

**The European Commission's influence in supporting health systems:
meeting the healthcare needs of an ageing European population**

Scenario planning – The EU in 2050



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Publication date: January 1 2016

Abstract

Aims: Demographic change in the European Union might bring forth substantial challenges in meeting future healthcare needs. What the exact extent of these challenges will be, is uncertain and depends on various factors we cannot accurately predict. One way of dealing with this uncertainty, is by making assumptions about how the situation could potentially develop in the future. In the current study we set out to explore how population ageing might increase the burden on health systems in the European Union by the year 2050 and what the European Commission's role is in strengthening these health systems.

Methodology: The method of scenario planning was utilized to create three potential future scenarios on how health systems could be affected by population ageing by the year 2050. These scenarios formed the basis of several recommendations for the European Commission, in order to support and strengthen health systems and steer the future towards the most desirable scenario.

Results: The degree of political and economic stability in the European Union, advances in medicine and technology and the influence of the European Commission – particularly DG Santé – were considered to be main driving forces in the current study, with each scenario differing in how these driving forces affected the various components of health systems.

Conclusions: Based on the developed scenario plots, we conclude that the European Commission has an active role to play in supporting health systems and dealing with the consequences of an ageing population. The European Commission should pursue political and economic stability in the European Union and contribute to the development of medical and technological innovations. Many of the European Commission's contemporary efforts already substantially contribute to the strengthening of health systems, and these efforts should be continued and expanded in the future. Several additional recommendations are provided on how to strengthen the separate building blocks of health systems.

Section 1: Introduction

The demographic composition of the European Union (EU) is subject to ongoing changes. Although significant disparities in health status and life expectancy between different countries, regions and social groups remain (Mackenbach, 2013), in general European citizens are living healthier and longer lives, with life expectancy steadily increasing at a rate of 2 to 3 months every year (Social Protection Committee (SPC), 2014). The main drivers behind this increase in life expectancy are healthier lifestyles, higher living standards, better education and improved access to quality care services (Mathers, Stevens, Boerma, White, & Tobias, 2015; Organisation for Economic Co-operation and Development (OECD), 2011). In developing European Union Member States, there are furthermore the factors of better nutrition, sanitation and housing that contribute to an increase in life expectancy (OECD, 2011). Projections show that life expectancy is expected to continuously and steadily increase in the upcoming decades (European Commission, 2012), facilitated by further anticipated advances in the field of public health. Table 1 illustrates the projections on the number of people aged 65+ and 80+ within the EU (excluding Croatia) up to the year 2060. The number of people aged 65+ in the year 2060 is expected to increase by 80.5% compared to 2008, while the number of people aged 80+ is predicted to almost triple over that same time period (European Commission, 2012).

Table 1. Projected changes in number of people aged 65+ and 80+ within the EU (excluding Croatia), 2008-2060, in millions

EU-27	2008	2010	2020	2030	2040	2050	2060	% change (2008-2060)
65+	84,6	87	103,7	123,5	143,1	149,9	152,7	80.5%
Of which: 80+	21,8	23,3	29,7	36,6	48,8	57,5	62,2	185,4%

Source: The 2012 Ageing Report (European Commission, 2012)

Table 1 reflects the projected absolute number of senior citizens within the EU. For an arguably more informative overview of how the demographic composition is expected to shift within the EU, a glance at how the remainder of the population will develop is needed. In addition to an increasing life expectancy, birth rates have been declining in Europe over the past decades (SPC, 2014). The so-called baby boom generation – the large cohort of citizens born after the Second World War, between 1946 and 1964 – has started reaching retirement age, and the working age population in years to come will be formed by the smaller cohorts of generations succeeding the baby boom generation. Table 2 illustrates the projections of the proportion of

elderly within the EU (excluding Croatia) up to the year 2060, expressed as a percentage of the total population and working age population (European Commission, 2012).

Table 2. Demographic projections of the proportion of elderly in the EU, 2010-2060

EU-27	2010	2020	2030	2040	2050	2060
Elderly population (65 and over) as % of total population	17.4	20.3	23.8	27.0	28.7	29.5
Very elderly population (80 and over) as % of total population	4.7	5.8	7.1	9.0	11.1	12.1
Very elderly population (80 and over) as % of working age population	7.1	9.1	11.5	15.3	19.4	21.5

Source: The 2012 Ageing Report (European Commission, 2012)

Similar findings apply when looking at each Member State individually; all countries in Europe are experiencing an ageing of their populations, with a decrease in the number of people of working age per retiree (Rechel, Doyle, Grundy, & Mckee, 2009).

From a public health perspective, these anticipated demographic changes emphasize the need to critically evaluate what the potential consequences for health systems across Europe might be, as the fact that the European population is ageing, is likely to bring forth new challenges (Rechel et al., 2013). What the magnitude of these challenges will be, is subject to an ongoing debate. There is no consensus amongst academic researchers on whether, and to what extent, the prevalence of disability will be affected in the future by changes in lifestyle and advances in medicine and chronic disease management (SPC, 2014). Christensen, Doblhammer, Rau, and Vaupel (2009) argue that by reorganizing the healthcare workforce, combined with technological and medical developments, the onset of severe disability in old age can be substantially postponed, which will possibly alleviate the strain on health systems in the future. Lafortune and Balestat (2007) state that age-related causes of disability and dependency – such as Alzheimer’s disease and Parkinson’s disease – may become more prominent. This is confirmed by Ferri et al. (2005), who predict that the prevalence of dementia will more than triple between 2001 and 2040. Changes in diet, sedentary lifestyles and alarming obesity rates are expected to negatively impact people’s long-term health further (Beydoun, Beydoun, & Wang, 2008; SPC, 2014). Lafortune and Balestat (2007) conclude that despite the fact there might be numerous potential technological and medical developments that could lead to people ageing in a healthier way, the sheer growth of the number of elderly alone is bound to lead to a significant increase in the number of frail people with functional disabilities and limitations, in

turn leading to an increasing demand and need for structural social and medical care over the next decades. It becomes apparent when evaluating the available literature that action is needed to guide the transition of health systems into an era where healthcare demands are changing due to an ageing population.

The European Commission (EC) has acknowledged the importance of dealing with the consequences of an ageing European population and has therefore initiated and supported various initiatives and projects covering this topic (Commission of the European Communities, 2007; European Commission, 2014a, 2014b). In the current paper we aim to explore the future role and influence of the European Commission in strengthening health systems within the European Union's Member States, in anticipation of the changing healthcare needs of an ageing population.

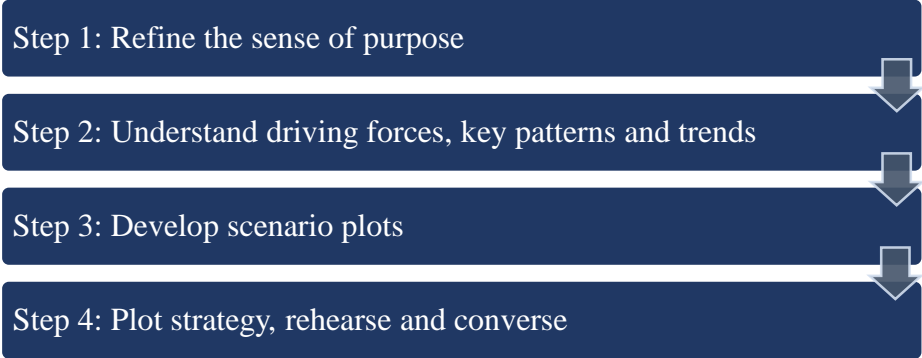
Section 2: Methodology

The exact magnitude of the challenges health systems will be faced with due to an ageing population remains uncertain. One way of dealing with this uncertainty, is through scenario planning, which is a method for anticipating possible alternative futures (Senge, Kleiner, Roberts, Ross, & Smith, 1994). Neiner, Howze, & Greaney (2004) emphasized the added value of scenario planning in the field of public health, as scenario planning encourages people to challenge existing – often implicit – assumptions and can help make the intricacy of public health issues clearly apparent. By depicting various alternative future scenarios on how complex public health issues might evolve, one can anticipate how to intervene on multiple levels in response to potential future challenges (McLeroy, Bibeau, Steckler, & Glanz, 1988). Scenario planning should not be viewed as a method to predict the future, but mainly as a way to guide future decisions in a way that undesirable outcomes are avoided and desirable outcomes are pursued (Senge et al., 1994).

The method of scenario planning applied in the current study, consists of four steps. The first step will be to refine the sense of purpose and relevance of the issue one wants to address (Senge et al., 1994). This step is followed by understanding the key patterns, trends and driving forces, both predetermined and unpredictable, which will form the basis of the scenarios. Predetermined driving forces are phenomena and developments one can predict with a relatively high degree of certainty, such as the fact that the European population is ageing, while unpredictable driving forces are those phenomena and developments that cannot be easily foreseen (Neiner et al., 2004). The third step in the process of scenario planning will be the creation of scenario plots. Scenario plots usually take the form of a matrix table with

descriptions of how driving forces may influence the outcome in various possible scenarios. When creating scenario plots, one should also consider incorporating scenarios that are seemingly unlikely to occur, as it might be valuable to also contemplate on what strategies would be effective if components of such a scenario would become reality due to unpredictable driving forces (Senge et al., 1994). The final step of scenario planning is to develop various strategies, to rehearse and visualize the various possible scenarios and to discuss these scenarios with others. This process should lead to the development of strategies of which implementation seems sensible and applicable in all the anticipated scenarios (Senge et al., 1994). Developing such strategies is useful for steering the future towards the most favourable scenario while avoiding the less favourable scenarios. It is particularly this last step that allows for a meaningful and practical application of scenario planning (Neiner et al., 2004). The different steps in the scenario planning process are visualized in figure 1.

Figure 1. The four steps of scenario planning according to Neiner et al. (2004) (own figure)



In the current study we will use the method of scenario planning as elaborated upon by Neiner et al. (2004) and Senge et al. (1994), to create multiple scenarios on how health systems will be strained in the future due to demographic changes. More specifically, we will use the system building blocks of the World Health Organization’s (WHO) (2010) health systems framework to categorize the different components health systems are comprised of, and explore how the European Commission can potentially influence and strengthen each of these building blocks in dealing with the challenges and consequences of an ageing population.

The six health system building blocks used as dimensions in the scenario plots of the current study are the following (WHO, 2010):

- Information / research
- Health workforce
- Healthcare financing
- Leadership / governance
- Service delivery
- Medical products and technologies

Section 3: Results

3.1 The sense of purpose

The tremendous potential impact of an ageing population on the health systems in the European Member States has been acknowledged by academics, healthcare professionals and policy makers throughout Europe (SPC, 2014) and underlines the sense of purpose of the current study. The relevance for acting on a European level is illustrated by the European Commission's contemporary efforts in addressing the issue from multiple angles (Commission of the European Communities, 2007; European Commission, 2013a, 2014a, 2014b). In accordance with Article 168 of the Treaty on the Functioning of the European Union (TFEU) (European Union, 2012), the European Commission has both a mandate and an obligation to take human health protection into account in all its policies and activities. Through scenario planning and analysis of past, current and potential future efforts of the EC in strengthening health systems, the purpose of the current study is to present a range of assumptions and strategies on how the European Commission could and should act in alleviating the future strain on health systems due to demographic change in the year 2050.

3.2 Driving forces, key patterns and trends

After having defined the sense of purpose, the next important step for creating the foundations and boundaries of the different scenarios, is identifying driving forces, key patterns and trends. One of the main predetermined driving forces relevant for the current study is the assumption that all European Member States will have a higher number and proportion of elderly citizens by 2050 (European Commission, 2012; SPC 2014). One can also safely predict this will lead to different types of morbidity becoming more prominent and pressing, which gives rise to the notion that health systems should be reorganized accordingly (SPC, 2014). The demographic

changes will lead to a decreasing availability of potential formal and informal caregivers, and many contemporary financing mechanisms for long-term care will no longer be sustainable due to decreasing financial contributions from a gradually shrinking professional workforce (European Commission, 2013b).

However, next to these predetermined driving forces, there is a wide array of unpredictable driving forces which might influence to what extent demographic changes will affect the strain on health systems. For instance, we don't know what medical advances will come to pass between now and 2050, and how new technologies and medical breakthroughs will alleviate the burden of various health ailments. Future improvements in prevention, diagnosis, treatment and disease management have the potential to substantially alter the pressure on health systems, but are at the same time highly unpredictable (SPC, 2014). Similarly, we don't know if future changes in lifestyle patterns will result in either favourable or unfavourable health outcomes.

There also are unpredictable driving forces on a European political level. Continued friction among Member States in the aftermath of the economic crisis poses a serious threat to political stability and unity in the European Union (Kugler, Fisunoglu, & Yesilada, 2015; Winchester, 2015). If not resolved adequately, this could jeopardize cooperation between Member States and hamper the positive influence the European Commission can exert in supporting and strengthening health systems. Furthermore, there is armed conflict at the European Union's borders and a glance at Europe's 20th century history makes it apparent that contemporary peace within the EU is a frail blessing (Pond, 2015). All of this leads to a degree of uncertainty regarding what the composition of the European Union will be by 2050, which issues will have a prominent place on the political agenda and what influence the European Commission will have.

Next to exploring what developments might take place on a European level, it is also important to take into account developments in the individual Member States. Healthcare governance within the EU currently still falls to a large extent under the principle of subsidiarity (Mossialos, Permanand, Baeten, & Hervey, 2010), implying that national policies and activities play a key role in strengthening and altering health systems in anticipation of the changing healthcare demands of an ageing population. If the mandate for health of the European Commission is not expanded, or has even weakened by 2050, it remains largely to the discretion of the Member States to determine future financing mechanisms for healthcare and the role of formal and informal carers. If national governments will indeed be the main and maybe even sole responsible actors for strengthening health systems, the way these health systems will be organized could largely depend on the political orientation, philosophy and values of these

national governments and the financial resources at their disposal. Currently, these factors remain highly uncertain and can therefore be seen as additional unpredictable driving forces (Senge et al., 1994).

All of the above mentioned driving forces, trends and key patterns will be taken into consideration when developing our scenario plots.

3.3 Scenario plots

In the current paper we develop 3 future scenarios, with each anticipated future depending on potential medical and technological advances and changes in lifestyle, the level of involvement of the European Commission in the field of public health and the efforts of national governments in strengthening health systems. In each scenario, a different combination of driving forces leads to health systems being affected in a different way.

In scenario 1, there have been favourable developments with regard to healthier lifestyles and medical and technological advances, partly due to the European Commission's efforts. Still, there are many older persons requiring assistance with activities of daily living. There is political stability in the EU and the European Commission has strengthened and expanded its mandate in public health and healthcare.

In scenario 2, there similarly have been favourable medical and technological developments that can reduce the burden of chronic disease. Despite these developments, there is a large demand for long-term care services due to the proportion of senior citizens. The European Union remains intact, but mainly as an economic oriented entity. The European Commission's mandate and influence in public health have crumbled, as economic and trade interests have prevailed over (often conflicting) public health interests. Healthcare remains largely a competence of the individual Member States, although there still is limited cooperation on a European level.

Scenario 3 is possibly the grimmest of the scenarios from a European integration perspective. After Greece forcefully left the European Union in 2016, more South and South Eastern European Member States followed, leading to a small block of countries in North Western Europe eventually forming a new Union with its own new currency. Cooperation between former EU Member States has diminished substantially in many areas, including the field of healthcare. Political and economic instability in Europe have led to harmful lifestyle patterns amongst the population and a lack of medical and technological innovations relevant for addressing the health concerns of an ageing population. This in turn has led to a substantial increase of chronic diseases and a heavy strain on health systems in Europe.

Some of these scenarios may seem more likely to occur than others. Senge et al. (1994) emphasized the importance of not dismissing seemingly unlikely scenarios, but to pursue developing them instead and to come up with effective strategies regardless of the likelihood of the scenario occurring. This has led to the development of our three scenarios plots, which are presented in table 3.

Table 3. Scenario plots for the year 2050 (own table)

Health System Building Blocks (WHO, 2010)	Background and current influence of the European Commission	Scenario 1 - Political stability in EU - EC has a strong influence on public health - Medical and technological innovations	Scenario 2 - Political stability in EU - EC has a very limited (direct) influence on public health - Medical and technological innovations	Scenario 3 - Political instability in the EU has led to a smaller North-Western European Union. - Higher chronic disease burden across Europe due to unhealthy lifestyles and lack of innovations - Minimal cooperation between former EU Member States
Information / Research - Health information and monitoring systems - Research and knowledge infrastructures - Public health reporting	Jean-Claude Juncker, as president of the European Commission, has made developing expertise on health systems performance assessment (HSPA) one of the main foci for DG Santé (Juncker, 2014). This can be seen as an important step towards improving health information and monitoring systems within the EU, although it is still very much a developing field (Bernal-Delgado et al., 2015). Additionally, there is Horizon 2020, a research and innovation program in line with the Europe 2020 strategy (European Commission, 2010). The Horizon 2020 research program has a budget of nearly 80 billion euro, of which 1.200 million euro is reserved for a special strand on healthcare and demographic change (European Commission, 2014b).	Successors of the Horizon 2020 research program have obtained larger budgets over the years to address health outcomes and demographic change. These research programs have contributed to older people being more active and experiencing greater independence. Research has led to new, safer and more effective interventions. Especially in the field of personalized medicine great progression has been made. Most research in the EU in the field of public health is coordinated and funded by the European Commission. Fully functional monitoring systems for health outcomes are in place in all Member States.	Research has led to some useful innovations and favourable outcomes with regard to chronic disease management, e.g. in treating coronary heart disease, which to some extent mitigates the burden of an ageing population (Guzman Castillo et al., 2014). Health system performance assessment tools are in place in every Member State. However, comparability of data obtained on a EU level is rather limited due to a lack of coordination. Also, some Member States struggle in adequately monitoring some of the agreed performance dimensions, especially in rural areas.	Most countries in the (former) European Union run their own research programs. Findings from research are often not properly transferred from one country to another, partly due to heterogeneity in country characteristics and differences in health system capacities. Due to the political instability in Europe, funding healthcare research is not a priority in many (former) Member States. Monitoring tools remain in place in the North Western European Union, but in the former Member States health systems are not adequately monitored anymore.

<p>Health Workforce</p> <ul style="list-style-type: none"> - Availability and distribution of workforce - Training and development - Professional associations - Public health competencies 	<p>In some Eastern and South Eastern European Member States (e.g. Greece, Estonia, Lithuania, Romania, Slovakia, Bulgaria), there are alarming shortages of nursing and (formal) care personnel (SPC, 2014). In addition to the fact that employment in the healthcare sector is associated with low pay and low prestige in these countries, the freezing of new appointments of health personnel under enforced austerity measures and bailout programs (in the case of Greece) is exacerbating shortages of health care personnel. At the same time, increasing emigration of educated healthcare personnel (mostly from South Eastern European Member States to North European countries) contribute to a significant drain of human resources for the developing Member States (SPC, 2014). In some of the wealthier European Members states (e.g. the Netherlands) governments seemingly want informal care to play a bigger role in the care provision, in an attempt to reduce public expenditure on healthcare (SPC, 2014).</p>	<p>Under the European Commission's influence, health systems have been steered away from relying too heavily on informal caregivers, as relying too much on informal care is likely to lead to negative outcomes on both an individual and societal level (European Commission, 2014c; Huisman, 2015). Informal care plays a very modest role, to the extent that people are not overburdened or suffer financially when providing informal care. Through various EU health programs and continued usage of social and structural funds, educational standards and labour conditions for formal carers have improved across the European Union. Well-trained and adequately staffed healthcare workforces are the norm. Investing in the formal care workforce has safeguarded the quality of the care provision, while creating job opportunities at the same time. Prosperity in all European Member States has led to decent salaries for formal caregivers throughout the European Union.</p>	<p>Although DG Santé has had many of its competences and mandates revoked, through DG Employment the European Commission does have the possibility to influence to some extent education and training of medical staff within the Member States. Despite the EC's efforts, the phenomenon of brain drain in the healthcare sector, i.e. highly educated nurses and physicians leaving certain Member States in large numbers to find work in a more prosperous environment, has led to a high reliance on informal care in the developing Member States. But also in the more developed Member States, such as the Netherlands, Germany, France and Denmark, people are expected to provide informal care when family members become care dependent.</p>	<p>Since many (former) Member States have left the European Union, previous agreements regarding the free movement of people as agreed upon in the Schengen Convention don't apply anymore for these Member States. It has become more difficult for healthcare personnel from South-Eastern Europe to migrate to one of the wealthier European Union Member States. Still, some of the wealthier European countries allow highly educated healthcare workers to work within their health sectors because of increasing care demands and the lower salaries these healthcare workers are willing to accept. Since the open method of coordination is not applicable anymore, there are no European standards in the training of healthcare personnel. There is a very high reliance on informal care in Southern and South-eastern Europe, and little governmental support for informal carers leads to adverse economic and health effects on a personal level. Formal carers are often underpaid and overstrained.</p>
<p>Leadership / governance</p> <ul style="list-style-type: none"> - Policy making in public health - Expertise within Ministries of Health - Responsibilities in public health - Leadership qualities in the health sector - Strategic visioning and systems thinking 	<p>Healthcare governance in Europe falls to a large extent under the principle of subsidiarity, and the open method of coordination plays an important role in pursuing favourable health outcomes on a European level (Mossialos, Permanand, Baeten, & Hervey, 2010). Still, the EC can be seen as taking the lead in determining a common health agenda for the EU (European Commission, 2010). Capacity building through the social</p>	<p>Governance in healthcare falls to a large extent under the EC's expanded mandate. The EC has a strong influence in steering national Ministries of Health and provides support where necessary. The EC also plays a role in supporting regional and local governments in dealing with the consequences of an ageing population. Initiated by the EC, peer reviewing of</p>	<p>Many national governments have decentralized the responsibilities of the long-term care provisions, leaving regional governments and municipalities responsible for the care of frail senior citizens. Many of these regional governments and especially municipalities, seemingly lack the capacities and financial resources to</p>	<p>There is a strong 'laissez-faire' attitude amongst governments in Eastern Europe (e.g. Latvia, Croatia, Hungary, Bulgaria) when it comes to dealing with the consequences of an ageing population, meaning that no decisive action is taken in reforming the health systems. In this regard, little has changed since 2014</p>

	and structural funds and exchange of knowledge have the potential to contribute to growing expertise within the Ministries of Health in the developing Member States.	national healthcare policies is common practice.	provide an adequate level of care.	(European Commission, 2014c).
Healthcare financing - Financial resource generation - Financial resource allocation	There is heterogeneity in the EU in how healthcare services are being financed; the role the government, social security funds, private insurance and out-of-pocket expenses play in financing the care provision differ per Member State (European Commission, 2013b; SPC, 2014). The European Semester provides economic policy guidance and provides Member States with annual recommendations on fiscal and structural policy reforms. There is an increasing trend for country specific recommendations to cover the financing mechanisms for health systems, with a predominant focus on sustainability (Azzopardi-Muscat, Clemens, Stoner, & Brand, 2015).	The working age population within the EU as a percentage of the total population has reduced from 67 % in 2010 to 57 % in 2050 (European Commission, 2012). This declining working-age population generates less income for health and pension systems through social insurance (Rechel et al., 2009). Following Germany's example, Member States have been setting funds aside since 2016 to build a financial buffer and to compensate for the gradually decreasing financial contributions of a shrinking workforce. Out-of-pocket expenses for healthcare are limited to an amount that is fair and reasonable.	Although joint procurement of pharmaceuticals and medical equipment has the potential to decrease spending on healthcare substantially, the lack of a collective healthcare strategy results in each Member State financing medication and technologies on its own, paying a higher price in the process due to a weaker negotiating position with the industry. There still is corruption in some Member States, with healthcare professionals regularly asking for illegal additional payments in exchange for medical services. The EC plays a small role in advising Member States how to finance the care provision.	There are great disparities between the (former) EU Member States in the way healthcare is financed. In countries with right-wing governments, there are substantial out-of-pocket expenses required when needing long-term care. This affects families from lower socio-economic backgrounds in a disproportionate manner, as older persons from these less affluent families are also the ones most likely to become dependent on long-term care.
Service delivery - Comprehensiveness - Accessibility - Coverage - Continuity - Quality - Person-centredness - Coordination - Accountability/efficiency	One way in which the EC contributes currently in strengthening the service delivery component of health systems, is via the Third EU Health Programme (European Union, 2014). One of the specific objectives of the program is to facilitate access to better and safer healthcare for Union citizens, and through tenders and grants various projects aligned with this objective are financed across the EU.	As the other health system building blocks have been adequately strengthened with assistance of the EC, Member States are generally able to provide adequate coverage, comprehensiveness and accessibility of care for elderly citizens. Furthermore, advances in personalized medicine contribute to the person-centredness of healthcare.	Even though many basic healthcare needs are being covered, the social needs of elderly citizens are somewhat neglected due to a lack of resources and perceived importance. Especially loneliness is a very common phenomenon amongst elderly. Although the importance of the topic is acknowledged in some countries, on a European level there is no strong voice representing the social interests of the elderly, with both DG Santé and DG Employment having the reach of their mandates diminished (DG Employment no longer covers social affairs and inclusion).	There are great disparities in the quality of the care provision, with especially (former) South Eastern European Member States experiencing poor to mediocre quality standards. In the North Western Member States, the quality of care is better, but comprehensiveness and coverage of public care services are limited. Care is provided for a rather confined group of needy people, and the scope of services provided is limited. Especially the social care component in the long-term care provision is minimal.

<p>Medical products / technologies</p> <ul style="list-style-type: none"> - Access to essential medical products, vaccines and technologies. - Quality, safety, efficacy and cost-effectiveness of medical products and technologies. 	<p>In addition to the Horizon 2020 research program, there are other EC initiatives contributing to the development and/or implementation of technological and medical innovations, such as the Ambient Assisted Living Joint Programme (European Commission, 2013a). With regard to newly developed pharmaceuticals, the European Medicines Agency (EMA) plays an important role as it evaluates and supervises pharmaceutical products entering the EU's market. Once granted by the European Commission, a centralised marketing authorization is valid in all EU Member States.</p>	<p>Personalized medicine is the norm. New technologies and medical products are developed and subsequently integrated in healthcare systems in accordance with the LAL-model (Lal, Morr� & Brand, 2014), leading to a smooth and rapid implementation of new innovations in actual care settings. The spread of these innovations is coordinated by the EC, and the EC is involved in assessing the quality, safety, efficacy and cost-effectiveness of new medical product and technologies.</p>	<p>Although the role of the EC has diminished over the years in the field of healthcare, there have been important advances in chronic disease management. New medication enables us to decelerate the rate at which Alzheimer's Disease progresses within patients. However, due to a lack of EU-wide cooperation in the field of healthcare, innovations are not spreading effectively and equitably. The wealthier Member States experience a greater benefit from being able to integrate these new technologies and medical products, while the health systems in the developing Member States lag behind with implementation.</p>	<p>The EMA has ceased its activities in the European Union. Although the new North-Western European Union collectively applies public health assessment tools when deciding if new pharmaceuticals should be allowed to enter the market, in the former Southern and South Eastern European Member States there is a lack of control of new pharmaceuticals. Pharmaceuticals from Russia, India and China have been flooding the market in these former Member States. Due to lacking capacities to assess their safety and effectiveness, governments condone usage of these potentially harmful pharmaceuticals, trusting in the clinical trials that were (supposedly) conducted in Russia, India and China.</p>
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3.4 Development of strategies

The final step in scenario planning involves developing strategies that contribute to steering the future in the direction of the most desirable scenario plot, which in the current study is the first scenario. The various strategies recommended for the European Commission to implement for strengthening the separate health system building blocks in anticipation of an ageing population, are summarized in table 4.

Table 4. Summary of strategies recommended for the European Commission to implement (own table)

Health system building block	Strategies to strengthen the health system building blocks
Information / Research	<p>Continue initiating and funding EU research programs, e.g. future equivalents of Horizon 2020. Incrementally increase the budget and extensiveness of health related research projects, with an additional focus on personalized medicine.</p> <p>Further pursue the development and implementation of monitoring tools for health systems performance assessment.</p>
Health Workforce	<p>Through joint efforts of DG Santé and DG Employment, Social affairs and Inclusion, Member States should be steered away from relying too heavily on informal caregivers in meeting the healthcare demands of an ageing population. This can be done within the European Semester. The reasoning behind this, is that relying too heavily on informal caregivers will on the long term lead to adverse effects on both a personal and societal level. Similarly, DG Santé and DG Employment, Social affairs and Inclusion should guide Member States to invest in the professional healthcare workforce. Expanding the amount of professional (long-term) caregivers, is a way to safeguard the service delivery component of health systems, while creating job opportunities and reducing unemployment rates at the same time.</p>
Leadership / governance	<p>Assist with increasing expertise within national Ministries of Health. The open method of coordination can play a substantial role in this endeavour.</p> <p>As there seems to be a trend of decentralizing responsibilities in care provisions for the elderly (e.g. in Belgium, the Netherlands), the EC should contemplate adopting a leading role in increasing the capacities and expertise of not only national governments, but also regional and local governments.</p> <p>Support national governments in improving horizontal and vertical coordination of healthcare. Horizontal coordination here being synergy between healthcare and social care provision, and vertical coordination encompassing the synergy between central government (or social insurance funds) and municipalities.</p>
Healthcare financing	<p>Monitor how individual Member States plan to finance their health systems, as is currently already done in the European Semester. Include an evaluation of the degree of social inclusion and equity, in addition to assessing the sustainability of the financing mechanisms behind health systems.</p> <p>Engage in joint procurement of pharmaceuticals on a EU level where possible and applicable.</p> <p>Steer Member States towards minimizing the out-of-pocket expenses in healthcare, particularly in the case of long-term care. Assist Member States in setting up financing mechanisms based on risk pooling, either via social insurance or tax-based public systems (Rothgang & Engelke, 2009).</p> <p>Encourage Member States to follow Germany's example of creating a dedicated buffer fund, that will incrementally grow as governments redirect a small proportion of social insurance contributions into this fund annually. Only from the year 2035 onward this fund can be used for financing healthcare, in order to level the effects of demographic transition.</p>
Service delivery	<p>Utilize the open method of coordination to pursue quality standards of service delivery within the Member States. If this proves to be insufficient in bringing quality on par in certain Member States, contemplate expanding DG Santé's mandate.</p> <p>Honour the obligation as determined in article 168 of the TFEU (European Union, 2012) to ensure a high level of human health protection in all Union policies and activities. The current austerity and bailout measures in Greece have had detrimental effects on population health (Kentikelenis, Karanikolos, Reeves, McKee, & Stuckler, 2014). This touches upon the health system building block of service delivery, as quality, continuity and accessibility of care services have been compromised. Greece is at this point in time unable to adequately meet the healthcare needs of its citizens, let alone prepare for the consequences of an ageing population by the year 2050. We advise that the European Commission should carefully contemplate its course of action in this manner, as to avoid (components of) scenario 3 becoming reality.</p>
Medical products / technologies	<p>Integration of promising new technologies and pharmaceuticals should be streamlined through efforts of the EMA and in accordance with the LAL model (Lal et al., 2014).</p> <p>The European Commission should critically evaluate and monitor how the Transatlantic Trade and Investment Partnership (TTIP) will potentially affect the quality, safety, efficacy and cost-effectiveness of medical products and technologies within the EU.</p>

4. Discussion

The incremental nature of the demographic changes occurring in Europe, gives the EU the opportunity to anticipate how population health might be affected, and to take decisive, proactive action in preparing and strengthening health systems. Aligned with the overarching Europe 2020 strategy, the European Commission already is engaged in various contemporary initiatives contributing to either stronger health systems or improved health outcomes, alleviating the strain on health systems in the process. Many of these initiatives incorporate specific objectives regarding demographic change and healthy ageing. Horizon 2020, the EU Health Strategy ‘Together for Health’, the Health Programmes, the Flagships Initiatives and the European Innovation Partnership on Active and Healthy Ageing, the Ambient Assisted Living Programme and the structural and cohesion funds all potentially contribute to steering the EU towards the most favourable future scenario, with article 168 of the TFEU providing a mandate to do so. Many of the recommendations that were provided in the current study, encompass that the European Commission should prolong and possibly expand its contemporary efforts in addressing the consequences of demographic change.

When looking at the health system building blocks and the different driving forces in the current study, it also becomes apparent that the issue of an ageing Europe involves many stakeholders besides the relevant Directorate Generals of the European Commission. The European Union’s supranational bodies – such as the Council of the European Union, the European Council and the European Commission –, have an important role to play in coordinating and uniting this wide array of stakeholders, i.e. national governments and Ministries of Health, regional and local governments, health care professionals, health insurance companies, care recipients and informal caregivers, throughout all European Member States.

And even though some driving forces may be unpredictable, that does not mean they are uncontrollable. In that sense, the European Commission has a very important role to play in ensuring political and economic stability within the European Union. The current situation in Greece is a striking example of how political and economic instability can negatively impact population health and strain health systems.

The strategic recommendations in the current study were based on the three developed scenario plots. A selective group of predetermined and unpredictable driving forces was selected to set the boundaries and the stage of the developed scenarios. When interpreting the results of the current study, it is important to realize that just three scenarios out of a potentially infinite number of possible scenarios were depicted. Furthermore, the likelihood of certain scenarios coming to pass changes over time, due to the introduction of new driving forces. For example,

if tomorrow a cure for dementia would be discovered, the strain on health systems would be substantially alleviated. Therefore we propagate the continued application of scenario planning, while always incorporating the newest developments and potential new driving forces in the process. By doing so, we can progressively obtain a clearer picture on what to expect of the year 2050, and provide the European Commission – but also other relevant actors – with valuable recommendations on how to pursue the most favourable and desirable future scenarios.

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