social care than for healthcare.

While there is considerable agreement that health costs are increasing in Europe as well as in North America, the contention that this increase is primarily due to increasing population aging is less solid. Other important factors besides aging play very important roles in increasing the cost of healthcare. These other factors can be grouped in four distinct categories: (a) unhealthy lifestyles: smoking, obesity and overweight and lack of exercise; (b) poor quality of healthcare: lack of primary and secondary prevention, adverse drug reactions and other preventable medical injuries, and age and gender discrimination in healthcare delivery; (c) lack of adequate rehabilitation care and social care; and (d) a number of non demographic expenditure drivers, such as higher wages for health professionals, rising administrative costs, new treatments because of new medical technology and new drugs and better coverage of the population (Bryant and Sorenson 2006). We shall examine all these additional factors in some detail.

Unhealthy lifestyles

There is considerable evidence that unhealthy lifestyles such as smoking, lack of physical activity and obesity can have a major impact on the required level of healthcare resources (Wanless 2002). The calculations healthcare costs caused by smoking in Germany

Table 6

Number of hospital days per year of persons admitted to hospital at least once according to status, Germany

Age group	Survivors	Persons in their 3rd last year of life	Persons in their 2nd last year of life	Persons in their last year of life
–24	10.8	52.1	34.8	56.0
25–34	12.4	53.7	41.9	50.0
35–44	14.5	40.3	30.6	59.6
45–54	18.3	45.0	38.0	74.6
55–64	18.3	24.4	35.2	80.2
65–74	20.3	29.4	39.3	81.2
75–84	23.8	25.1	37.5	82.4
85+	26.2	23.4	27.6	70.2

Source: Busse, Krauth and Schwartz (2002).

Table 7

Costs of smoking in Germany in 1993 (in million euros)*

Smoking attributable costs	Neoplasms	Cardiovascular diseases	Respiratory diseases	Total costs
Direct costs				
Prescribed drugs	7.7	784.3	316.5	1,108.0
Outpatient care	56.2	756.7	329.3	1,193.9
Acute hospitalization	303.7	1,361.1	498.0	2,162.8
Rehabilitation	50.1	177.9	96.1	324.2
Total	417.7	3,079.5	1,239.9	4,737.1
Indirect costs				
Mortality	2,013.5	1,816.1	237.2	4,173.7
Morbidity	1,194.4	4,196.7	2,972.1	8,363.2
Work lost days	161.1	1,290.0	2,006.8	3,457.9
Early retirement	1,033.3	2,906.7	965.3	4,905.3
Total	3,208.4	6,012.8	3,208.9	12,537.4
Total costs	3,626.1	9,092.3	4,449.3	17,274.5

* Calculated by stratifying smoking prevalence in nine age groups.

Source: Welte, König and Leidl (2000).

show high direct and indirect costs involved for all age groups (Welte, Konig and Leidl 2000).

There is also evidence that obesity has roughly the same association with chronic health conditions as does twenty years' aging from 30 to 50, this association being mirrored in healthcare utilization. Namely, obesity is associated with a 36 percent increase in inpatient and outpatient spending and a 77 percent increase in medications. In the case of current smokers, the increase in inpatient and outpatient costs is 21 percent and 28 percent the increase of medications costs (Sturm 2002). An American study also concluded that while in all age groups obesity increased direct healthcare costs by 54 percent, in the age group 65–74 the increase amounts to 104 percent (Thompson 2008).

It has been estimated that the present value of the expenditure savings for the Australian government would provide savings of about 2 US dollar for every 1 US dollar of expenditure in public health programmes to reduce tobacco consumption (Suhrcke et al. 2005). In Europe, there have been relatively few economic evaluations of preventive activities, such as the cost effectiveness of the smoking cessation programmes in Britain: the average cost per life saved was 684 British pounds and the estimate of cost-effectiveness rose to 2693 British pounds (Godfrey et al. 2005).

Poor quality of healthcare

While adverse drug reactions (ADR) have negative health consequences for all ages, they occur much more often among older persons who more frequently take many types of medicines than do younger persons. It has been shown that the risk of ADR is related to the number of medicines taken and that nursing home patients appear to be particularly vulnerable to ADR. In addition, around 7 percent of all hospital admissions are related to ADR, although as many as 80 percent of these reactions are preventable as they are due to a drug treatment procedure inconsistent with present-day knowledge of good medical practice. However, in the case of older patients the knowledge of pharmacological principles and the way that ageing affects drug kinetics and response is also necessary. Furthermore, dose-related failure of existing therapy to manage the condition adequately (because of age discriminatory healthcare) may be one of the most important reasons for hospitalization of older people (Routledge, O' Mahony and Woodhouse 2003). While the majority of patients hospitalized with ADR recover, they may need hospitalization of several days and from 1.5 to 3 percent of them die. ADR leading to hospitalization represents a cost up to 466 million British pounds annually for the British National Health System that can be significantly reduced with better healthcare delivery (Pirmohamed et al. 2004).

Other preventable medical injuries are iatrogenic injuries and include hospital-acquired nosocomial infections, pressure sores and surgical and peri-operative complications. Older patients are much more vulnerable to all these medical injuries partly due to the aging process and partly to inadequate care provided. These injuries are usually responsible not only

for older patients' deteriorating health but also for increasing the cost of required healthcare in terms of hospitalization and medical interventions. Considerable cost reductions appear to be possible if principles of error prevention and geriatric research are applied in all care settings (Rothschild, Bates and Leape 2000).

Older patients suffering more often with chronic illnesses (e.g. heart failure) than younger persons require expensive re-hospitalizations because there is no comprehensive discharge planning with post-discharge support. European and North American studies have shown that expensive re-hospitalizations can be reduced if patients are well informed about their illness and about self-management, and are provided with the follow-ups that facilitate their transition to home care. While the mean cost of such interventions is low, the mean annual reduction in overall costs (because of the reduction of re-hospitalization rate) appears to be rather considerable (Phillips et al. 2004).

In Britain more than 30 percent of people over 65 years old living in the community fall every year, often more than once, and the risk of falling and of fatality increases with age (Jensen et al. 2002). While only 3 to 10 percent of these falls results in serious injury, even for those who do not sustain any major physical injury as a result of a fall, the psychological trauma or fear of falling itself may lead to self-imposed reduction in physical activity (Close 2001). Because of the frequency of falls and their serious health and mobility consequences for older people, resulting health and social care costs are significant. Tables 8 and 9 present the costs of such falls in Britain.

There is considerable evidence provided by medical research according to which, in the case of several life-threatening conditions (such as acute myocardial infarction, heart failure, or cancer), older patients are significantly less often provided with appropriate and effective medical treatment than younger patients suffering from the same conditions. In Sweden, for example, only a quarter of all heart failure patients are treated with ACE inhibitors – few of them being older patients, despite the fact that they constitute the most effective as well as cost-effective treatment of the condition (Ryden-Bergsten and Andersson 1999). The situation is, however, perpetuated for several reasons. First, older people are underrepresented in randomized, controlled treatment trials and in this way there is no evidence whether or not invasive medical interventions and particular drugs are effective for older people (Shah, 2004). Second, in the absence of clear evidence of effectiveness in the case of treating older people, physicians tend to avoid undertaking possibly risky medical interventions, while medical insurance companies attempt to save extra expenses caused by such supposedly risky treatments. Because of the combination of all these factors, age discrimination in older persons' access to effective healthcare continues (Safiliou-Rothschild 2007).

There has recently been considerable debate in Europe and the United States as to whether or not it is ethical to ration medical treatment and healthcare on the basis of age and cost benefit considerations (Williams 1997; Robinson 2002). The prevailing themes have been the perception of lesser cost-effectiveness of older people's healthcare and the preference for greater investment in younger people. Such age rationing seemed to take place more often when healthcare modalities, such as dialysis or transplantation, were scarce or were perceived to be scarce (Killner 1988; Rothenberg 2005). The scarcity issue was defended because it was argued that the healthcare needs of younger people have priority over those of old people since the use of medical care by younger people is more effective in preserving life and in maintaining normal function than when used by old people. However, there is no guarantee that

Table 8

Costs of accidental falls per 10,000 people in thousand British pounds*

Age group	Fall on same level from slip/trip/stumble	Fall on or from stairs or steps	Fall from one level to another	Unspecified fall	Total
60–64	65.4	30.9	80.9	101.9	279.2
65–69	173.1	74.5	20.8	319.0	587.4
70–74	163.8	63.3	23.5	180.9	431.5
= or >75	468.5	60.5	138.1	838.9	1,496.1
Mean	248.2	57.2	77.2	427.4	810.0

* Incidence data are from 1999 and costs are expressed in 2000 British pounds.

Source: Scuffham, Chaplin and Legood (2003).

Table 9

Breakdown of costs of accidental falls by resource use (in % of total costs for each age group)*

	60–64	65–69	70–74	= or >75	Total
Ambulance journey	5.2	2.6	4.5	3.4	3.5
Accident and emergency attendance	6.4	3.2	5.6	4.1	4.3
Hospital inpatient					
Outpatient attendance	71.8	58.6	61.2	42.6	49.4
General practice consultations	4.4	2.2	3.0	1.2	1.8
Long-term care	0.3	0.2	0.2	0.2	0.2
Total	12.0	33.2	25.5	48.5	40.8
	100.0	100.0	100.0	100.0	100.0

* Incidence data are from 1999 and costs are expressed in 2000 British pounds.

Source: Scuffham, Chaplin and Legood (2003).

the denial of appropriate medical care to older people will be tied directly to redistribution of this care to afflicted younger age groups (Battin 1987).

While at present, clear-cut discussions of rationing of expensive medical treatment of older persons have become less frequent, the concept and the practice have not disappeared; they have often gone underground. Thus, the analysis of data from German hospitals suggests that healthcare is informally rationed according to the age and sex of the patient (Brockmann 2002) and a similar type of rationing has been reported regarding the treatment of angina in Scotland (Murphy et al. 2006). Similarly in Italy, the age and sex rationing was evident in lesser hospital expenditure for women than for men and for older patients-over 65 than for younger ones (Gabriele et al. 2006).[1]

Inadequate rehabilitation and social care services

In general older patients have less easy access to rehabilitation services (Cottin et al. 2004) and to long-term care. In the Czech Republic, for example, while there is an abundance of acute-care hospital beds, there are few beds for rehabilitation and the long-term care. The main problem of care for old and chronically ill people is not only the absence of geriatric departments in most hospitals but also the lack of capacities for rehabilitation and continuing care. After old people are discharged from hospitals and go home, they are still in an unstable condition and need long-term care that is not available. For this reason, they soon end up back in hospital (Holmerova 2004).

The French experience seems to be similar – old people who lose their autonomy have great difficulty finding nursing services and assistance at home that allow them to continue living at home but always can find place in hospitals when they need treatment for an acute phase of their illness (Doucet, 2002). Furthermore, Arfeux-Vaucher et al. (2006) suggest that older people (and especially those over 80 years old) resort to emergency and/or to hospitalization because available social services are not able to take care of them so they can stay at home or because there is no place for them in rehabilitation or geriatric units. In this way, health statistics show high numbers of older people without acute health problems in emergency services and in hospitals and doctors hurry to discharge them in order to "free beds".

Non-demographic expenditure drivers

Economic analyses undertaken in New Zealand concluded that non-demographic (rather than demographic) factors dominate the expenditure growth in healthcare (Bryant and Sorenson 2006). Firstly, when a country's economy is doing well, governments may be willing to spend more on health and there is considerable pressure for the wages of health professionals to increase. Secondly, different types of new medical technology that can either help decrease or increase healthcare costs. They can decrease healthcare costs when they provide more effective screening, diagnosis and treatment of diseases; or when they help decrease disability and the need to use expensive medical treatments and pharmaceuticals. On the other hand, new medical innovation can increase healthcare costs by increasing

[1] Widespread age rationing has been reported, for example, (a) in the use of statins for the secondary prevention of coronary heart disease; (b) in the revascularization of older hospital patients with ischaemic heart disease where an age-related selection bias leads to fewer referrals for exercise tolerance testing and cardiac catheterization and angiography despite indications that such interventions are equally beneficial for them as for younger patients; (c) in the treatment of cancer; (d) in the exclusion of older people from dialysis; and (e) in the low percentage of patients over 60 years having access to renal transplantation despite the fact that such transplantation can be performed safely and successfully in patients with end-stage renal disease who are 60 years and older.

the life expectancy of people with different chronic or multiple health conditions that require long-term treatment and medication; or by propagating a more expensive technology that does not offer advantages over the less expensive existing technology (European Commission 2007). Thirdly, healthcare costs for people over 65 years increase because of the introduction of new and more expensive drugs and shifts in dosages within each therapeutic class. In Canada these shifts were found to be responsible for a 90 percent increase in per capita healthcare costs between 1985 and 1999 (Evans et al. 2001). Fourth, electronic health records and information-sharing technologies, which can greatly boost productivity, are inadequately used. There is little doubt that widespread computerization could greatly cut healthcare cost by reducing the paperwork burden of health personnel and hospitals, by heading off medication errors (and adverse drug reactions), and by reducing the costly repetition of diagnostic tests as patients change doctors (New York Times Editorial 2007). It has been calculated that potential financial benefits of the widespread adoption of electronic medical record systems could eventually save more than 80 million US dollars annually. Furthermore, health information technology that enables prevention and management of chronic disease could eventually double these savings while increasing health and other social benefits (Hillestad et al. 2005).

Conclusion

In conclusion, it seems that attributing increasing healthcare costs to increased aging of the population is an easy scapegoat solution. Rising healthcare costs have many other significant expenditure drivers. Furthermore, healthcare costs cannot be measured only by health costs. It is necessary to examine different types of social care costs together with direct healthcare costs.

There is considerable evidence pointing to other important factors responsible for high health costs that are also responsible for older persons' relatively poor quality of healthcare. The examined evidence also suggests that the key to lowering future healthcare costs lies in the improvement of healthcare system in general and particularly the improvement of older persons' healthcare.

Despite the existence of some hard data concerning the expected reduction of healthcare costs through the improvement of lifestyles, the improvement of healthcare system and its organization and implementation style, there are no overall economic analyses and projections taking all of these possible reductions into consideration when projecting future healthcare costs. And social costs incurred in the care of older persons are not integrated in these projections.

Of course, there are good reasons for this lack of systematic economic analysis and projections. Relevant data are not always complete or available for many countries and there are many ever-changing dynamic factors that can alter thoroughly these calculations. For instance, biotechnologies are revolutionizing the ageing experience by offering early diagnoses, new treatments such as regenerative and genetic interventions and ultimately disease prevention.

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