

Chapter 9: Economic, social and political implications

Vignette

Throughout his entire professional career the Minister of Health had been fully aware of the determinants of health identified by Lalonde in Canada in the 1970s. His training as a specialist in preventive medicine and as a GP had given him a good perspective on the health system as a whole. However, from the moment he started working in the field of healthcare management, he had been burdened by the legacy of his predecessors: he was unable to cope with the steady increase in healthcare expenditure, the pharmaceutical costs and the continual demands for new hospital services, which consumed more and more of the healthcare budget. He knew there was a need for projects that offered results based on prevention and low cost alternatives that would address chronic problems, but year on year he found he was barely able to patch over the cracks in the system.

Hampered by progressively limited budgets, he knew that it would not be long before the first alarm bells would ring, indicating that the system was reaching a point where it would cease to be sustainable.

It was necessary to outline and defend a vision which would turn the system around, at least during his mandate. As he knew that there was no magic formula to tackle the complex issues he was confronting, he decided to prioritize the management of the problems which were most prevalent, costly or severe. While doing it, he kept asking himself, "Was there any really useful way of effectively and efficiently addressing the tremendous increase in the prevalence of a range of chronic processes and the associated cost?" "To what extent could changes in policy and funding mechanisms minimize the societal burden associated with multiple chronic diseases?"

Summary

- Caring for people with chronic diseases currently consumes the largest share of the healthcare budget in most countries, regardless of their level of income, and its overall share is expected to rise significantly in the decades to come. Proportionately, people who live with multiple chronic diseases are responsible for the greatest consumption of resources.
- There is a lack of data on the economic, social and political impact of multiple chronic diseases.
- Close integration and coordination of social and health services appear to be essential to the successful management of multiple chronic diseases. However, most policy, economic and management models seem to be anchored in the past by excessive compartmentalization and a lack of dialogue across levels of care, sectors and geographic regions.
- Given the potential political and societal threat created by inappropriate handling of multiple chronic diseases represent, and the apparent failure of market forces to contain it, political intervention is justified.

Why is this topic important?

It is now obvious that the demand for health services is outstripping available resources

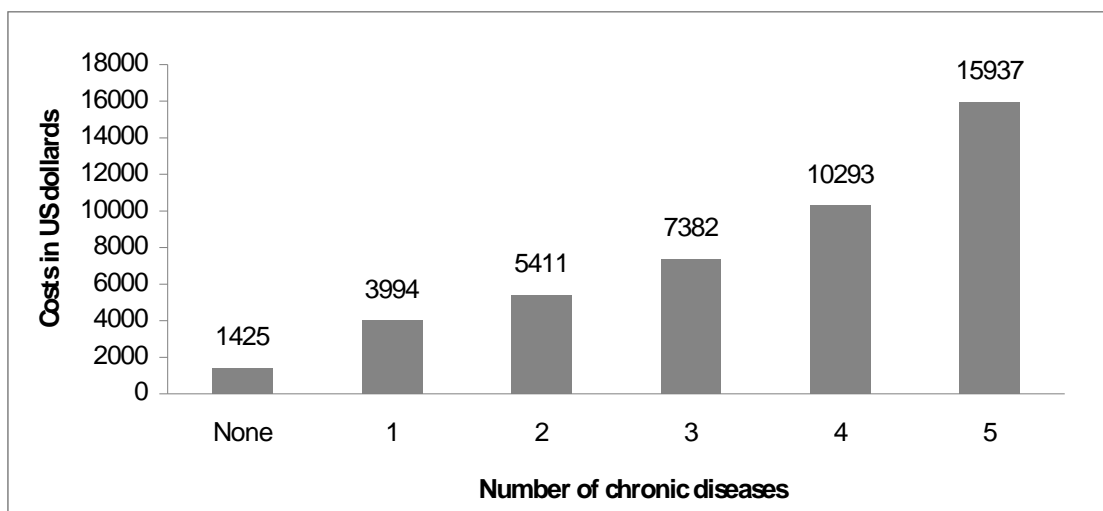
in every society in the world, threatening not only the sustainability of the health system, but that of the economy as a whole. The prolongation of life expectancy is one of the factors most closely associated with this challenge. In the United States, for instance, the cost of healthcare for people over the age of 85 is six times greater than in people aged 50 to 54 and twice as much as in the 75-79 age group (1).

There are different theories about how the increase in life expectancy relates to the burden of disease and its associated cost. The *expansion of morbidity* theory sustains that the number of years humans will live with disease will increase (2), while the *compression of morbidity* theory (3) describes a scenario in which a gain in years of healthy life will lead to a postponement in disease and cost to more advanced life stages (i.e. they are compressed into that age segment). These different views have important social, political and economic implications. If, as a society, we invest resources to prolong the life of patients, this will expand their morbidity, while if we target risk and lifestyle habits we will probably delay and contract morbidity (4).

Regardless of how societies decide to meet the challenges associated with chronic diseases, any political or economic measure would need to take into account that most of the costs are not associated with clinical services but with productivity losses (5, 6), and that expenditures on long-term care will represent an increasingly growing proportion of healthcare costs in every economy, even in the most optimistic forecast models of cost containment (7). This will likely be compounded as the number of chronic diseases in the same person increases (Figure 1) (8).

This grim picture underscores the need for a coordinated effort with a scale that dwarfs what was described in Chapter 6 in relation to the integration of health and social services.

Figure 1. Annual Expenditure on Health in People over the age of 50, depending on the Number of Chronic Diseases they present.



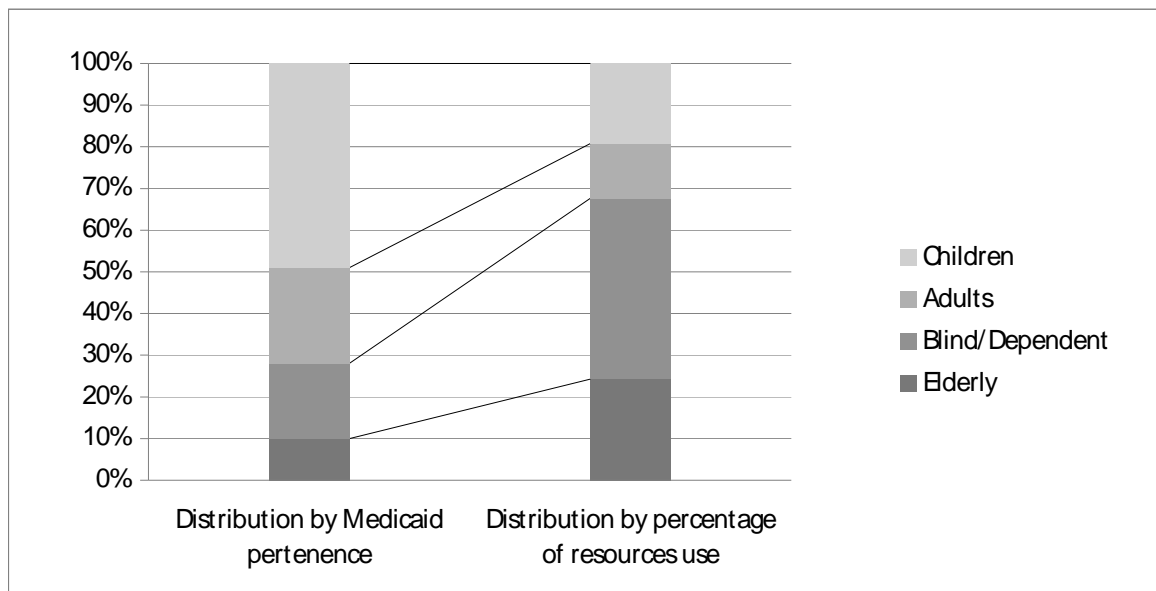
(Source: Medical Expenditure Panel Survey (MEPS): Health Care Expenses for Adults with Chronic Conditions, 2005). Available at http://www.meps.ahrq.gov/mepsweb/data_files/publications/st203/stat203.shtml)

What do we know about this topic?

To calculate the economic cost of chronic diseases requires to take into account the cost of healthcare (direct costs) and of loss of productivity and working days, as well as the burden of disability that these diseases produce (indirect costs).

In the United States the care of people with chronic disease represents 70% of healthcare expenditure (10). Although impressive, as noted above, the associated loss of productivity due to disability, unscheduled sick leave, a decrease in effectiveness in the workplace, an increase in occupational accidents, or negative impacts on work quality and customer represents an even higher financial cost to countries than those related to healthcare services. In fact, loss of productivity as a result of chronic diseases can be as high as 400% of the corresponding healthcare costs.

Figure 2. Distribution of Medicare Cover and Expenditure in Different Sectors of the Population



Source: Medicaid (11)

Dependence associated with chronic diseases

In 2006 the WHO estimated that there were 650 million people with disabilities worldwide, which constituted 10% of the population (12). In the United States, it has been shown that disabled people account for most of the Medicaid budget despite representing a minority of cases (Figure 2) (11).

Most complex chronic diseases are associated with a high level of dependence, a concept which goes beyond disability, in as much as it implies a persons need for support in order to perform ordinary everyday activities (as a result of physical, psychological, intellectual or sensory limitations). It has been estimated that people who are dependent as a result of chronic diseases represent about 2.5% of the total population (13).

A recent report by the Organization for Economic Co-operation and Development (OECD) highlights important levels of disparity among countries in relation to the amount of resources available to support dependent individuals and a dearth of data on the economic scale of the services provided by family caregivers (14). The latter poses a serious limitation to estimates of the costs associated with chronic diseases as it is widely recognized that most of the cost of caring for dependent people is assumed by family members (15). As the proportion of dependent people increases and fertility rates decrease, it is reasonable to expect a shift in this burden and its related costs from civil society to the traditional system of health and social services (16, 26).

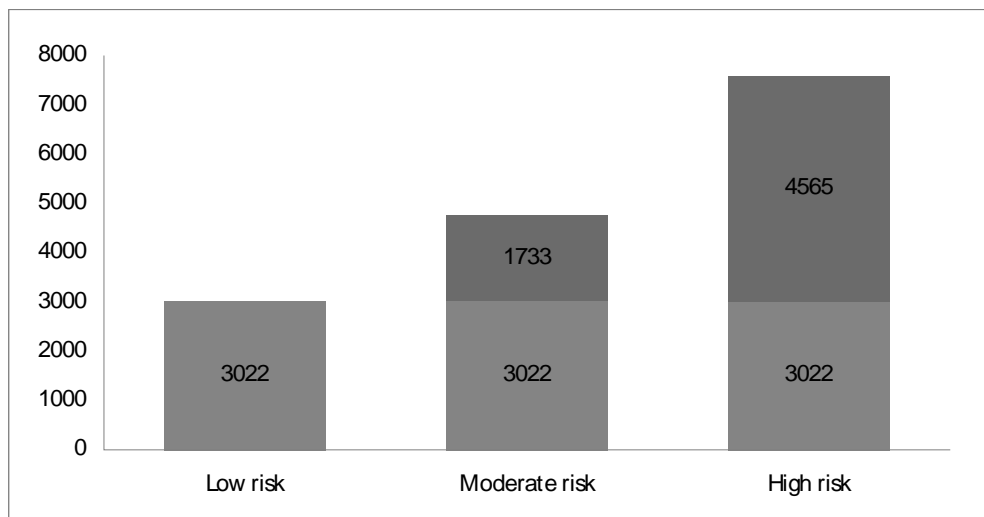
Influence of lifestyles and disease risk factors on healthcare costs

The prevalence of chronic diseases closely related to unhealthy lifestyle habits (see Chapter 2). In the United States, the estimated cost represented by these habits in 2000 was (17):

- Smoking: 75.5 billion dollars in medical costs and 92 billion dollars associated with productivity losses (18).
- Obesity and excess weight (2002): 132 billion dollars (92 billion in direct costs and 40 billion in indirect costs) (19).
- Poor nutrition: 33 billion dollars derived from medical costs and 9 billion dollars of lost productivity as a result of cancer, cerebrovascular accidents and diabetes which can be attributed to bad nutrition (www.cdc.gov/nccdphp).

One study found that these risk factors increase expenditures by 25% (20). Altogether, smoking, alcoholism, obesity and hypertension consume 1.5% of GDP in China and 2.1% in India (21). The cost increases with the number of health risk factors (Figure 3).

Figure 3. Estimated 2008 US Healthcare Cost by Number of Health Risks (figures in US dollars)



(Source: PricewaterhouseCoopers 2008 - World Economic Forum - Working Towards Wellness Business Rationale)

Healthcare costs are higher in people who are sedentary without being overweight than in obese people who are physically active (23). In Spain, two out of three children of school age and 38% of young people appear to be sedentary in their free time (22).

Interventions over lifestyles could have a big impact on expenditure on chronic diseases, essentially through weight reduction, improved nutrition, regular exercise, smoking cessation, and early diagnosis and treatment (Chapter 2). Unfortunately, most countries around the world, and even organizations such as the WHO allocate insufficient resources to health promotion and disease prevention. The latter, for instance, invested less than 8% of its budget in activities related to these two areas, and to mental health, substance abuse and the management of chronic diseases constituted (24). The early targeting of risk factors, whether through pharmacological or behavioural interventions, has many potentially positive effects, as illustrated in Table 1.

Table 1. Cost per Group of Countries per Quality-adjusted Life year of Cholesterol and Hypertension Level Control Measures

Intervention	Cost per DALY saved (dollars) per group of countries		
	Very Low Income	Low Income	Middle Income
Education and Mass-scale Measures	50-57	19-92	12-54
Voluntary reduction of salt	26-30	10-92	6-27
Compulsory salt reduction	34-78	14-114	9-15
Combination of education and compulsory salt reduction	31-48	31-48	7-23

(Source: Murray et al. Effectiveness and costs of interventions to lower systolic blood pressure and cholesterol: a global and regional analysis on reductions of cardiovascular disease. *The Lancet* 2003; 361:717-725.)

In the United States the care of people with chronic disease represents 70% of healthcare expenditure [i]. Disabled people constitute a minority sector of the population which is covered by Medicaid (the American healthcare programme designed for individuals and families with poor incomes and resources) but who, nevertheless, account for most of the healthcare budget

[i] Centers for Disease Control and Prevention. *The Burden of Chronic Diseases and Their Risk Factors: National and State Perspectives 2004*. Atlanta: U.S. Department of Health and Human Services; 2004. Accessible en: <http://www.cdc.gov/nccdphp/burdenbook2004> .

What do we need to know?

Most of the questions related to the economic, social and political implications of multiple chronic diseases remain unaddressed (25).

Economic implications

- What are the total costs associated with the management of complex chronic diseases? The estimates must include data on healthcare costs, costs associated with productivity loss and disability, and to family caregiving of different combinations of diseases.
- What are the economic implications of different strategies for the provision of coordinated services (health and social) to people living with multiple chronic diseases?
- What is the most appropriate model of resource allocation across health promotion, disease prevention, healthcare and social service activities to minimize the economic and social impact of multiple chronic diseases?
- What interventions could reduce productivity loss associated with multiple chronic diseases?
- What technological innovations could offer real cost-effective alternatives to current care models?

Social and political implications

- What is the impact of multiple chronic diseases on the lives of caregivers?
- What policies could lead to a reduction in the prevalence and the economic consequences of multiple chronic diseases?

What strategies could fill the gaps?

Given the potentially devastating effects that multiple chronic diseases could have on the economy and on society at large, bold policies would need to be developed and implemented to facilitate the transformation of existing health and social services. As a minimum, such policies should make it easier to fill most of the gaps identified in all of the preceding chapters, with emphasis on:

- Efficient monitoring of the incidence, prevalence and impact of multiple chronic diseases (Chapter 1)
- The need to boost investment of resources in health promotion and disease prevention efforts (Chapter 2).
- The promotion of early detection of pluripathology through large population-based screening programs (Chapter 3).
- The implementation of innovative models for complex chronic disease management, which foster leadership in the front lines and bottom-up innovation (Chapter 4).
- The adaptation of existing health and social services to promote optimal integration and coordination of roles, workflows and processes at all levels (Chapter 6).
- The minimization of unnecessary suffering and the optimization of supportive care services throughout the entire natural history of multiple chronic diseases, and

particularly at the end of life, for patients and their caregivers (Chapter 7).

- Strategies to engage people living with multiple chronic diseases and their caregivers in effective self-management programs (Chapter 5), demedicalizing their care as much as possible (Chapter 8)

Achieving this will not be easy. In fact, it could be argued that slow nature of the policy making process and the resistance to change that pervades all levels of the health system, will hinder our ability as a species to introduce the radical changes that are required to ensure that people living with multiple chronic diseases can achieve optimal levels of quality of life, without bankrupting the economy.

The jury is out. Let's hope that we have the foresight and courage necessary to bring about the creative partnerships among the government, academic institutions, the public and industry; the rigorous trans-disciplinary research and development work; the effective knowledge mobilization and management; and the level of political will that are needed to meet the unprecedented challenges that are created when we live long enough to accumulate multiple chronic diseases.

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Comments to the whole document

- 23 Feb 2010 20:16 [Narcis Gusi](#) commented, on

Add to the section cost of complex illnesses.

The addition method for calculating the cost of each pathology could lead to the error of overvaluing or undervaluing, depending on the combination of diseases. One possible way of studying (analyzing, monitoring the effect of interventions, etc.) the overall impact of complex pathologies and comparing diverse groups of patients is to employ utilities based on evaluating health in connection with quality of life, focusing more on the overall impact on the state of health.

- 23 Feb 2010 20:10 [Narcis Gusi](#) commented, on

Regarding the above comment,

the information could also be linked up with the previous section on the combination of social and healthcare resources as this is an interactive example involving Health, Social Welfare and Sports (reference 4).

The information from the previous article (5) compares cost-utility from the perspective of the healthcare system and from the social perspective, including the costs incurred in the individual. A comparative sensitivity analysis reveals the complementarity of the two analyses, providing information for decision-making in accordance with the distance to a centre offering the resource, etc.

Both references could be used in the previous section, perhaps to balance out the sections and offer a more positive view of the change: it is possible.

In addition, the European Union-funded program PASEO (Building Policy Capacities for Health Promotion through Physical Activity among Sedentary Older People) develops a strategy for detection of the key factors for the development of alliances between different sectors (healthcare, social, educational, sports) to promote healthy lifestyles, in particular physical exercise. This project exemplifies the fact that efforts must be developed for inter-sectoral alliances, synergies, in order to achieve these ends more efficiently, avoiding the overlapping of resources and using agents or sectors in their most efficient capacities. For example, a health service could be broader and more efficient if the health education departments disseminate information, while other healthcare or community units design or apply this, rather than building new dissemination structures.

www.paseo.org

- 23 Feb 2010 19:52 [Narcis Gusi](#) commented, on

Add or integrate into what we need to do: measures to cut expenditure by reducing risk factors:

A number of experiences have demonstrated a high impact on major population groups of patients aged over 65 with chronic illnesses with effects. For example, referral of older people to community exercise programs based on walking with appropriate exercises should be a highly cost-effective and territorially equitable technology both for biological improvements and mental and social health, as observed in clinical trials (3) and the subsequent adaptation and application for major populations of older people (4). It is likewise cost-effective to apply this to a group of people with fibromyalgia, characterized by their poly-symptomatology (5).

Comment: if you wish you could include the graphic from the first reference (3) presenting the high probability of efficiency of a walking-based program (pubmed open access at www.afycav.es, or if you give me an e-mail address I can send it to you). Similarly for reference (5), also by open access.

3 Gusi N, Reyes MC, Gonzalez-Guerrero JL, Herrera E, Garcia JM. Cost-utility of a walking programme for moderately depressed, obese, or overweight elderly women in primary care: a randomised controlled trial. *BMC Public Health* 2008;8:231.

4 Gusi N, Herrera E, Quesada F, Cebrian C, Campon C. Exercise Looks after You: from research to practice in elderly. *Journal of Aging and Physical Activity* 2008;16:S73-S74.

5 Gusi N, Tomas-Carus P. Cost-utility of an 8-month aquatic training for women with fibromyalgia: a randomized controlled trial. *Arthritis Res Ther* 2008;10(1):R24.

Note: this year we expect more publications in connection with the long-term effect of group public health programs, and on dementia carers.

- 23 Feb 2010 19:12 [Narcis Gusi](#) commented, on

Add to measures to increase income in what we need to do:

- An improvement in healthy habits, for example physical exercise, will improve the productivity and competitiveness of companies, allowing them to contain or reduce social/health costs, with the possibility of limiting either contributions or taxes connected with public or private insurance, while insurers could reduce their costs by being more competitive. R&D+i and policies focused in this direction could also help improve business competitiveness. In parallel, we will also see the development of a marketplace for companies specializing in the supply of services to improve health related to the quality of life of workers, and consequently the health capital of the investing companies.

- 23 Feb 2010 19:00 [Narcis Gusi](#) commented, on

In general I feel it is too heavily focused on the healthcare system, although the WHO itself promotes community interaction with the health system. From the economic perspective, greater community cooperation will allow the synergy of the health system with already existing human resources and infrastructure or with new structures with more affordable business requirements. This idea is connected, for example, with the policy of healthy cities (they could be renamed healthy boroughs) including the development of environment and infrastructure or local services to promote health in daily leisure or working life. For example, the European Union project IMPALA

(Improving Infrastructures for Leisure-Time Physical Activity in the Local Arena) observed the importance of urban design and infrastructure management to promote healthier lifestyles, for example the use of physically active transport through its exercise effects and positive impact on climate change, as proposed by the WHO.

- 23 Feb 2010 18:47 [Narcis Gusi](#) commented, on

addition or integration in paragraph 4 of what we need to do: equitable access...

However, equitable access to health resources should cover not only the healthcare system but also community services (social, sporting, etc.) which to a great extent depend on the socio-demographic, educational and employment context. For example, we need to promote healthy services (healthcare or community) in particular in contexts where the potential for investment and the polypathological population is lower: rural areas, women, small and medium-sized enterprises, etc. These services could benefit from ICT options to offer e-Health services and products.

- 23 Feb 2010 18:34 [Narcis Gusi](#) commented, on

Political or business actions must give consideration to consultancy for appropriate education regarding the promotion of healthy habits, as there is also a dose/response and cost/benefit relationship. For example, one Danish research project (1, 2) revealed that moderate intensity physical exercise was associated with lower short-duration (2-4 days) and longer duration (over 8 weeks) absences from the workplace, above all in women, but that not all doses of exercise had the same effect. Moderately intense healthy sporting pursuits of from 2 to 4 hours per week and more than 4 hours per week were respectively associated with 8% and 15% less long-term absence (more than 8 weeks) in women. However, highly intense sporting pursuits of more than 4 hours per week were associated with an increase in long-term absences from work, both for men (25%) and women (12%). Bearing in mind that less than half of adults of working age engage in an adequate level of physical activity as recommended for their health (1 hour, 3 days per week), the margin for cost reductions is considerable. Promoting sport and physical activity could thus reduce absences from the workplace and increase productivity with proper consultancy, and could likewise be a tool contributing to equality between men and women, in that it reduces the gender differences in time taken off work.

References:

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- 23 Feb 2010 18:23 [Narcis Gusi](#) commented, on

1) Suggested addition to the first paragraph of what we need to do:

and the inadequate understanding at companies of the benefits of promoting healthier habits among their workers. In fact, tools allowing for an estimate of the corporate and social/healthcare benefits have proved the key in stimulating public and corporate investment, and not merely expenditure.

2) Addition/integration for paragraph 9 of what we need to do: Reduce prevalence...

a) The European Health at Work Network indicates that for each euro invested in healthy lifestyles the returns are between 2.50 and 4.80 euros.

Regarding performance in the workplace, absenteeism connected with health problems is one of the most significant public and professional health issues in the loss of actual working hours, and the possible reduction in productivity during other hours, along with replacement costs either because those colleagues who are present are placed under greater stress through having to take on the absentee's workload, or the hiring of substitutes who generally require a period of adaptation to the position (replacement price). In the European Union this cost represents between 1.5% and 4% of GDP.

Comments by section

Vignette: How it could be

- 31 Mar 2010 16:33 [Richard Smith](#) commented, on

This doesn't really seem to be a vignette of the future. It's simply describing the problems that health ministers have. It would surely be better to attempt to describe how the future might look once some of the problems have been tackled.

- 31 Mar 2010 16:29 [Richard Smith](#) commented, on

1. Unless you happened to know what Lalonde said in the 70s this was a very unhelpful first sentence. I didn't know, and I suspect that 99% of readers won't know--so I changed it.

Summary

- 31 Mar 2010 17:56 [Richard Smith](#) commented, on

The phrasing that made it sound as people with complex chronic disease "were responsible for" high costs was unfortunate--so I changed it.

Why is this topic important?

- 31 Mar 2010 18:06 [Richard Smith](#) commented, on

I've added something on the US system being the most expensive in the world--and therefore atypical.

I'm not sure that the table adds anything very useful. I'm tempted to delete it but haven't. The figure's legend was both incomplete and wrong. I've changed it.

- 23 Feb 2010 10:11 [Jaime Espin](#) commented, on

I agree with Alex Jadad. Although data for the USA are generally easily available, they may not be the most appropriate for this introductory section. A comparison between the European and American figures would give us an image closer to the reality.

- 9 Feb 2010 17:42 [Alejandro \(Alex\) Jadad](#) commented, on

I agree. Meanwhile, using the United State as an example of what has happened since the 20th century is not appropriate, given the atypical nature of their system.

- 26 Jan 2010 17:41 [Begoña Isac Martínez](#) commented, on

This section should focus on why the economic, political and social aspects of complex chronic diseases are important, not why chronic diseases in general are important, or the implications of individual illnesses, except for no more than a couple of examples. Perhaps a table summarizing the key information included here could be useful.

[What do we know about this topic?](#)

- Apr 2010 19:37 [Richard Smith](#) commented, on

I've added this section extensively and added data.

I've edited this extensively and added data. I'm not sure if these data might appear elsewhere. If they do they clearly need to be removed again.

- 23 Feb 2010 11:39 [Jaime Espin](#) commented, on

One study (Chronic Disease: An Economic Perspective London: Oxford Health Alliance 2006) places a figure on the cost of chronic disease of between 0.02% and 6.77% of a country's GDP. I feel it would be helpful to mention this major difference in figures depending on the country

[What do we need to know?](#)

23 Feb 2010 11:52 [Jaime Espin](#) commented, on

The idea of comparing models in accordance with their efficiency or cost-utility very much appeals to me. It would in this regard be helpful to add something from the debate as to the threshold of effectiveness and particular relevance for chronic disease (above all measuring the efficiency of interventions for the prevention of chronic

disease, which may not be cost-effective)

What strategies could fill the gaps?

23 Feb 2010 11:58 [Jaime Espin](#) commented, on

This chapter is very well developed. However, the idea of promoting a rise in revenue could be accused of bean-counting. I would place the focus on measures to improve efficiency (not just reduce costs)