THE ECONOMIC DIMENSION OF HEALTHCARE

Authors

Ann Marie Borg

Celine Aerts

Katrijn Depuydt

Alexander Jacobs

Diana Kanecka

Jean-Michel Luyckx

Anne Peters

Elise Renault

Ines Rohmer

Fausta Todhe

Kim Van Aken

Sofie Van Mulders

Executive summary

Evaluating the current European healthcare system scenario marks a first step towards aspiring to improve it. Thus, before looking ahead and proposing ways for a more effective functioning of health systems, we must first identify the challenges and barriers to delivering equitable and sustainable high quality care services to all European citizens.

In light of ageing demographics, the economic climate, dwindling resources, increasing demand and rising costs, it is important to explore ways of doing more and better with less, and proposing smart and feasible solutions for better healthcare, whilst safeguarding common EU health values.

Improving healthcare across the EU calls for political will and enhanced co-operation between and within EU countries, and pulling resources together, especially in cases of specialised care and rare diseases. This co-operation is not about reinventing the wheel, but more about sustaining and maximising what we have achieved over recent decades and re-thinking the way we do things.

Delivering healthcare must also become patient-centred. A one-size-fits-all approach to healthcare must make way for a more personalised, inclusive and integrated care approach that empowers patients to play a more active role in their own health. The use of ehealth and telemedicine, tailored to patients' needs, has role here. But balance is needed between innovation and the use of new medical technologies and equity, ensuring that all patients have equal affordable access to the latest, high quality and safe medical treatments.

The paper opens with an exploration of the healthcare challenges Europe is facing particularly in light of the recent economic crisis which triggered enhanced EU intervention in healthcare and the call for more efficient yet sustainable care. Against this background, it then brings forward concrete recommendations on how to design and manage European healthcare systems in such a manner that we are able to do MORE and BETTER with LESS. We demonstrate how European governments can reap simultaneous economic and health benefits if they begin to see health as an investment rather than a cost and account for cost-effectiveness and sustainability of their health services across the healthcare life course; be it through preventive and diagnostic provisions of care, curative or more complex interventions and palliative care. Consequently, the paper illustrates solutions for better and cost-effective healthcare system practices at different stages of healthcare delivery - in primary, secondary and tertiary cross-border care settings.

I. INTRODUCTION

Evaluating the current European healthcare system scenario marks a first step towards aspiring to improve it. Thus, before proposing ways for more effective functioning of health systems, we must first identify the challenges to delivering equitable and sustainable quality care services. Although action should start as close to the citizen as possible, Member States (MS) are to work together to combat common health system challenges embracing common EU health system values enshrined in the 2006 Council Conclusions (OJ, 2006).

Currently, MS are unenthusiastic about Commission initiatives in the area, but the Council of Health Ministers has repeatedly invited the Commission to actively contribute to the reflection process on modern, responsive and sustainable health systems. The Commission's Communication on accessible, effective and resilient healthcare services has responded with strong arguments for addressing these challenge and with an outline of future options at EU level (European Commission, 2014). However, few concrete actions are proposed and developing effective strategies remains work in progress.

This paper takes as its point of departure the Commission's 'Investing in Health' policy agenda and the European discourse on healthcare fiscal sustainability within the context of the European semester and Country-Specific Recommendations (CSRs) related to health or long-term care. The Commission continues to urge MS to pursue healthcare reforms - increasing the cost-effectiveness and long-term sustainability of the sector, strengthening prevention and primary care services, reducing 'inappropriate' lengths of hospital stays, enhancing out-patient care, increasing the use of IT systems and hospital restructuring among others (Greer et al., 2014). But little is elaborated on how this can be achieved and what concrete measures can be taken to make national health systems more sustainable for future generations.

Some solutions are possible with prompt action. But this will need a paradigm shift and a vision of the post-economic-crisis situation, as a catalyst for change, as an opportunity opening doors to re-think the way we manage healthcare systems and preserve what is worth preserving. We need to move away from silos and a one-size-fits-all approach, and aim for a more personalised and integrated care approach that empowers patients to play a more active role in their own health. The use of ehealth and telemedicine, tailored to patients' needs, has a role here. But balance is needed between innovation in medical technologies and equity, to ensure that all patients have equal affordable access to the latest, high quality and safe medical treatments.

II. EARLY DIAGNOSIS SAVES LIVES AND CAN AVOID SOME COSTLY HEALTH CARE PROCEDURES

"Chronic diseases hamper citizens from contributing to society and generate increasing and unsustainable healthcare costs which are poised to rise as the population ages"
(Commissioner Vytenis Andriukaitis, Letter to the EU Health Ministers, 7 April 2015).

Screening and Cancer

Early diagnosis is crucial in determining suitable treatment at a stage when a disease is still amenable to easier management. Almost half of the people who are diagnosed with cancer are diagnosed late, which makes treatment less likely to succeed and decreases their chances of survival. General practitioners and primary care professionals have a critical role in determining early detection and early intervention, and an essential element in this regard is screening.

In the fight against cancer, a leading cause of death in the EU, EU institutions have committed themselves to reducing its incidence and protecting citizens by tackling risk factors and promoting early detection and treatment. In 2003, the Council issued a Recommendation on cancer screening, recognising its importance as an effective tool of preventive care for major diseases, and inviting MS to implement national programmes ensuring high coverage and quality assurance at all levels (Council of the European Union, 2003)., These approaches are largely supported at national and European level alongside European guidelines for the organisation of cancer control and screening policies. But there is more to be done to address the gaps in implementation of screening across Europe (Advisory Committee on Cancer Prevention, 2000; Arbyn et al., 2009; Von Karsa et al., 2008). Empowering professionals to promote screening participation rates is fundamental, but this needs to go hand in hand with empowering patients and improving access to information and health literacy.

CASE 1:

Despite the Commission's initiative to issue a recommendation on population-based primary screening programs for colorectal cancer in people of 50 to 74 years of age (OECD, 2014, p. 100). to date, some MS are still introducing such organized programmes. Participation rates remain low, with Germany being an exception, where screening rates reached 55% in 2008 (ibid.). Across the EU, the average screening rate for the EU14 population of age 50 to 74 was only 12.7% (ibid., p. 101). These low screening rates, considered jointly with a Swiss study that showed that testing for colorectal cancer generates an overall cost saving of about € 3.7 million p.a. in Switzerland (Blank PR et al, 2011), emphasize the need for more European guidance and the stimulus of best practice exchange.

The rationale behind the seemingly innovative concept of screening with the aim of early disease detection dates back 150 years ago when testing the public for the potential or health risk of developing a disease was developed (Gray et al., 2009). However, the roadmap to achieving this objective is less straightforward, and at the heart of the debate on evidence-based screening is the issue of quality and coverage. The central point in the early work of the World Health Organisation (WHO) on screening, developed over 45 years ago, holds today:

"In theory, screening is an admirable method of combating disease [...] In practice, there are snags" (Wilson & Junger, 1968, p. 7). The challenge is the ability to maximise treatment provision for those patients who need it the most and at the same time avoid potential harm to those who are not at risk. With the advances in medical technology, screening tools are able to deliver increasingly accurate information, permitting the determination of early diagnosis and provision of the appropriate therapy.

The cost savings potential from implementation of comprehensive screening programs for targeted population groups is well-established. Early detection facilitates early intervention, which can limit healthcare costs. The use of early diagnostic tools targeting those who demonstrate an increased risk of or susceptibility to a disease is important in this regard. For instance, companion diagnostic tests are able to provide information on whether or not the patient is likely to respond to a therapy - *"If patients receive only those medicines that are best suited for them, health outcomes for society as a whole will improve. And healthcare systems across Europe will save money."* (European Commission, 2011, p. 5). Where available, companion diagnostics can be the key to more accurate diagnosis and more personalised care, by delivering targeted therapy to those who need it and are likely to respond to it. Determining the right treatment for the right patient also conveys economic benefits by reducing the cost of treatment, because targeted care can stop or slow the progression of the disease and limit hospital stays. Further reduction of costs can be achieved through prevention and implementation of early detection mechanisms. As shown in the following cases, early diagnosis can lead to less costly treatment and faster patient recovery.

CASE 2:

A recent study has shown that targeted cervical cancer screening and HPV vaccination programmes lead to savings of about € 114,832 per cohort (KCE, 2015, p.23). However, so far only half of EU countries have implemented cervical cancer screening procedures (OECD, 2014, p.96) and there are differences with respect to the periodicity of screening, efficacy, coverage, quality of delivery and scope of target group (ibid.; Arbyn et al., 2009). More than simply recommending the extension of the screening procedures to all EU MS, we also call for the harmonization of procedures cross-country, to increase effectiveness and save financial resources, in the avant-garde as well as the lagging countries. It must also be recognised that for implementation to be successful, it should cater for the needs of MS, adapted according to their socio-economic context and clinical, cultural and organisational aspects.

Going Beyond the Usual Suspects

Early diagnosis and intervention means early recovery and less demand for complex specialised care, which often increases as a disease progresses. The examples below highlight how the use of screening methods for conditions other than the usual suspects i.e. cancer screening - can lead to savings and positive health outcomes.

CASE 3:

Testing for enteroviral meningitis decreases the duration of antibiotic treatment by more than two days and cuts down hospitalisation by two days through earlier discharge of patients with savings per patient amounting to € 1,116 per patient (MedTech Europe, 2012, p.23).

CASE 4:

Deployment of screening systems during labour can decrease neonatal infarctions and length of stay by 90%. Implementation of such screening in a Paris hospital led to reduction of neonatal hospitalisation days by 47% and reduced ICU bed days by 90% (MedTech Europe, 2012, p.23).

Conclusions and Call for Policy Action

The EU should draw on MS screening programs, the work of the European institutions, and existing collaborations, and should continue to support MS in the promotion and implementation of evidence-based screening. Allowing all stakeholders to follow cross-EU best practices could lead to uniform early diagnosis procedures across the EU.

In addition, the economic benefits of early diagnosis should prompt the development of an EU tool for policy evaluation and identification of cases where screening programs can be quantified as a viable, cost-effective solution. In this regard, the EU can extend its work using this tool by demonstrating how early detection and intervention can counteract the negative economic impact of a condition, e.g. cervical cancer, as well as including direct medical and indirect loss of productivity costs. Although the economic burden of a given condition can vary from country to country depending on various factors, this can help in advising MS on how population-based implementation of certain disease-specific screening programs is likely to have a positive impact on healthcare spending and health outcomes.

Moreover, the European Semester may continue to be used as a means to propose more focused national screening targets adapted to the needs and morbidity patterns of the MS in question that will result in more cost-effective primary health care services. Long-term cost-savings will automatically be accompanied by improved health, and will yield net positive savings to national healthcare budgets.

Therefore, it is important that the EU is able to provide a tailored assessment and generate recommendations concerning the benefits of early diagnosis for a spectrum of cases, so that MS recognise the value of implementing high quality screening programs. To be meaningful, the project should identify what screening programmes are needed and in which areas.

GENERAL RECOMMENDATION:

Facilitate the development of EU guidelines on frequency, scope and depth of screening and early diagnosis procedures, which could include tailored MS assessment. This could be achieved through collaboration among stakeholders under the joint structure of the EU working group tasked to work in this area. As highlighted across the four cases, substantial net-costs savings can be achieved if corresponding procedures are effectively and universally implemented.

III. TELEMEDICINE AS AN ALTERNATIVE TO FREQUENT AND LENGTHY HOSPITALISATION

"As regards professionals and health centres, ICTs mean faster transfers of information at lower cost, greater flexibility in the coordination of resources and, as a result, improved clinical and economic management as well as better service for all citizens".

(Marina Geli, former Catalan Minister for Health, 2010)

Hospitalisations are expensive: what can we do to lower the cost?

Hospital expenses are a main cost driver of European healthcare costs. According to Eurostat (2015a), the EU average share of hospital expenditure of total health expenditure rose from 38.71% in 2003 to 41.58% in 2012. If reforms are not implemented, the rising costs of healthcare are unlikely to decline. The challenge is intensified by an ageing European population, highlighting that Europe will continue to face an increasing rate of care-dependent older people and non-communicable diseases as the leading cause of chronic illness and disability - for which, the average length of stay in hospitals tends to be higher (Eurostat, 2015b).

Consequently, from an economic perspective, societal demographic changes along with varying but increasing demands will require an alternative approach that is economically sustainable for the EU. One solution could be telemedicine, which would prevent unnecessary acute or long-term hospitalisations. Provided that health care systems can further enhance integration and coordination, technological innovation together with new and modern forms of service delivery organisation can represent a viable solution to developing more personalised home care and community care.

From a patient's perspective, home care medicine could be beneficial in a multitude of ways: (i) it is delivered in the patient's home environment close to his/her social support network; (ii) it empowers patients responsibility in the management of their own health; (iii) it reduces the possibility of hospital acquired infections; and (iv) it can reduce re-hospitalization (Council of the European Union, 2009). In fact, Eron et al. (2010) have shown that home care as opposed to hospital care allows patients to recuperate from illness, injury, or surgical procedures more quickly and effectively. Furthermore, results from patient satisfaction studies on telemedicine indicate high levels of perceived satisfaction, often above the rates of expected satisfaction for traditional forms of health delivery. Results from provider satisfaction studies are generally quite positive as well (Whitten & Love, 2005).

Based on the current economic climate and the body of evidence, the overall objective of this section is to focus on telemedicine as a potential alternative to long-term hospital care; thereby shifting from inpatient to personalised or community-based outpatient care.

Proposals for the evolution of telemedicine: MedAssist and HealthInn

Evidence has shown that a significant number of patients do not adhere to and/or complete their assigned treatments (Martin et al., 2005). Accordingly, we propose the development of "*MedAssist*", to remotely provide better support to patients maintaining an independent life, through three main services:

- Ensuring that patients adequately follow their treatments by reminding them to take their drugs or to complete their daily exercises.
- Supplying the patients with the necessary tools and information on how to conduct home-based monitoring of physiological data (e.g. weight, blood pressure, pulse oximetry and respiratory rate) that would be automatically transmitted to the health centre for monitoring.
- Offering online follow-up and consultations with health professionals. This could decrease the probability of having to be (re-)hospitalised, whilst stimulating better access to healthcare providers (Clark et al., 2007).

MedAssist is able to act as an interface between patients and health professionals and thereby enable a small team of health professionals to better support a group of patients by providing tailor-made treatment that meets patients' specific needs.

To further enhance communication and coordination between health professionals and patients and at the same time act as a form of 'support group', an online health intermediary platform called "*HealthInn*" could be created so that patients can exchange their experiences, ask questions about the management of their disease, and receive prompt medical advice. Ultimately, such a platform also enables patients to feel empowered, taking an active role in managing their health with the guidance of professionals. However, data protection, transparency and ethical considerations must be taken into account in the development and deployment of ehealth tools.

For example, the European project Giraffplus combines technologies and long-term monitoring (network of sensors monitoring physiological data and activities) to promote independent living for the chronically ill and elderly citizens. Social interaction with close relatives and health professionals was also made possible thanks to the help of a telepresence robot.

Cost-efficiency of telemedicine

Telemedicine is deemed cost-effective when the cost per quality-adjusted life year (QALY) is decreased compared to traditional approaches of providing care. Indeed, telemedicine saves time and money for the patient and providers whilst achieving lower hospital admissions and re-admissions by replacing emergency care with routine care. But the economic benefit depends on the targeted location and population as well as on the medical specialisation required.

Notable examples:

For post total knee arthroplasty, when all costs are included, in-home rehabilitation has been proved to be cost saving when there is a minimal distance from the medical centre or when patients have mobility or travelling difficulties (Tousignant et al. 2015).

In the case of chronic heart failure, which is a serious clinical issue associated with a significant economic burden, the implantation of cardiac electronic devices is increasing and requires monitoring. Studies have shown that with remote monitoring, fewer patients saw their condition deteriorate when compared with standard care (Arya et al., 2008). According to Boriana et al. (2013), the waiting time for clinical decisions was reduced, as was the frequency of health centres visits, resulting in higher cost efficiency as a whole. Roselyne Bachelot, former French Minister for Health and Sports, also noted that *"Home based telemonitoring of simple clinical indicators [...] transmitted to a first aid centre could enable us to not only prevent the appearance of acute complications in patients suffering from chronic heart failure, but also to save them from having to travel to consultation, and prevent unplanned hospitalisations"* (European Commission, 2010).

Regarding hypertension management, home blood pressure management telemonitoring showed a high degree of acceptance by patients, and the quality of services provided by telemedicine was considered as good as in traditional consultations. It was also associated with lower medical costs in comparison to standard care, even if it was to a certain extent offset by the cost of the technology. Such telemonitoring also lowered the social costs related to increased frequency of cardiovascular events when hypertension was not controlled, and was particularly effective with non-adherent and high risk patients (Omboni et al., 2015).

Research into the cost-effectiveness of telemedicine is increasing, but gaps remain (The Health foundation, 2011), particularly when considering large sample studies. Nevertheless, there is a general tendency for studies to support the concept of telemedicine cost-efficiency, especially for specific disease groups such as hypertension, diabetes, respiratory, metabolic and cardiac diseases (Clark et al., 2009). Furthermore, the methodologies used and the type of medical devices that are considered differ significantly across studies, which makes it difficult to obtain a comparative and global overview of the results. Transferability of cost-effectiveness findings across countries also need to account for wider differences in the relative cost of medical technology vis-a-vis labour workforce costs.

Challenges and Funding of telemedicine

The implementation of telemedicine across the EU faces challenges. Telemedicine brings new ways of practising medicine and delivering care but is likely to face resistance. Some of this reluctance can be explained by a lack of awareness regarding the benefits of telemedicine. Accordingly, awareness must be raised to incentivise health professionals' involvement in the development and implementation of telemedicine, as they may know best what is needed on the ground. Another challenge is the variety of devices associated with independent systems, which requires interoperability. Furthermore, devices should be affordable and user-friendly in order to cater for all segments of the population and lessen the risk of inequalities in their use (Marschang et al., 2014).

Another barrier to the wider use of telemedicine is the low level of reimbursement. In fact, availability of and access to telemedicine often depend on patient's willingness to pay out-of-pocket. Therefore, in order to avoid the perpetuation of inequalities and enhance the affordability of new technologies in health, MS should incorporate telemedicine in their payments and reimbursements schemes in a way that incentivises better use and uptake of telemedicine both by patients and health professionals (e.g. reimbursement to the patients for HealthInn online consultation, and lower payments to hospitals if hospitals choose to discharge with standard follow-up instead of discharging with MedAssist when medically possible).

Additionally, in order to facilitate the availability of telemedicine within their healthcare infrastructure, MS could seize EU funding opportunities through EU Structural and Investment funding and/or through the Public Health Programme, particularly in relation to the development of ehealth innovations. Under the Horizon 2020 Programme, funding is also foreseen to support the development of healthcare innovative projects and strengthen their evidence base, as is currently the case with the SAEPP project which aims to allow frontline clinicians to provide more high-level patient care on the spot and in turn, help reduce unnecessary commuting to hospitals.

GENERAL RECOMMENDATION:

Investing in patient continuity of care before and after hospitalisation using telemedicine tools for targeted patients and diseases would help avoid further hospitalisations, known to be costly and moderately popular amongst patients. Telemedicine services have the potential to enhance patient empowerment, and increase their quality of life and independence. When well-integrated within the healthcare delivery process, such solutions also have the potential to enable more efficient provision of healthcare, thereby contributing to better health systems sustainability.

IV. WELCOME TO THE EUROPEAN CENTRES OF EXCELLENCE - SPECIALISED CARE AT YOUR DOORSTEP?

"Europe [is] a giant 'natural laboratory' for health systems, with enormous potential for countries to learn from each other. European cross-border healthcare is the key to unlocking that potential..."
(Nick Fahy, Luxembourg, September 2010).

Taking the Directive on cross-border healthcare forward

Deemed the first piece of EU legislation enacted specifically in the area of healthcare services, the Directive on patients' rights in cross-border healthcare (2011/24/EU) is ground-breaking in the field of healthcare cooperation. Yet little is known of what value EU involvement in cross-border healthcare activities could generate. This led the Committee to explore the opportunities related to putting the concept of European Centres of Excellence (CoE) into practice and bringing together highly specialised healthcare providers from different MS across the EU.

Chapter IV of the Patients' Rights Directive relates to co-operation of health systems, including the setting up of European Reference Networks (ERNs) between healthcare providers and centres of expertise in the MS, aimed at pooling resources in specialized healthcare and improving access to and provision of high-quality specialized care especially in the area of rare diseases (Art. 12, OJ, 2011).

Although the setting up of such networks at national level is voluntary, the Commission has an important role to play in encouraging and facilitating the process. As provided for in the Directive, the Commission is mandated to define the ERN criteria through implementing acts. The next step will be a call for networks in the fourth quarter of 2015. Subsequently, the networks will be established in the second quarter of 2016. In an expert conference organised in June 2014, it became clear that ERNs face challenges, but offer promising opportunities.

This section examines the opportunities from sharing best practices in cross-national networks and pooling of knowledge and resources, facilitating more cost-effective use of resources across MS, particularly in light of financially constrained health systems.

We believe that there is potential for European co-operation and sharing of resources where expertise is rare, in highly specialised healthcare areas. This is especially important for MS in border regions or those that are unable to provide high quality specialised treatment to patients because of lack of infrastructure, capacity constraints or very low numbers of patients requiring such treatment because of the low prevalence of a disease. In this respect, cooperation on rare diseases can generate substantial efficiency gains.

Nonetheless, in order to determine what value ERNs can bring to the picture, it is important to define them. Since the Directive does not specify the exact meaning of the concept of ERNs, their structure or function, achieving a common understanding of the elements that constitute a reference network (Palm et al., 2013) is a challenging task for policy-makers in implementation. Based on a recent study, with examples of network governance models, a European centre of reference network can be portrayed as a focal point (medical centre/hospital/clinical team) bringing together different healthcare providers and centres of excellence with similar specializations and expertise across borders (Palm et al., 2013).

Since the geographical scope of an ERN is EU-wide, a steering committee working at EU level guiding and assisting the network particularly in its early stages of establishment is crucial. With regard to its disease-focused scope, ERNs may include specialised oncology care and more common chronic conditions such as diabetes.

This section gives recommendations as to how the ERN initiative might be successful. We analyse a case in France and Germany where similar cooperation between healthcare providers is already in place. Although on a smaller scale, it could serve as a pilot project for the official centres of excellence.

Taking stock of 'ERN predecessors': two case studies

Cross-border collaboration has been tried and tested before, but there is room for improvement, and previous experiences could help to take the concept further. We analysed two cases of cooperation on a small bi-lateral scale.

The University Hospital Aachen, Germany and the Maastricht University Medical Center+, the Netherlands are located in the Euregio Meuse-Rhine, "a particularly active and long-established entity composed of the wider and adjacent border regions of Belgium, Germany and the Netherlands" (Glinos, Doering & Maarse, 2013; p111). The collaboration includes the creation of the first cross-border European Vascular Center Aachen-Maastricht" (University Hospital Maastricht and Maastricht University, n.d.). Additionally, vascular surgery was the "first area of active collaboration" (Glinos, Doering & Maarse, 2013; p113). The establishment of the hospital arose from a long-standing regional history "of political and institutional collaboration" (University Hospital Maastricht and Maastricht University, n.d.). The cooperation was formalized in 2004 (Glinos, Doering & Maarse, 2013), but challenges persist.

Aachen and Maastricht made use of their geographical proximity in combining resources, but the Cross Border Hospital of Cerdanya (Spain – France) was established because of the large distances to access national acute care facilities: "On the Spanish side, there is a hospital in Puigcerdá with, however, limited capacities, [and] on the French side, the next hospital for acute care is about 150 km away" (Institute of Public Health NRW, 2007; p105) Also in this case, collaborating in healthcare – and more specifically running a joint hospital – was subject to long discussions before the hospital officially opened in 2013.

Potential opportunities for ERN funding

EU involvement in the area of cooperation for specialised treatment may need to go beyond providing top-down solutions to MS, as the Commission may not have the right expertise. However, it can provide opportunities for dialogue between MS at an EU level, so that Europe can be a 'test bed' for different solutions to similar problems, as well as facilitating funding opportunities to support MS in their efforts.

Co-operation in health systems falls under softer measures of the Directive. However, their inclusion in the Directive allows for funding for a long-term co-operation structure at EU level.

Instruments that deserve further exploration in terms of their funding potential for innovations in healthcare infrastructure, as well as for transnational actions, include European Structural and Investment Funds (ESIF). The cross-border hospital collaboration between Aachen and Maastricht has also been partly funded by EU funds via the INTERREG Community initiative. The cross-border hospital of Cerdanya made use of European Regional Development Funding (ERDF) as part of the "France-Spain-Andorra" cross-border cooperation operational programme - a continuation of three generations of cross-border cooperation programmes between these countries within the framework of the INTERREG Community Initiative (European Commission, 2014).

Recommendations to make ERN's and cross-border healthcare collaboration a success story

Besides creating a clear governance structure for knowledge sharing and care coordination among EU countries, the innovative character of ERNs can also lead to long-term economic benefits for MS, reducing costs while improving health outcomes and patient access to healthcare, and overcoming the barriers of distance. This is particularly relevant for small countries with limited capacity and resources to provide comprehensive highly specialized services, because it can improve access to treatment for their citizens even if this means going to the nearest hospital in a neighbouring MS (Rare Diseases Task Force, 2006).

In the future, it will be difficult for stand-alone regional hospitals to offer a full range of care services, because some treatments require adequate population levels. Concentrating resources via ERBs and considering joint procurement of medicines and medical devices where appropriate could maximise cost-effective use of resources. (Rare Diseases Task Force, 2006). In fact, concentrating certain medical procedures in a limited number of hospitals has demonstrated that it can improve health and outcomes (in terms of mortality rates) (Palm et al., 2013)

ERNs offer opportunities for pooling data and know-how and provide training for health professionals. Furthermore, they could act as benchmarks to share best practices (Rare Diseases Task Force, 2006). Rare Diseases Europe (EURORDIS), a non-governmental patient-driven alliance, identifies sustainable funding as well as continued evaluation as key to determining the success of ERNs, and considers the establishing of good co-ordination among ERNs as a vital component (n.d.).

In brief, despite some short-term administrative burdens, in the long-term ERNs have the potential to reduce costs due to centralization of resources and economies of scale, while ensuring Europe-wide access to high quality healthcare.

Although funding opportunities under Horizon 2020 could facilitate this, the EU could also consider setting up a financial framework dedicated to cross-border healthcare cooperation, which could fund comparative studies and innovative projects to advance the agenda on ERNs. It would also be beneficial to invest in projects that set the groundwork for cross-border cooperation in health care, e.g. supporting language courses for medical students at universities within border regions. Cultural differences should be taken into account as they may affect the success of cross-border developments. Evaluating and monitoring the work of projects is crucial for continuous learning and could facilitate best-practice sharing.

Previous cases show that patients demand faster and simpler access to healthcare. Learning for the example from the 'Euregio Meuse-Rhine' case, where collaboration between health insurance funds in the respective border zones is well-established, it is important to consider facilitating the adequate reimbursement for patients' treatment received in a European centre of excellence.

ERNs must also ensure that there are quality and safety mechanisms in place that are monitored regularly. The functions of an ERN should not only include best practice dissemination between the centres of reference within the network and to the outside world and pooling of resources, but more importantly, provide patient referral to a centre within the network that is best suited to a patient's treatment needs. Also, with the participation of healthcare providers, after receiving treatment at a centre of reference, discharged patients should receive adequate continuity of care (Palm et al., 2013).

Despite the challenges that remain to date - no agreed definition and standards on these specialised centres, how they will operate in practice and how they will be inter-connected via a network, if implemented accordingly - ERNs have the capacity to act as focal points and shared facilities for exchange of knowledge and expertise, providing opportunities for learning and further training even from a Research and Development perspective.

V. CONCLUSIONS

"In the future, there will be no real Europe, without a Europe of Health".
(David Byrne, former European Commissioner for Health, n.d.)

Empirical evidence on the links between health and wealth is not a new phenomenon (World Bank, 1993; Suhrcke et al., 2005). In fact, studies have demonstrated how economic returns from health investment can boost the economy (Mackenbach et al., 2007; WHO Europe, 2008) as well as contribute to social well-being (Figueras et al., 2008). However, in recent years, there has been a growing fear that health systems are becoming unsustainable and stretched beyond their means. Hence, making an economic case on savings in health through prevention and managing of illness in the most efficient and sustainable manner is important.

This paper has sought to put forward recommendations for cost-effective solutions across healthcare, touching upon different stages of health care services provision across Europe.

Starting with prevention and primary health care, the diffusion of screening innovations needs to be continually evaluated to assess their effectiveness and uptake and more research could be done in this regard. Financial pressures may lead to under-estimating the importance of prevention and screening practices that in the long-term ease costly complex tertiary care burdens.

Policy-makers may have adequate evidence to support the implementation of organised and population-based screening programs but do not invest in the appropriate human or financial resources to do so. Hence, the readiness of the health system must be coupled with political will and priority-setting in the assimilation of innovations.

The development and availability of new health technologies is shifting the functioning of health systems and the roles and responsibilities of patients. Boosting prevention programmes using ehealth tools may be seen as dehumanising the relationship between patients and professionals, but it provides opportunities to save time and improve the efficacy of patient-doctor contact, empowering patients and allowing for more personalised care. Health literacy and ICT solutions will be needed, however, to produce satisfactory results.

The paper also explored opportunities related to one of the prime areas for cross-border healthcare networking and collaboration - the establishment of ERNs especially for rare diseases where pooling of resources to effectively treat such diseases is essential. However, more work is needed to assess the economic added value of setting up these centres of excellence and how their establishment can be facilitated. The input from civil society and patient representative groups should be welcomed in informing policy-makers on what is needed on the ground from a patients' perspective.

Research and data collection is crucial and we suggest that the Commission supports further funding for research, particularly in cost-of-illness studies that estimate the burden of a disease in monetary terms – in a language that speaks to decision-makers. There is also a need for more well-designed and in-depth economic evaluations on telemonitoring interventions, or so-called 'getting out of the hospital' programmes. Research to date has not focused on collating robust financial data, and more evidence is needed to support the claim that discharging patients early to hospital-at-home care delivers savings for healthcare systems (The Health Foundation, 2011).

Recent Council Conclusions on innovation for the benefit of patients (Council of the EU, 2014) show committment to advancing the agenda on innovative ways of managing the health sector. However, to do this through showcasing the economic benefits of innovations in healthcare, a move is needed away from the premise that investing in healthcare innovation is costly, and towards recognising the cost-effectiveness in the long-term despite short-term investments.

The Committee recommends that the European Parliamentary Interest Group on Innovation in Health and Social Care explores the above further and calls upon the Commission to consider developing concrete solutions on how healthcare systems can become more cost-effective and sustainable in order for MS to be able to live up to the health-related CSRs as part of the European semester. The independent expert panel on effective ways of investing in health that was set up in 2012 could be a useful asset and contribute further to the European semester work on healthcare systems.

Governments often have a desire to see the immediate results of their actions, so there is a risk that economic benefits of cost-effective promotion and prevention measures that often take years to mark their impact can be overlooked. Commissioner for Health and Food Safety Andriukaitis has pledged to push MS to act on their health commitments and move away from cure, focusing their efforts instead on the promotion and prevention that are at the heart of public health. We urge the Commission and MS to step up efforts on health systems by making health a political priority which merits careful consideration.

As spelled out in the Commission's 'Investing in Health' agenda, health expenditure is a social investment in our future and in the future of generations to come (European Commission, 2013). Higher healthcare expenditure does not necessarily mean better health, but timely and smart investment today will reap benefits tomorrow. Without health, there is no growth and no gains, and despite the importance of the economic dimension in healthcare, there is no economy without people. Thus, it is important to create an enabling environment for cost-effective healthcare reforms and maintain a long-term perspective.

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