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For more than a decade, demographic change has been a prominent theme in European, national and regional policies. Ageing and population decline are the most challenging trends for the future, with critical variations in demographic patterns between the European regions, depending on several socio-economic factors. In addition, demographic trends have effects on the spatial conditions of the EU countries, with peripheral and rural areas as well as post-industrial urban and mountain areas at greater risk of de-population. These demographic trends have important socioeconomic and policy implications due to their impact on the provision of services of general interest, including social and healthcare services, and urban-rural population imbalances. Furthermore, demographic change is exacerbating the processes of societal fragmentation and polarization of urban societies, with growing disparities in terms of social inclusion, economic capacity and service accessibility.

Demographic change is thus a mainstream topic involving various policy areas and levels of intervention, including social and healthcare systems, urban and rural planning, transportation and social infrastructure, economic and competitiveness growth, education, training and social innovation policies. Policy responses to these phenomena call for an interdisciplinary approach and relate to regenerative interventions, investments in infrastructure (transport, ICT and social infrastructure) and providing social services to improve the living conditions and wellbeing of the resident population and the fairest accessibility to services.

This new changing scenario has major policy implications necessitating novel spatial planning approaches that should complement standardised methods of territorial governance with lines of development inspired by innovation. Consequently, providing mobility and ICT-based services, social housing, healthcare for the elderly or community facilities, for example, must incorporate a certain degree of experimentation in order to be tailored to the new social landscape. This requires an effort to promote social innovation for service provision and a strategy to make territorial governance more resilient to the changing scenario.

The EU cohesion policy, within the scope of territorial cooperation, can play an important role in supporting regional adaptation to demographic change and reversing the risks of wider development gaps between regions into new opportunities for growth and inclusiveness. In this direction, the ERDF co-funded the SPHERA project, starting from the results and good practices gathered through experience in the Alpine Space Programme, has investigated possible new ways of combining spatial planning and healthcare policies for boosting wellbeing and inclusive growth into a more proactive approach in demographic policymaking. This path is also intended to offer an opportunity for reflection on mutual institutional learning and setting up a new generation of transnational activities.

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# The SPHERA project: Spatial planning and health systems for enhancing territorial governance in the Alpine Space Programme

SPHERA is a transnational project cofounded by the Alpine Space Programme under the European Territorial Cooperation objective of the European Union's cohesion policy. With a duration of sixteen months – from September 2013 to December 2014 – the initiative involved six partners with cross-sectorial expertise in both spatial planning and health, which are core dimensions of the operation: the Lombardy region (through the General Directorates for Health and Spatial Planning), the Slovenian central research institute for urban spatial planning and related disciplines (UIRS), the National Institute of Applied Sciences at the University of Lyon (INSA), the University Hospitals of Geneva (HUG), the Bruno Kessler Foundation (FBK) in Trento through its Institute for the Impact Evaluation of Public Policies (IRVAPP), and the Research Centre for Health Innovation (IRCS) and the Kufstein Tyrol University of Applied Sciences (FHK) with the Department of Web Business and Technology with its area of study in eHealth. The spectrum of actors involved is completed by a number of project observers from the public and private sectors, including central and regional government authorities, academia and competence centres. Capitalising on the results of Alpine Space Programme projects, SPHERA aims to enhance territorial governance focusing on inclusive growth in order to integrate healthcare in spatial planning at a transnational level by addressing issues such as demographic change and accessibility to services of general interest in order to improve social cohesion, wellbeing and quality of life. Learning from past achievements, SPHERA has the ambition to contribute to preparing the ground for a new generation of projects in the Alpine Space Programme for the 2014–2020 period by identifying gaps and new areas for cooperation, and supporting synergies.

**Keywords:** territorial governance, spatial planning, health, wellbeing

## 1 Introduction

Territorial governance is one of the policy areas addressed by the 2007–2013 period of the Alpine Space Programme.[1] This priority line has explored concepts such as spatial planning, urban development, accessibility to services of general interest (SGIs), activities for social inclusiveness and demographic change, and models for inclusive and sustainable growth. Many Alpine Space Programme projects have addressed these issues, producing valuable results for these sectors of intervention, resulting in methodologies, tools, guidelines, recommendations and policy orientations. The topic "the future of urban areas" is central to sustainable development within the Alpine Space Programme: a new model of city has to be envisaged with a realistic approach that also takes into account the lifestyles of urban residents and their wellbeing. Health systems are also facing critical challenges linked to the need to redesign sustainable health models and governance of health systems in a developing territory in terms of services, resident population and budget constraints. Important issues affect the two dimensions of spatial planning and health systems, including the need to improve the quality of life and healthcare for elderly people and access to care for people living in remote and medically underserved areas; the need to face urban decline in terms of activities countering pollution, waste, traffic and poverty necessary to guarantee a healthy population living in a sustainable city; and the necessity of strengthening inter-generational relationships, considering the ageing trend and demographic challenges, for ensuring a "re-humanised" urban area.

The Alpine region is one of the most diverse areas in the heart of the European Union. It is an attractive working and

living space for seventy million people, covering an area of 390,000 km² and comprising some of the most important European metropolitan areas. It is also an important contact zone, including various European cultures and languages. The extent of territorial heterogeneity is one of the main features that distinguish the Alpine region from other parts of Europe: mountains and surrounding areas, accessible and remote valleys, metropolitan regions and towns, lowlands and high plateaus all create different preconditions for economic and social development. Current demographic trends within the Alps show that in most Alpine areas there is an ageing process reflected in the share of people over sixty-four in comparison to the respective national average, with the exception of Austria, France and Slovenia (Villazzo, 2011).

The Alpine Space Programme is an EU transnational cooperation programme for the Alps involving partners from the seven Alpine countries (Austria, France, Germany, Italy, Liechtenstein, Slovenia and Switzerland) working together to promote sustainable regional development. The programme is jointly financed by the European Union, through the European Regional Development Fund (ERDF), and the partner countries (members and non-members of the EU) taking part in the activities. The overall programme budget for the 2007–2013 period amounts to almost EUR 130,000,000 devoted to increasing the competitiveness and attractiveness of the cooperation area by developing joint activities in areas where transnational cooperation is required for sustainable solutions. The Alpine Space Programme for 2007–2013 identified three thematic fields of cooperation, referred to as priorities: Competitiveness and Attractiveness, Accessibility and Connectivity, and Environment and Risk Prevention. In this context, the SPHERA project[3] falls under the Accessibility and Connectivity priority, which among other things aims to secure fair access to public services, information, communication and knowledge infrastructure within the programme area, enhancing connectivity to reinforce polycentric territorial patterns and lay the basis for a knowledge-driven information society promoting sustainable and innovative mobility models with specific regard to issues related to the environment, human health and equality.

## 2    Project objectives

The overall SPHERA project[4] objective is to enhance territorial governance in the Alpine area with respect to dimensions of spatial planning and health systems, addressing intervention areas such as accessibility to SGIs, demographic change, social inclusiveness and quality of life, with the aim of providing strategic orientation across the thematic field of "inclusive growth" as one of the main priorities featuring the European Cohe-

sion Policy for the next programming period (2014–2020).[5] From the long-term perspective, the project has the ambition to contribute to policy development in the targeted dimensions pursuing the following specific objectives:

- Monitoring and emulating the experiences and results attained by the Alpine Space Programme projects in terms of transnational needs, policy development, institutional responsibilities and competence;
- Evaluating and capitalising on the projects' main quality achievements, through dissemination activities targeting the relevant policy level and actors, with the aim of verifying and measuring the impact on regional, national and European policies;
- Identifying uncovered needs, challenges, opportunities and threats affecting the concerned areas;
- Providing contributions for setting up a new generation of Alpine Space Programme projects beyond 2014 and supporting the creation of synergies between the Alpine Space Programme's future programme period and initiatives and programmes already in force and being defined at the European, national and regional levels making it possible to promote cross-fertilisation among policymakers and decision-makers involved at various levels of governance.

Based on spatial planning and health systems, the SPHERA transversal approach meets the Alpine Space Programme's specific objectives for enhancing balanced territorial development of the targeted territories and securing fair access to infrastructure and SGIs and is fully coherent with the expectations to create added value for paving the way to the Alpine Space Programme for 2014–2020.[6] Furthermore, SPHERA is pursuing the EU 2020 priority, which aims to build a cohesive society by reducing health inequalities, improving quality of life, promoting social inclusion and encouraging sustainable governance models in its policy development perspective.

## 3    The project's methodological approach

The SPHERA project's methodological approach has been conceived along four main logical phases: 1) analysis of achievements reached by the Alpine Space Programme projects for 2007–2013 in the thematic field "inclusive growth" addressing health and spatial planning, 2) capitalisation and valorisation of valuable project results, 3) identification of common needs, trends and future challenges in the addressed areas and 4) design of the prospective policy activities to be implemented for the new set of projects covering the period from 2014 to 2020. This approach relies on the conviction that both spatial planning and health topics are pillars of territorial

governance and need to be addressed at a transnational level to maximise the lessons learned and the results achieved in this domain, transfer them to a broad audience of stakeholders and build up agreed-upon viable future pathways. By leveraging the need of developing joint activities in areas where transnational cooperation is required for sustainable solutions, the SPHERA project is eager to cross-analyse these dimensions in a unique scenario with the aim of clustering themes that can increase the attractiveness of the Alpine Space Programme cooperation area and that are complementary to diverse EU sectorial policies and initiatives for inclusive growth. Because SPHERA is based on gathering, analysis and measurement of experiences from Alpine Space Programme projects generated in the past programming period, transnational cooperation, which is distinctive of the Alpine Space Programme, is a prerequisite for the success of the initiative. These four logical phases have been grouped into two macro-activities called "methodology and analysis" and "mapping and shaping".

## 3.1  Methodology and analysis

This activity has pursued three main objectives: 1) to identify and analyse the transnational common needs and trends of the two dimensions addressed by the SPHERA project in the light of inclusive growth as a thematic field of the next cohesion policy programming period, 2) to map the achievements of the Alpine Space Programme projects from 2007 to 2013 with respect to these dimensions and 3) to provide a list of socioeconomic indicators for viable means of evaluating policy impacts. These activities are devoted to preparing the ground for setting the scene of the Alpine Space Programme's future projects (2014–2020) in health and spatial planning for enhanced territorial governance. The outputs have been articulated through six deliverables: 1) a report on transnational common needs and trends in the Alpine Space Programme, 2) a SPHERA atlas of the Alpine Space Programme including a panel of indicators suited for impact evaluation, 3) a methodology to identify relevant Alpine Space Programme project results, 4) the SPHERA Synoptic Sheet (SSS) for collecting data on the projects analysed, 5) a report on the main project features, valuable results and capitalisation paths and 6) a midterm workshop devoted to validating the analysis results and the panel of indicators to be used in the next macro-activity for setting up the map of major health and spatial planning issues that could be covered by the Alpine Space Programme 2014+ projects for enhancing the territorial governance strategy of the programming areas.

## 3.2  Mapping and shaping

This activity had a twofold objective: 1) to map, strengthen and further investigate the macro-areas and sub-areas identi-

fied in the analysis phase previously carried out in order to understand and better qualify uncovered topics that could be at the core of the next set of projects in the Alpine Space Programme for 2014 to 2020 and 2) to offer policymakers, decision-makers and stakeholders orientations and recommendations for driving the agenda setting of the future programming period. The first objective was implemented by setting up five thematic seminars that addressed and examined the main themes at the core of the health and spatial planning dimensions, and their relation from the perspective of inclusive growth. More specifically, seminars have explored these issues in consideration of the needs and trends identified through examination of the Alpine Space Programme's 2007–2013 projects with the aim of mapping the current situation in the regions involved in SPHERA. Seminars have been targeting specific subjects and are customised to the local environment (government, academia, business and research). Furthermore, a gap analysis will be carried out in order to raise and point out topics relevant for spatial planning and health policies and plans and that could be central in projects initiated in the new programming period. The second activity is intended to move from the overall project results and finally propose novel directions that the implementation of the Alpine Space Programme for 2014 to 2020 could take.

# 4    SPHERA analysis results
## 4.1  Transnational common needs and trends in the Alpine Space Programme

According to the European Union, inclusive growth means "empowering people through high levels of employment, investing in skills, fighting poverty and modernising labour markets, training and social protection systems so as to help people anticipate and manage change, and build a cohesive society."[6] It is about ensuring access and opportunities for all throughout their lifecycle and spreading economic progress to the entire EU, thus strengthening territorial cohesion.

At the policy level, social inclusion is a pathway to achieving social justice and allowing all people a fair quality of life and full participation in both economic and social life (Forum of Non-Government Agencies, FONGA, 2011). Nevertheless, the World Health Organization (WHO) defines wellbeing not only as the absence of diseases or infirmity, but includes economic, social and psychological conditions (personal and collective). Therefore, wellbeing means satisfying quality of life through an adequate level of education and participation in social and economic life, beyond the absence of physical diseases. To secure a satisfying level of wellbeing, social inclusion and territorial cohesion are central issues.

In giving all people a fair standard of quality of life, it is important to look at them not as objects but as people with their own voice (FONGA, 2011). In this regard, the regional strategies introduce a new dynamic understanding of EU governance and the role of space or territories in an integrated European health policy. Therefore new interest is growing in integrated planning on health and spatial planning (Fauldi, 2010). At the strategy level, health and spatial planning are on the same plane; for example, the risk of ongoing territorial concentration of services for several mountain areas has a low quality in relation to new needs that cause a decreasing demand in existing services, thus triggering a vicious circle (Crawford, 2010). Accessibility to services for all, innovative solutions for health, designing spatial contexts for better quality of life, age-friendly cities and environments, urban peripheries that are more inclusive and green, and quality of housing: how can health and spatial planning improve the social inclusiveness of territories? How are health and spatial planning addressed in the reference policy and strategic framework at the European and regional levels? Finally, spatial planning is an important lever for promoting sustainable development and improving health and, more generally, the quality of life and social inclusiveness.

It is important that the Alps started an ageing process before the rest of Europe. Nevertheless, it is equally important that the causes of population ageing have not been exactly the same in the Alps and elsewhere in Europe (Crawford, 2010). A fundamental demographic difference between the Alpine regions and Europe as a whole is represented by the far greater weight of out-migration, mainly younger people, as a factor conducive to structural ageing (Crawford, 2010). Heterogeneity within the Alps has been identified in areas with different specific features (Maurer et al., 2013; Table 1).

The differences among Alpine areas are barriers that are not only due to topographical constraints, but also to political, linguistic and cultural identities. According to VicHealth,[7] there are four key reasons why factoring health into planning has a positive impact on population health (Barton, 2010). Good planning can:
- Reduce inequalities between different socioeconomic groups for accessing houses, facilities and transport, and protecting vulnerable sectors of the population such as the elderly and children;
- Increase the amount of incidental physical activity by improving access and providing walkable, mixed-use communities, thereby reducing the burden on disease, disability and mortality due to sedentary lifestyles;
- Contribute to improved health of the population by reducing air and water pollution and greenhouse emissions, thus combating the threat of climate change;

- Contribute to a changed social environment by improving the liveability of the streets, making them safer and improving communication between people and community cohesion.

In the light of these trends, the literature analysis focuses on the link between health and spatial planning policies, seeking to determine the extent to which they can contribute to inclusive growth. Particular emphasis has been placed on how spatial planning can be exploited to improve health and, more generally, quality of life: spatial planning can directly affect health or it can have an impact on socioeconomic factors influencing the quality of life and thus health indirectly. Accordingly, within the framework of all-inclusive growth, this literature review goes in three main directions:
- Analysis of the distribution of health outcomes across individuals, social groups or territory;
- Analysis of the processes of generating the principal pathologies; that is, social factors that impact health and their distribution across social groups or territory;
- Analysis of access to and quality of healthcare services and SGIs across social groups or territory.

The literature about the Alpine region is vast and heterogeneous, and many aspects of quality of life can be taken into consideration. Hence, it was necessary to narrow the focus of the SPHERA desktop research through a reasonable choice of several broad aspects of health and spatial planning: health status, access and quality to healthcare services, socioeconomic factors that impact health (such as poverty, deprivation, education, etc.) and, finally, spatial planning for different scopes (such as accessibility, social inclusion and overall attractiveness of the Alpine Space Programme). Within each macro area, several sub-areas have been identified as clue dimensions that have been used as guidelines for the literature review (see Table 2).

The outcomes of the analysis can be summarised as follows. The distribution of health outcomes largely follows recent EU outlines, in which inequalities in health (both physical and mental) and risky behaviours follow the patterns of social inequalities. The literature shows that improved access to healthcare plays a major role in mitigating the adverse effects of social inequalities on health outcomes. Integrated care has the potential to reduce health access inequalities, and also to increase the efficacy and effectiveness of healthcare thanks to investment in ICT for healthcare. Systematic promotion of healthy behaviour also acts as a prevention mechanism for non-communicable diseases. Other channels through which comprehensive and well-structured territorial governance positively influence both social and health outcomes have been assessed. An efficient housing policy that raises the quality of housing is an important factor for social inclusion, participa-

**Table 1:** Specific features of different Alpine areas.

| Area | Specific features |
|---|---|
| Urban areas | This includes thirty-seven regions (20% of all Alpine regions) characterised by medium-sized cities or suburban areas and densely populated valley areas. There is a higher share of working-age people (fifteen to sixty-four years old) and the share of old people (over sixty-four) is clearly lower than average. Demographic growth is natural and also caused by in-migration. |
| Dynamic city and rural areas | This includes thirty-seven regions (20% of all Alpine regions) characterised by a large total of population, but usually with only one large centre surrounded by sparsely populated rural areas. The high population is caused by natural effects and strong in-migration. |
| Ageing rural areas | This includes twenty-two regions (12% of all Alpine regions) characterised by an average dense population, major metropolitan areas, or transition areas to a mountain region. There is very strong population ageing due to the low share of people under fifteen and people fifteen to sixty-four years old, combined with low natural growth and high in-migration of older people. The migration balance and age group shares give some evidence of a brain drain effect. |
| Rural areas with out-migration | This includes sixty-nine regions (37% of all Alpine regions) characterised by sparsely populated small region (clearly below average), low natural growth and low in-migration determining population stagnation or decline and, in part, out-migration. |
| Rural growing areas | This includes fifteen regions (8% of all Alpine regions) characterised by a large overall population, but a less densely populated region with a high share of people under fifteen and significant natural population growth, as well in-migration triggering the total population development. |
| Others | This includes seven regions (4% of all Alpine regions) and metropolitan areas. |

**Table 2:** SPHERA macro-areas and sub-areas.

| Macro-areas | Sub-areas |
|---|---|
| Health status | Physical health |
| | Mental health |
| | Risky behaviour |
| Healthcare services | Access to services and barriers to healthcare |
| | Quality and continuity of services |
| | Adequate health promotion and patient empowerment |
| Socioeconomic factors that impact health | Social class and inequality |
| | Income and poverty |
| | Material deprivation |
| | Education |
| | Social networks |
| | Migration and depopulation |
| | Demographic ageing |
| | Employment and work conditions |
| Spatial planning and accessibility | Accessibility to local facilities |
| | Accessibility to public transport |
| | Accessibility to the public or to SGIs |
| Spatial planning and social inclusion | Enhancing social networks and improving open spaces in facilities |
| | Quality of housing |
| | Social and institutional participation |
| Increasing the attractiveness of Alpine Space Programme areas | Economic competitiveness |
| | Tourism competitiveness |

tion in social and economic life and reducing the sense of loneliness. An integrated mobility system tackles the uneven distribution of public transport and improves cross-border mobility, also facilitating access to general-interest services, which further reflects on the overall quality of life and the attractiveness of a particular area. Another special feature of both the EU and especially the Alpine area is the phenomenon of demographic ageing, which must not be ignored but turned

into a potential through fostering a "silver economy". Strategies to avoid brain drain effects and the effective social inclusion of immigrants must also be taken into consideration because of considerable in-migration and out-migration. Finally, an overall strategy to promote the potential of small Alpine towns by incentivising tourism and promoting polycentrism based on small towns should be a long-term goal that brings general benefits for particularly disadvantaged areas, which should not lose their comparative advantage but whose potential should be fostered and exploited.

Complementary to this literature review, there is an analysis of the current policy and institutional reference frameworks of the territories covered by the project and addressing the most relevant priorities designed for facing health and spatial planning needs and challenges In a trans-national perspective, considering the Alpine region as a whole, heterogeneity is a relevant characteristic because of geographical and natural pre-conditions, demographic patterns, economic assets and social dynamics. Each activity to improve territorial cohesion and economic growth can take the specific context into account. Health and spatial planning have overlapping dimensions that can take different relevance due to context-based issues. Analysis of the policies leads to the conclusion that different regions show different patterns of policies for health and spatial planning, starting with the type of government and the role of public sector. For example, Rhône-Alpes is characterised by the presence of a central state that controls the health sector, in contrast to other European countries. Tyrol's health area is an example of extensive cooperation among a large number of operators, which represent central and federal institutions. Empowerment of patients is a priority in both Lombardy and Trentino, and in these regions as well as in Slovenia and Tyrol ICT solutions are receiving great attention. Regarding spatial planning, the Lombardy region places a priority on increasing quality of life for its citizens whereas Trentino focuses more on social inclusiveness and the valorisation of cultural, environmental and social identity. In these contexts, heterogeneity produces different needs and strategic orientations. In Slovenia the priorities are improving quality of life in rural areas and spatial economic development, including social integration and quality of life environment, with particular attention to social care and solidarity. Within the Lake Geneva region, the strategic objectives for spatial planning regard urbanisation for housing and economic development, mobility for public transport and the road network, and attention to rural areas for the landscape and agriculture. In its legislative framework, the Rhône-Alpes region has formalised the link between spatial planning and environmental and sanitation aspects, focusing particularly on preventing pollution and nuisances and on improving air quality. Preventing chronic diseases, promoting health, continuity of care, sustainability of healthcare, fair ac-

cess to healthcare services, improving the quality of housing, coping with demographic change and ageing, stimulating social inclusion, promoting social and territorial cohesion, improving public transport and infrastructure and ensuring access to SGIs are examples of common priorities in the policies of the member states of the Alpine Convention[7] in the framework of inclusive growth.

Empirical research on decentralisation processes does not confirm automatic positive effects on service delivery, economic development and social cohesion (Scott, 2009). Territorial identities and political contexts always affect decentralisation processes and the territories where they are implemented. In this regard, the concept of resilience plays a huge role, linked with local development and inclusive growth regarding social inclusion, spatial planning and diffusion of wellbeing. Resilience is a concept that defines regions such as "systems within systems" (Lukesch et al., 2010), and therefore regions in a globalised world have to face their environment through political decisions, economic patterns and social behaviour (individual and household). Hence, territorial resilience is the capacity to absorb external or internal stimuli and reorganise the structures, functions and relationships that are at the basis of development, maintaining sustainability intact. Managing and exploiting territorial resilience is a way to increase sustainability and territorial development.

## 4.2 Synthesis of the project results analysed by SPHERA

In parallel with the literature analysis and regional policies dealing with health and spatial planning for inclusive growth in the Alpine areas, SPHERA has surveyed ten projects (see Table 3) selected among those already funded by the Alpine Space Programme (2007–2013) and INTERREG IIB (2000–2006) programmes and addressing the topics identified. The selected projects aim to improve the inclusive growth in the programming area seen from various perspectives through territorial governance. This analysis benefitted the entire set of methods and tools delivered for mapping the actual status of outputs in these policies as achieved by these projects. Furthermore, the analysis of the project results provided recommendations for constructing a methodological framework for future project evaluation design, which could serve for rigorous policy impact evaluation.

The goal of this exercise was to identify the main achievements of these projects with the purpose of deriving valuable lessons for the next programming period and for further health and spatial planning policy development. Relevant project information was collected through a structured questionnaire (the SPHERA Synoptic Sheet) distributed to the projects' lead partner and analysed and presented by topic, rather than by

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**Table 3:** Transnational projects analysed by SPHERA.

| Project acronym | Title | Main themes |
|---|---|---|
| ACCESS<br>1 Sept. 2008 –<br>31 Aug. 2011 | Accessibility of SGIs. Organisational innovations in rural mountain areas | Spatial and social equal accessibility to SGIs |
| ALIAS<br>1 Aug. 2009 –<br>31 Oct. 2012 | Alpine hospital networking for improved access to telemedicine services | Healthcare provision in the Alpine area, fair access to healthcare services |
| CapaCITIES<br>1 Oct. 2008 –<br>31 Mar. 2011 | Competitiveness activities and policies for Alpine cities | Increasing competitiveness of small Alpine urban centres |
| DEMOCHANGE<br>1 Oct. 2009 –<br>30 Nov. 2012 | Demographic change in the Alps: adaptation strategies to spatial planning and regional development | Demographic change in mountain regions |
| INNOCITÉ<br>1 July 2008 –<br>30 June 2011 | How to improve competitiveness of small and medium-sized cities under the influence of large Alpine urban centres | Raising competitiveness of medium-sized and small towns |
| MORECO<br>1 July 2011 –<br>30 June 2014 | Mobility and residential costs | Spatial and transport development to cope with economic and demographic dynamics |
| NATHCARE<br>1 Sept. 2012 –<br>30 June 2015 | Networking Alpine health for continuity of care | Demographic change, accessibility to healthcare, hospital-territory integration |
| PUSEMOR*<br>1 Jan. 2005 –<br>30 June 2007 | Public services in sparsely populated mountain areas | Access to public services, rural-urban integration |
| QUALIMA*<br>Apr. 2003 –<br>July 2006 | Improvement by supporting public and private services in rural areas of the Alps | Access to public and private services, social inclusion, preventing depopulation |
| RURBANCE<br>1 July 2012 –<br>30 May 2015 | Rural-urban inclusive governance strategies and tools for sustainable development of Alpine territories undergoing major transformation | The relation among urban and rural areas and their development model |

Note: *Projects funded within the Interreg IIIB Programme.

single project, because the goal was to obtain overall lessons for the future programming period and not to provide an assessment of individual projects and pilots.

The analysis identified five topics clustering around the themes targeted by the projects:
1. Accessibility to SGIs;
2. The economic potential of small Alpine towns;
3. Public transport and mobility;
4. Healthcare accessibility;
5. Population ageing and new health challenges.

The first three topics are closely related to a "spatial planning" dimension, and the other two are explicitly linked to health issues. Topics 3 and 4 could also be considered sub-topics of the first one because public transport and healthcare services are SGI. However, given the relevance of these two domains in the topics analysed, they are considered independently.

The following sections briefly report the results of the analysis conducted in terms of problems framed by the projects, the main solutions and outputs produced, and a summary of the key lessons derived from the projects.

### 4.2.1 Accessibility to SGI

Problem: within the projects analysed, the overall problem of SGI accessibility is framed as a consequence of concentration of SGIs in large urban areas and a reduction of SGI supply in more remote areas. This situation has negative consequences, such as:
- Reduced territorial functionality and competitiveness of remote mountain areas;
- Increased motorised mobility and environment pollution;
- Exacerbation of age and social inequalities in SGI accessibility because these are the most vulnerable groups in the society affected by financial constraints and difficult mobility.

Main solutions and outputs: the main solutions delivered by the projects include:
- Organisation of marketing and awareness campaigns on

Table 4: Project distribution across the five topics.

| Project | Accessibility to SGI | Economic potential of small Alpine towns | Public transport and mobility | Healthcare accessibility | Population ageing and new health challenges |
|---|---|---|---|---|---|
| ACCESS | X | | X | | |
| ALIAS | | | | X | |
| CAPACITIES | | X | | | |
| DEMOCHANGE | | | | X | X |
| INNOCITÉ | | X | | | |
| MORECO | | | X | | |
| NATHCARE | | | | | X |
| PUSEMOR | X | | | | |
| QUALIMA | X | | | X | X |
| RURBANCE | | X | | | |

the topic of SGIs in remote areas;
- Developing and implementing ICT-based and demand-oriented SGI delivery systems;
- Organising training opportunities for SGI operators in remote areas;
- Establishing services and social networks to reach more vulnerable groups (including the elderly).

Lessons for policy development:
- ICTs and organisational changes are powerful tools for bridging physical gaps;
- It should be kept in mind that individuals' purchasing behaviours change slowly;
- ICT-based solutions should be tailored to the needs of the elderly and other vulnerable groups.

### 4.2.2  Economic potential of small Alpine towns

Problems: the projects analysed identify two main sources that hamper economic performance in Alpine areas:
- Critical economic and social factors (accessibility, decreasing population and workforce size, etc.);
- Suburbanisation from larger peri-Alpine large cities.

Main solutions and outputs: projects on this topic mainly focused on the importance of defining innovative territorial growth strategy in a participatory way:
- New "governance" solutions through the integration of policies, across administrative borders and policy domains;
- Alliances with neighbouring "metropolitan growth areas" (e.g., in agriculture, commerce and tourism);
- Innovative urban policies.

Lessons for policy development:
- Future scenarios and long-term development strategies should be defined in a participatory manner;

- A new generation of integrated planning (local and regional levels and metropolitan areas) is needed;
- Economic valorisation of local resources should be pursued.

### 4.2.3  Public transport and mobility

Problems: finally, the projects addressed the issues of transport and mobility in rural areas, emphasising that:
- Urban sprawl further increases public transport costs;
- Private motorised transport causes environmental pollution, traffic congestion and health costs.

Main solutions and outputs:
- Active support of sustainable, resource-friendly settlement development to reduce mobility needs and costs;
- Special transport solutions and services were introduced for elderly residents, tourists and commuters;
- Creation of a unique mobility centre.

Lessons for policy development:
- Support the efficiency of public transport by concentrating (future) settlement;
- Promote flexible and demand-oriented transport models;
- Fix minimum standards for public transport;
- Integrate proposed activities into existing policies.

### 4.2.4  Healthcare accessibility

Problems: healthcare accessibility is a sub-domain of the previous topic, with some additional and noteworthy problems, such as:
- The low availability and quality of healthcare services in mountain areas;
- The difficulty in serving new health demands (e.g., age-related ones) in remote areas, which gives rise to social inequality in health.

Main solutions and outputs: solutions proposed and implemented by the ten projects mainly targeted innovation in healthcare supply and management:

- Creation of a virtual hospital (a hospital network sharing data and clinical expertise);
- Developing and implementing eHealth services ("teleconsultation" and "second opinion");
- Creating new organisational models and data sharing for networks of volunteer associations;

Lessons for policy development:

- Implement eHealth solutions to reduce the distance between patients and providers and to allow the healthcare system to recognise needs and respond effectively;
- Develop eHealth solutions together with healthcare professionals to improve utilisation and quality of services;
- Provide training of health professionals on the use of new technologies;
- Build trust and confidence in telemedicine applications among users.

### 4.2.5  Population ageing and new health challenges

Problems: although it is well known that population ageing places burdens on health and social systems, there is less awareness of the fact that demographic change is also a major issue for regional development and spatial planning, and that spatial planning policies might serve as leverage for increasing the wellbeing of the elderly in mountain areas.

Main solutions and outputs:

- The projects aimed at raising awareness of the topic by mobilising and activating different types of stakeholders at the local level;
- Local healthcare communities were also created to support a network of stakeholders that can support the elderly's access to healthcare;
- Specific initiatives were undertaken to improve tourism for the elderly in the Alps (promotional initiatives, tours, hiking paths, etc.).

Lessons for policy development:
Adaptation to demographic change should be seen as an obligatory target and a priority field of activity in regional planning and regional development:

- Improve utilisation of current demographic monitoring tools and processes (e.g., Eurostat and national statistics offices);
- Improve housing, mobility and independent living for elderly people;
- Improve the social integration of elderly people;
- Adapt tourism infrastructure and services to elderly tourists.

The final step of the analysis considered a possible way to strengthen the evaluability of Alpine Space Programme projects in the next programming period. Although some of the projects considered above were subject to monitoring, a sound and systematic evaluation approach was missing. Such a deficiency is partly attributable to the nature of the projects, which are broad in scope and types of activities, and are therefore difficult to evaluate.

The recommendations raised by the SPHERA analysis is to strengthen the practice of evaluation in the next Alpine Space Programme period along three lines:

- Improving the evaluability of projects and pilot activities (Evaluability Assessment);
- Embedding evaluation in projects and pilot activities from the beginning (Prospective Evaluation);
- Exploiting available databases that allow systematic monitoring of relevant outcome indicators (Outcome Indicators).

## 5   Conclusion

Alpine healthcare systems faced many challenges, thus demanding a change towards sustainable health models and governance. Spatial planning in the Alpine regions should be considered from a perspective allowing the integration and harmonisation of different policies, including health, in order to enhance territorial governance for the wellbeing of all.

Demographic and social changes produce variations in lifestyles, only partially explained by current policy models. The inadequacy of these models calls for the identification of new paradigms enabling interpretation of phenomena with a collective dimension traceable in urban and peripheral areas, such as social disparity and marginality, a shortage of environmental resources, health inequalities and relevance of the landscape in public health. These aspects combine two domains – spatial planning and health – that only apparently operate in different contexts. Their integration in a common policy approach can provide novel momentum to face challenges that have been often tackled separately.

Territorial governance needs a new strategy design that combines different dimensions and includes the opportunity to integrate urban planning with healthcare policies. In this light, programming should be inclusive and planned in a participatory manner, involving all relevant stakeholders, should be addressed towards sustainability considered from various perspectives (social, cultural, environmental and clinical) and should target topics such as health, promoting a healthy lifestyle, preventing disease, urban renovation for fighting social exclusion, healthcare and the landscape to promote a better

quality of life and wellbeing. Furthermore, from the analysis carried out through SPHERA, some specific issues could require coordination between spatial, social and health policies and be a foundation for new directions for searching for transnational initiatives: ageing in peripheral areas and providing relevant services enabling the social integration and inclusion of elderly people. There is a need to improve the use of new technologies by healthcare professionals, specifically in remote areas. Other issues include health service accessibility in peripheral areas at all levels, finding the proper ratio between the concentration and dispersion of services taking into account cost-effectiveness, efficiency and flexibility; securing adequate housing for the elderly in peripheral areas (maintenance, financing, security and green areas) ensuring independent living, physical accessibility and adequate design of public spaces, and mobility (new needs given ageing).

Finally, health represents an overall topic that cuts across many areas. Thus it is recommended that impact assessments be used to improve compliance with policies and also for an ex-ante assessment of potential policy impacts for a given spatial unit (health impact assessment, social impact assessment and territorial impact assessment). Complementary to this recommendation, a more general, sound and systematic evaluation approach towards projects and specific pilot activities should be ensured to monitor and assess the effectiveness of the results and therefore their capitalisation and valorisation in practice and policies.

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## Acknowledgements

## Notes

[1] See: www.alpine-space.eu

[2] See: www.spheraproject.eu

[3] See: www.spheraproject.eu

[4] See: http://ec.europa.eu/regional_policy/what/future/program/index_en.cfm

[5] See: http://www.alpine-space.eu/about-the-programme/asp--2014-2020/about-the-asp-2014-2020

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# Healthy mountains? A look into health and its determinants in the Alpine regions

This contribution provides a statistical description of geographical variation in health and health inequality in the Alpine regions. It uses regional indicators provided by Eurostat and microdata from the Survey of Health, Ageing and Retirement in Europe (SHARE). The results suggest that Alpine regions perform slightly better than non-Alpine regions with regard to some health indicators (e.g., life expectancy). However, pronounced internal variation exists, with some regions of the Alps substantially outperforming relative to the rest of Europe, whereas others are clearly lagging behind. Although it is beyond the scope of this article to attempt a thorough analysis of the causes of this geographical variation, data suggest that this could be accounted for by socioeconomic and institutional factors. The article also documents the existence of social inequality in health because individuals' level of education and occupational status are found to significantly affect perceived wellbeing. Further research is necessary in order to determine the role played by contextual factors, healthcare services and accessibility in shaping health inequality and geographical variation.

Keywords: health, space, Alpine regions, health inequality

## 1    Introduction

Much research has investigated the link between geographical area of residence and health status (Curtis & Jones, 1998; Marmot & Wilkinson, 2006; Mackenbach et al., 2003, 2008). The existence of geographical variation in health has been validated at different levels: across countries, across regions within countries, across neighbourhoods within cities, and so forth. However, interpreting this geographical variation is not straightforward. On one hand, it could be explained by the fact that individuals are unevenly distributed across space. According to this compositional explanation, the differences observed across areas would be simply accounted for by individual characteristics and related risk factors (Lynch et al., 2004). For example, differences between countries could be explained by the fact that pronounced differences in household income exist across countries. Similarly, differences in mortality and morbidity between neighbourhoods might be explained by the different age distribution of residents. On the other hand, an ecological perspective would point to the existence of contextual effects that operate over and beyond individual risk factors. That is, some places would be "healthier" than others, independent of individual characteristics. Different rates of pollution, availability and funding of healthcare services, poverty rates and the socioeconomic context (Robert, 1999; Marmot & Wilkinson, 2006), as well as a wide range of socio-cultural factors, including the quality of social relations (Uchino et al., 1996; Litwin, 2009), might affect individual health (Costa et al., 1998, 2009; Krieger 2001).

For the purposes of this contribution, it is particularly interesting to look at studies investigating health differentials between mountainous and non-mountainous areas. In this setting, contextual effects could operate through several channels and in different directions. Living in a mountainous area versus a non-mountainous one might exert both positive and negative effects on an individual's health. For example, individuals living in mountainous areas might benefit from a better-quality environment (e.g., less air pollution). In mountain areas, healthy behaviours and lifestyles (e.g., outdoor activities) could also be more frequent compared to non-mountain areas, leading to better health (Bertoncello, 2007). On the other hand, people living in mountain areas often face lower accessibility and quality of care services because they have to travel longer distances to hospitals and hence pay higher costs for medical care, as also emerged from the SPHERA project.[1]

Whether beneficial effects prevail over detrimental ones is essentially an empirical question. Thus far, not much is known about geographical variation in health in the Alpine area and between Alpine and non-Alpine regions. Most empirical studies on the Alpine area are centred around spatial variation in socioeconomic indicators (Pecher, 2012), and studies that specifically focus on health issues are limited to individual national contexts (Lengen, 2007) and localities (Lercher, 1994; ALP-NAP, 2007; Costa, 2014).

Within the Alpine Space Programme's 2007–2013 programming period, the SPHERA project served as an opportunity to investigate the spatial distribution of health and to explore the link between spatial planning and healthcare in the Alpine area. As a result, some key critical issues were identified (Zuffada et al., 2015). First, the project emphasised the problem of low availability and low quality of healthcare services in mountain areas, which makes it more difficult to serve new health demands (e.g. age-related ones) in remote areas, giving rise to social inequality in health. The project also made apparent poor awareness of the fact that demographic change in the Alps is a major issue for regional development and spatial planning, and that spatial planning policies could serve as leverage for increasing the wellbeing of the elderly in mountain areas. Policy-wise, interventions aimed at improving healthcare accessibility in remote alpine areas are considered useful for redressing the growing age and social inequality in health.

Building on prior research and on the results of the SPHERA project, this article asks the following questions: a) Do Alpine regions differ from non-Alpine regions with regard to life expectancy and death rates? b) Is there geographical variation in these indicators within the Alpine area? c) How do the Alpine regions compare with non-Alpine regions with respect to selected social and institutional determinants of health? d) Finally, is there evidence of social inequality in health in the Alpine area? To answer these questions, we use both regional indicators provided by Eurostat (and presented in SPHERA) and microdata from the Survey of Health, Ageing and Retirement in Europe (SHARE). SHARE allows us to look at a subjective measure of health (self-perceived health), which is particularly relevant considering that wellbeing is an intrinsically subjective feature, as recognised by the World Health Organization in its 1948 definition of health.

The results presented in this article suggest that Alpine regions perform better than non-Alpine regions with regard to some health indicators (e.g., life expectancy). However, noticeable regional variation exists within the Alpine area. Although it is beyond the scope of this article to attempt a thorough analysis of the causes of this geographical variation, data suggest that this could be accounted for by socioeconomic and institutional

factors. The article also documents the existence of social inequality in health because individuals' level of education and occupational status are found to significantly affect perceived wellbeing. For the reasons mentioned above, the results presented in this article are to be taken as a mere statistical description of the phenomena at hand and cannot be interpreted in a causal way. Further research is needed in order to disentangle the role played by contextual factors, healthcare services and accessibility.

This article is structured as follows. Section 2 provides an analysis of selected aggregate indicators on health status in Alpine regions in comparison with non-Alpine regions, national averages and the EU average. Section 3 completes the picture with a comparison of a selected set of socioeconomic and institutional determinants. Section 4 presents an analysis of micro-determinants of health and health inequality in the Alpine regions. Section 5 concludes by summarising the main findings and envisaging future areas of research.

## 2  Health in the Alps

This section examines aggregated health indicators. First, it looks at two overall health indicators: life expectancy and standardised death rate. Second, it examines a selected group of the causes of death (neoplasm, ischemic diseases, alcohol abuse and traffic accidents). Because our main interest is both comparing Alpine and non-Alpine regions and assessing internal
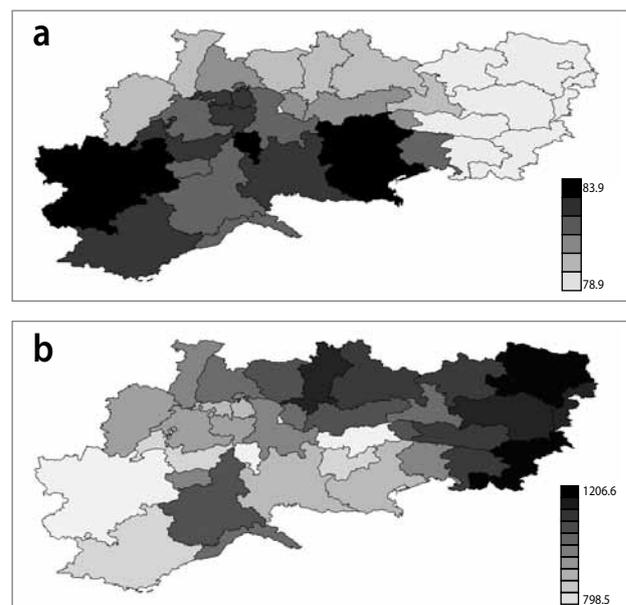


**Figure 1:** a) Life expectancy in 2010 and b) standardised death rate in 2008–2010 in Alpine regions (source: Eurostat Statistics Database (FBK-IRVAPP calculations based on Eurostat data, 2008–2010).

Note: a) Life expectancy at less than one year, b) Standardised death rate per 10,000 inhabitants, three-year average.

**Table 1:** Selected health indicators in the Alpine regions and Europe.

| Geographical unit | Life expectancy | Standardised death rate | | | | |
|---|---|---|---|---|---|---|
| | | Overall | Neoplasm | Ischemic disease | Alcohol | Traffic |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Alpine regions | | | | | | |
| Mean | 82.0 | 928.8 | 264.2 | 137.8 | 3.4 | 7.5 |
| Median | 82.1 | 917.7 | 261.7 | 129.3 | 3.6 | 6.6 |
| Non-Alpine regions | | | | | | |
| Mean | 81.0 | 965.0 | 256.0 | 111.5 | 5.0 | 7.1 |
| Median | 80.8 | 1,009.3 | 269.6 | 136.4 | 5.2 | 6.3 |
| National means | | | | | | |
| Austria | 80.1 | 1,011.5 | 268.4 | 198.1 | 5.6 | 7.5 |
| France | 81.1 | 893.6 | 272.4 | 61.2 | 5.0 | 6.3 |
| Germany | 79.8 | 1,045.0 | 267.7 | 166.8 | 5.6 | 5.2 |
| Italy | 81.5 | 912.7 | 275.9 | 115.8 | 0.4 | 7.2 |
| Slovenia | 79.0 | 1,114.9 | 329.4 | 122.2 | 6.2 | 10.3 |
| Switzerland | 82.0 | 884.0 | 238.4 | 122.6 | 2.9 | 5.1 |
| EU28 | 79.3 | 1,079.5 | 282.0 | 153.1 | 3.0 | 7.9 |

Note: Alpine and non-Alpine regions are weighted averages (weighted for the size of the regional population).

Source: Eurostat statistics database (calculations by the Research Institute for the Evaluation of Public Policies, Bruno Kessler Foundation (FBK-IRVAPP) on life expectancy for 2010 and standardised death rate for 2008 to 2010). Data downloaded in March/April 2014.

variation in the Alpine area, our analysis is carried out on different geographical clusters of interest: a) Alpine NUTS-2[2] regions (belonging to Austria, France, Germany, Italy, Slovenia and Switzerland), b) non-Alpine NUTS-2 regions (belonging to the same six countries), c) national averages and d) the EU-28 average. All of these indicators are based on Eurostat data, which allow for comparability of data across geographical units. Unfortunately, most data related to health are only available at the NUTS-2 level, this preventing a more precise definition of the Alpine area, which would be possible with indicators at the NUTS-3 level. Nevertheless, it is emphasised that our empirical definition of the Alpine area coincides with the one adopted by the Alpine Space Programme, which includes all NUTS-2 regions that are even partly crossed by the Alps.

Table 1 compares the first two indicators across the geographical clusters listed. Life expectancy (Column 1) indicates the mean number of years still to be lived by a person under age one if subjected throughout the rest of his or her life to the current mortality conditions (age-specific probabilities of dying). The overall standardised death rate (Column 2) indicates the number of deaths in relation to the total population, having excluded the differences in the age distribution when comparing different populations to account for the fact that most causes of death vary significantly with people's age.

Table 1 shows that Alpine regions have higher life expectancy than non-Alpine regions (82.0 versus 81.0 years) and also score

better in comparison to national and EU averages. Although length of life does not imply the status of wellbeing and health, this result could be taken as a first hint that health could be, on average, better in Alpine regions compared to non-Alpine regions of Europe. Such a "health advantage" would also be confirmed when looking at the standardised death rate indicator (Column 2). Alpine regions "perform" better in comparison with non-Alpine regions (928.8 vs. 965.0) and with the EU-28 average (1079.5).[3] However, on both these indicators there is sizeable internal heterogeneity in the Alpine area. As is evident from Figure 1, the south-western regions of the Alpine area seem to perform better than the north-western ones. The top map shows that life expectancy varies from a minimum of 78.9 to a maximum of 83.7 years. The same occurs with the standardised death rate, which varies from 798.5 to 1206.6. Hence, although Alpine regions outperform non-Alpine regions on average, within the Alpine area there are regions that perform at a relatively low level: some Alpine regions perform better and some others worse than the EU28 average.

We now turn our attention to the four causes of death presented in Table 1 (Columns 3–6). The data show that deaths related to neoplasm and heart diseases (which rank among the most frequent causes of death in Europe) are slightly more frequent in Alpine compared to non-Alpine regions. Alpine regions also have lower incidence of deaths related to alcohol but higher incidence of road-accident-related deaths. As before, we also present a visualisation of these indicators throughout the Alpine area. Figure 2 shows that causes of death have a different

Table 2: Selected health determinants in the Alpine regions and Europe.

| Geographical unit | Ageing index | Share of medium/ highly educated | Risk of poverty | Material depri- vation | Hospital beds | Inhabitants per doctor |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Alpine regions | | | | | | |
| Mean | 1.23 | 73.1 | 16.0 | 3.0 | 551.4 | 275.2 |
| Median | 1.27 | 81.6 | 16.0 | 3.6 | 560.4 | 272.0 |
| Non-Alpine regions | | | | | | |
| Mean | 1.24 | 72.4 | 29.3 | 7.5 | 551.3 | 348.9 |
| Median | 1.49 | 79.6 | 25.8 | 7.3 | 566.9 | 325.4 |
| National means | | | | | | |
| Austria | 1.19 | 82.5 | 16.6 | 4.3 | 762.9 | 209.2 |
| France | 0.89 | 70.8 | 19.2 | 5.8 | 642.8 | 305.6 |
| Germany | 1.53 | 85.8 | 19.7 | 4.5 | 824.8 | 268.0 |
| Italy | 1.44 | 55.2 | 24.5 | 6.9 | 357.1 | 255.4 |
| Slovenia | 1.18 | 83.3 | 18.3 | 5.9 | 457.2 | 411.4 |
| Switzerland | 1.11 | 85.8 | 17.2 | 1.7 | 496.3 | 262.7 |
| EU28 | 1.11 | 72.7 | 23.7 | 8.4 | 538.7 | 296.1 |

Note: Alpine / non-Alpine regions are weighted averages (weighted for the size of the regional population).
Source: Eurostat Statistics Database (FBK-IRVAPP calculations on Eurostat data, 2010).

incidence in the Alpine area. In particular, it is confirmed that the eastern part of the Alps also has the highest mortality rate for the four selected causes of death, whereas the southern part displays a higher incidence of neoplasm-related deaths and a lower incidence of deaths related to alcohol abuse.

# 3   Socio-demographic and institutional determinants of health in the Alps

The geographical differences described in the previous section could be the result of several factors (e.g., different health behaviours, environments and regional or national institutional settings) that cannot be investigated in this article but that could be the object of further studies. Nonetheless, here it is worth looking at some of the demographic, socioeconomic and institutional indicators that are considered important determiners of health (Marmot & Wilkinson, 2006; Franzini & Giannoni, 2010). Table 2 presents an overview of a selected set of indicators. First, Column 1 compares an index of ageing obtained as the ratio of the population sixty-five years old compared to the population under fifteen. No noticeable differences are detected between Alpine (1.23) and non-Alpine regions (1.24) on this index. In contrast, some noticeable differences exist with regard to socioeconomic indicators, such as the share of medium/highly educated (Column 2), the share of households at risk of poverty (Column 3) and the share of households reporting to experience severe material deprivation (Column 4). From this set of indicators, it emerges that, on

average, Alpine regions are substantially better off than non-Alpine regions. Although the share of medium/highly educated individuals is virtually the same in Alpine and non-Alpine regions (73.1 and 72.4%, respectively), and also in line with the EU28 average (72.2%), Alpine regions score better on the two indicators of wealth and economic wellbeing. The share of households living in poverty is roughly half that observed in the non-Alpine areas (16.0 versus 29.3%) and substantially lower than the EU28 average (23.7%). Similarly, the share of households facing material deprivation is 3.0% in Alpine regions and 7.5% in non-Alpine regions. Finally, we take into consideration two indicators of healthcare services: the number of hospital beds and the number of inhabitants per doctor (Columns 5 and 6, respectively). Although no noticeable differences are found when comparing the number of hospital beds, a quite pronounced gap seems to exist with respect to the number of inhabitants per doctor, with the Alpine regions showing a quite lower ratio (275.2) compared to non-Alpine regions (348.9) and the EU28 average (296.1).

Figure 3 shows evidence of the internal dispersion of the indicators presented in Table 2. Once again, it is evident that the Alpine area cannot be considered a "monolithic" geographical unit. It is evident that national divides exist. Considering, for example, the educational attainment indicator, Italian regions strikingly underperform other Alpine regions (indeed the share of medium/highly educated in Italy is 55%, well below the EU28 average). Similarly, sharp differences are observable on both the ageing index and on the indicator for number of beds.

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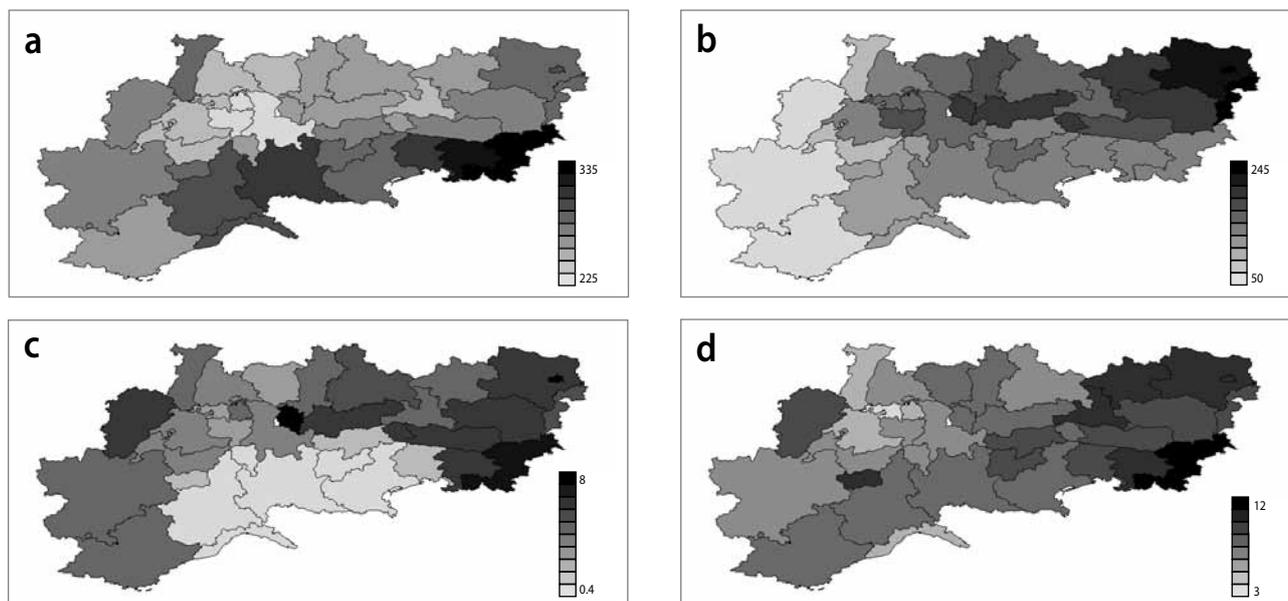


**Figure 2:** Various causes of death from 2008 to 2010 in the Alpine regions: a) neoplasm, b) ischemic heart diseases, c) mental and behavioural diseases caused by alcohol abuse, d) traffic accidents (source: Eurostat Statistics Database (FBK-IRVAPP calculations on Eurostat data, 2008–2010).

Note: a)–d) Standardised death rates per 100,000 inhabitants, three-year average.

# 4    Social inequality in subjective health

This section provides a descriptive analysis of health inequality (Marmot & Wilkinson, 2006) in the Alpine regions using individual-level data derived from the SHARE database. In particular, we examine individuals' self-reported health to acknowledge the importance of looking at the subjective dimension of health and wellbeing. SHARE is a cross-national survey administered to individuals over fifty, which covers a wide range of aspects including health, socio-economic status and social and family networks. Our sample is made up of 13,975 individuals.[4] The sample is distributed as follows: 4.5% living in Italy, 5% in Germany, 9.5% in France, 19% in Slovenia, 25% in Switzerland and 36% in Austria. The share of women is somewhat larger, accounting for 56% of the sample. The average age is around sixty-six. Our dependent variable is self-perceived health. Interviewees' responses have five categories: "poor", "fair", "good", "very good" and "excellent". The modal response is "good" (37%); 31% of the sample is reporting to have very good or excellent health, but 32% state that they have fair or poor health.

We analyse self-reported health and its determinants by means of two nested multilevel models that include region random effects. This type of statistical technique is particularly appropriate for jointly studying the role played by individual and contextual effects. More precisely, this modelling technique makes it possible to a) assess between- and within-region vari-

ance in self-reported health and b) investigate the role played by individual characteristics on individual health as well as between- and within-region variance in health. For the sake of simplicity, we recode our dependent variable into a dichotomous variable with the value 1 if the respondent declares "good", "very good" or "excellent" health status, and the value 0 otherwise. We apply a linear probability model. The results are substantively unchanged if we use logit or probit models for binary response. Table 3 reports the results of this analysis. Model 1 includes region random effects only and makes it possible to study the variance between and within regions. Model 2 adds individual characteristics and thus makes it possible to study health determinants and inequality.

Model 1 shows that a large part of the sample variance in self-reported health takes place at the individual level (0.203) rather than the regional level (0.010). The intra-class correlation (ICC, i.e., the portion of variance explained at the regional level) is 4.7%.[5] This means that less than 5% of the variance in self-reported health is explained by differences between regions, whereas the remaining 95% is due to individual variation within the regions. This is not surprising because health is primarily an individual condition. However, even if small, the existence of significant between-region variance points to the presence of geographical disparities in health within the Alpine area, confirming what is shown visually in Section 2. Model 2 adds several individual determinants of health. The direct effect of individual factors on perceived health is remarkable. Highly educated individuals report significantly better health: having a degree versus having at most lower secondary
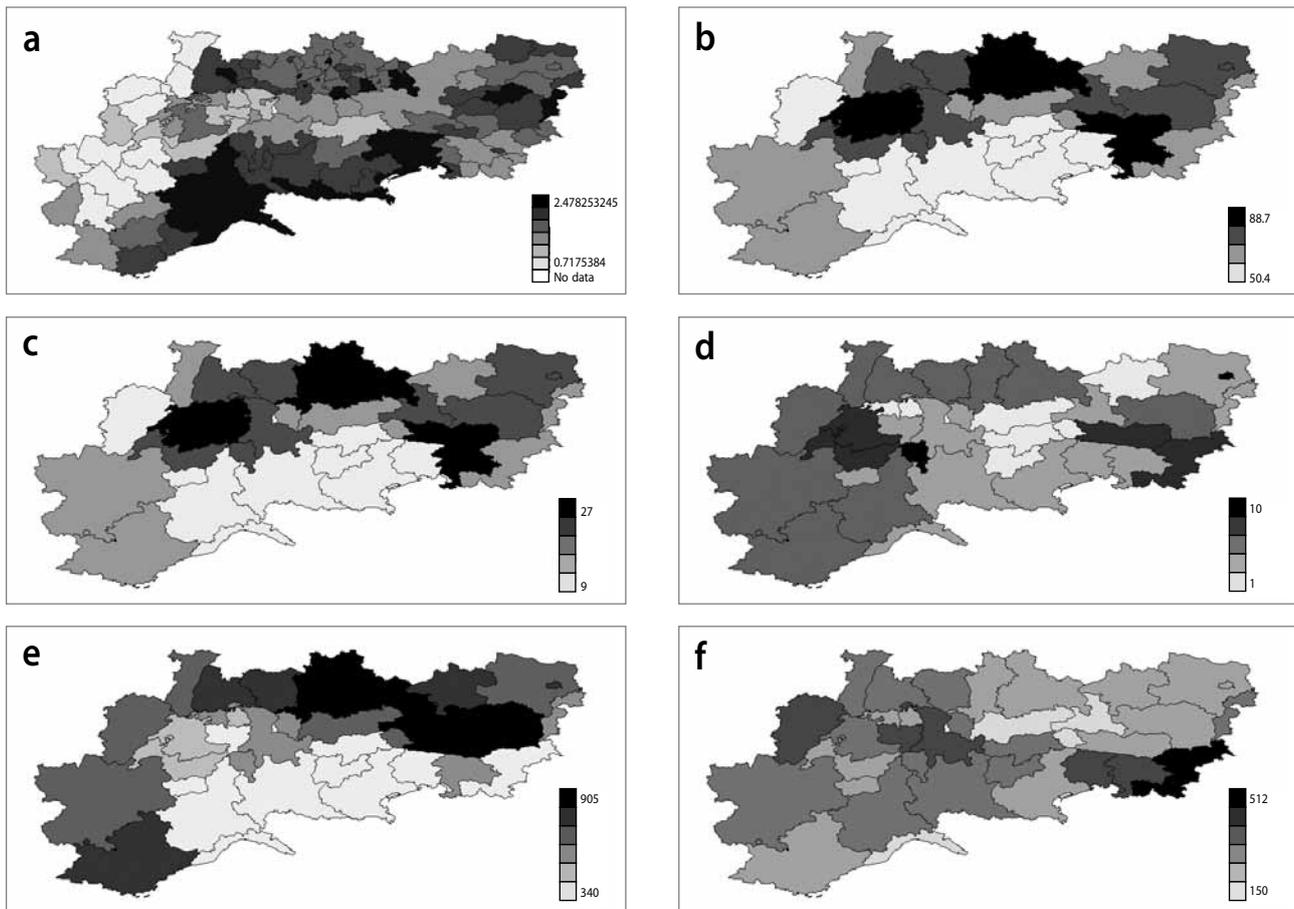
**Figure 3:** Health determinants in 2010 in the Alpine regions: a) ageing index, b) Share of upper secondary/tertiary educated, c) People at risk of poverty and social exclusion, d) Severe material deprivation, e) Hospital beds, f) Inhabitants per doctor (source: Eurostat Statistics Database, FBK-IRVAPP based on Eurostat data).

Note: a) Ratio of population over sixty-four divided by the population below fifteen, b) Population twenty-five to sixty-four years old with upper secondary or tertiary education, c) Percentage of total population (Germany, France: only national data available), d) Percentage of households reporting material deprivation (economic strain, durables, housing deprivation; Germany, France: only national data available), e) Hospital beds per 100,000 inhabitants, f) Number of inhabitants per doctor.

**Table 3:** Determinants of self-reported health in the Alpine area.

|  | Model 1 | Model 2 |
|---|---|---|
| Female (ref. male) |  | 0.03*** (0.01) |
| Age |  | −0.01*** (0.00) |
| Education (ref. primary / lower secondary) |  |  |
| Upper secondary education |  | 0.10*** (0.01) |
| Tertiary education |  | 0.16*** (0.01) |
| Employed (ref. non-employed) |  | 0.09*** (0.01) |
| Has economic strains (ref. does not have economic difficulties) |  | −0.17*** (0.03) |
| Single (ref. lives with a spouse/partner) |  | −0.04*** (0.01) |
| Children (ref. does not have children) |  | 0.02 (0.01) |
| Constant | 0.70*** (0.02) | 1.02*** (0.04) |
| Between-region variance | 0.010 (0.003) | 0.005 (0.002) |
| Within-region variance | 0.203 (0.002) | 0.183 (0.002) |
| Log likelihood | −8,741.44 | −8,011.86 |
| *N* | 13,975 | 13,975 |

Note: Standard errors in parentheses. *$p$ < 0.1, **$p$ < 0.05, ***$p$ < 0.01

Source: SHARE Dataset (IRVAPP calculations on SHARE data, various waves)

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education increases the likelihood of reporting good health by 16 percentage points. Employed individuals and those that say they do not experience economic strains also report significantly better health.

Model 2 also shows that older individuals and those living in single households report more negative health, whereas females report, *ceteris paribus*, slightly higher wellbeing than males. Moreover, as compared to Model 1, ICC is substantially reduced (2.5% vs 4.7%). This suggests that regional variation in health within the Alpine area is partly due to regional composition in terms of individual socioeconomic factors, thus lending partial support to a compositional explanation of geographical variation in health.

## 5  Conclusion

This contribution expanded on SPHERA Work Package 4 (Zuffada et al., 2015), aiming to shed light on health geographical variation and health determinants in the Alpine area. Although it had a merely descriptive purpose, this work obtained some empirical results that could pave the way for further in-depth studies in the future. First, the Eurostat data aggregated at the regional level point to the existence of a slight health advantage of Alpine regions versus non-Alpine regions, at least when considering life expectancy as an overall indicator of health. This "advantage" could be explained by the better socioeconomic and institutional environment in Alpine regions, but it must also be emphasised that there exists pronounced internal variation, with some regions and parts of the Alps substantially outperforming relative to the rest of Europe, and others clearly lagging behind. Again, it was far beyond the scope of this contribution to attempt an explanation of these patterns, which could be the result of a mix of factors related to regional and national socioeconomic, environmental and institutional settings. Future research should investigate regional variation in health by considering further health indicators and their development over time as well as examine the role played by contextual effects, services and service accessibility in accounting for health levels.

This contribution also pointed out the issue of social inequality in health in Alpine regions. Individual characteristics such as level of education and socioeconomic conditions strongly affect individuals' perceived health and wellbeing. This demands a redefinition of healthcare services in order to accommodate socially differentiated health risks and to counterbalance the role played by socioeconomic status. Empirical studies are in order to establish the extent to which social and geographical inequalities interact. However, it would be of great importance to be able to exploit more geographically disaggregated data

because the NUTS-2 level is too broad a definition to both adequately identify the alpine area and the existence of contextual effects on individuals' health and wellbeing.

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**Notes**

[1] SHERA is a project funded within the Alpine Space Programme aimed at studying the link between spatial planning and health in the Alpine regions. See the contribution by Zuffada et al. in this issue for further details on the project.

[2] The NUTS classification (Nomenclature of Territorial Units for Statistics) is a hierarchical system for dividing up the economic territory of the EU. NUTS2 corresponds to macro-regions.

[3] These results also hold when considering median values (less sensible to outliers) instead of means.

[4] The individuals included in our sample were interviewed either in 2004 (Germany) or in 2011 (Italy, Switzerland, Austria, Slovenia and France). Because the NUTS-2 region identifiers are missing from our 2011 dataset for Germany, the only alternative was to use the 2004 German dataset for more descriptive purposes. However, the distribution of the outcome variables does not significantly change between 2004 and 2011.

[5] The ICC is obtained by dividing the variance between regions (0.010) by the total sample variance (0.10 + 0.203).

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# Digital care in the Alpine area

The article analyses the role that new digital technologies (NDTs) can play for improving healthcare. In particular, we identify trends, challenges and success factors. In the near future, NDTs should play a profound and transformative role in healthcare by improving patient healthcare and follow-up, by enhancing health professionals' (HPs) coordination and patient record exchange, by empowering patients to upload and access their medical records and, finally, by providing personalised, timely and secure access to medical information. This ongoing revolution is dramatically changing the way HPs and patients interact and how healthcare services are organised. It supports the emergence of the concepts of territorial healthcare organisation and a healthcare local community, which propose novel healthcare organisational plans. In this context, this article outlines the multidimensional nature of e-health solutions. In addition to technical and organisational issues, a number of other dimensions must be considered; for example, sociological and financial dimensions.

Keywords: e-health, digital health, telemedicine, territorial healthcare organisation, healthcare local community

## 1 Introduction

This article summarises the SPHERA regional seminar "Digital care in the Alpine space", which was conducted at the National Institute of Applied Sciences of Lyon (*Institut National des Sciences Appliquées;* INSA de Lyon, Lyon, France) in June 2014 (see Internet 1). Funded by the Alpine Space Programme's cooperation program, the SPHERA project aims to enhance territorial governance in the Alpine area, focusing specifically on the policy areas of health and spatial planning. The capitalisation approach of SPHERA builds on current and finalised Alpine Space Programme projects within the thematic field of "inclusive growth". Learning from the results of these projects, SPHERA will also help prepare the ground for the new generation of projects in the 2014–2020 programming period by identifying gaps and supporting synergies. The Lyon SPHERA seminar, which is considered in this article, specifically focused on e-health, leveraging the extensive experience of the Rhône-Alpes Region in implementing e-health and telemedicine solutions.

## 2   Status of e-health systems in the Rhône-Alpes region

### 2.1   Rhône-Alpes systems

Many e-health systems have been designed and implemented in recent years in the Rhône-Alpes region. The most important are:

- DPPR (*Dossier Patient Partagé Régional*): the Regional Shared Patient Record;
- PEPS: middleware support for healthcare networks;
- *Trajectoire*: A tool for tracking and organising patient healthcare; for example, the transfer from hospital to home care;
- *Visage*: a shared diary used by healthcare professionals involved in patient follow-up;
- OSCARS: Support for cancer follow-up and care coordination;
- ZEPRA (*Zéro Echange Papier en Rhône-Alpes*): a paperless document exchange system (see Internet 2);
- ASALEE: a cooperation protocol between health professionals (HPs) involved in patient follow-up;
- ROR (*Répertoire Opérationnel des Ressources*): a directory of all healthcare operational resources.

These tools have demonstrated their potential and effectiveness. They allow the Rhône-Alpes region to be a key player in e-health in Europe in 2014. Considered as a whole, they provide a good illustration of current trends in e-health.

### 2.2   Regional healthcare project

The Rhône-Alpes healthcare authorities aim to create an area of excellence in digital health services, serving all health actors for one purpose: to ensure better health and support patients throughout their treatment. In this context, the first regional healthcare project (*Projet Regional de la Santé,* PRS), which establishes key priorities for the coming years, was released. A synthesis of the plan is available online (see Internet 3).

This plan covers a period of five years (2012–2017) and is organised along three strategic priorities, which cover eighteen activities:

- Strategic Priority 1: Developing prevention, in particular towards environmental risks;
- Strategic Priority 2: Improving healthcare services;
- Strategic Priority 3: Facilitating care plan implementation.

Strategic Priority 3 concerns improving the prevention and treatment of chronic diseases (diabetes, heart or kidney failure, etc.), notably through better healthcare coordination with special attention to be paid to the disabled and elderly. Key aspects of this priority include:

- Access to healthcare services;
- Patient follow-up: care plan design and personalisation;
- Patient follow-up: coordination of healthcare services;
- Interoperable information systems;
- Care flow management;
- Inclusion of both social and care dimensions.

### 2.3   The PASCALINE project

Submitted to the "Digital Healthcare Territories" (TSN) national call, the Rhône-Alpes PASCALINE project is one of only five proposals that were selected by the French authorities for financing. The keywords of this project are available online (see Internet 4). The TSN national call focuses on e-health and territory planning. It is an opportunity to experiment with high-scale digital healthcare services planned in the Regional PRS (see Section 2.2). TSN targets accessibility to healthcare services, new healthcare models (e.g., a virtual hospital for territorial governance) and better healthcare service quality. The PASCALINE project consists of twelve work packages with a global budget of EUR 25.5 million. Two use cases will be considered during the project: breast cancer (in which general practitioners are the main actors) and severely disabled children (in which families are the main actors). PASCALINE addresses three main dimensions: sanitary, medical/social and prevention. They have in common the fact that several actors, information and needs must be coordinated, which raises technical challenges for NDTs.

PASCALINE targets five points that were identified as major challenges and needs:

- Defining a patient-centred care plan and implementing seamless care flow;
- A digital (regional) medical record that will serve as a common base of patient-related information. Note that over 60% of the patients are already registered in the regional e-health platform;
- Secure communication service between HPs (hospitals, practitioners in cities, etc.) to enable fast exchange of knowledge;
- A selection of tele-assistance and prevention services offered to patients suffering from chronic diseases;
- Innovative projects (e.g., quantified self- and sensor-based systems)

PASCALINE offers very good insight into the most promising trends in e-health. It also illustrates the need to design holistic solutions that consider all the dimensions of healthcare and integrate all stakeholders.

# 3 Trends and challenges

Two crucial issues can be identified that must be considered when designing e-health solutions:

- Management of patient and information flows (also referred to as the patient trajectory). Patients often move from their homes to a hospital or from a hospital to another one. The management of patients and their healthcare information is a key element in such multi-party follow-up. This seamless information exchange flow includes patients' access to their treatment history or health-related information;
- Management of the patient care plan. When multiple HPs are involved in patient care (especially when a trans-disciplinary approach is required; e.g., in cancer treatment), new coordination models are needed. Who decides what? Who is responsible for what? These questions must be answered before the care process is started.

Addressing these two issues requires solving technical, psychological, social and organisational challenges, which are addressed below.

## 3.1 Technical challenges

Some technical challenges can be addressed:

- Typically, current tools support only one disease, but patients may have multiple diseases or may follow multiple treatments at the same time. Tools should be adapted to cover this aspect;
- The new vision for NDTs is not one of specialised (software) tools, but transverse polyvalent tools able to adapt to the individual needs of hospital professionals, patients, and so on;
- A secured messaging service is an essential functionality for HPs. Messaging and document transfer is an efficient first step in accustoming HPs to new digital technology;
- New digital technology must be simple, easy-to-use, efficient and affordable.

## 3.2 Psychological challenges

An important problem is changing work habits. Training and support must be provided for several years. The length of the learning curve that has to be followed to fully implement a new way of working is about ten years. The bubble of responsibility refers to the fact that HPs may not want to be integrated into a larger (virtual) team but may prefer to stay in their own area of responsibility. For the success of NDTs, one needs to consider individual competences, needs and best working practices. A crucial factor for success is remuneration for NDT activities, and HPs should be paid appropriately for the time they spend.

## 3.3 Social challenges

Social aspects are not reduced by NDTs. Interestingly, based on prior experience, the need for social contact increases with NDTs. Consequently, integrating the social dimension is indispensable for the success of any e-health solution. A social network should be created around the patient. Social workers, patient associations and relatives must become involved in the healthcare "environment". Social media and internet-based social networks should also be considered to support patient's social integration and the exchange with and among patients.

## 3.4 Territorial hospital organisations and healthcare local communities

New patient follow-up approaches call for a dramatic healthcare territorial organisation change in which hospitals should play a key role in coordinating healthcare actors and supervising care flow. The notions of territorial hospital organisations (THOs) and healthcare local communities (HLCs) have recently emerged and suggest organising all healthcare stakeholders (including HPS, paramedics, patients, families, associations, social workers, etc.) into a network of interactions supported by NDTs (see Sections 2.1 and 2.3). As noted, such a change requires designing coordination support and information sharing tools/systems, designing a relevant legal framework, and political and financial support. In this context, a bottom-up approach should definitely be privileged; that is, the local coordination model should be designed and implemented according to local healthcare actors' needs and context.

## 3.5 Success factors

Some key factors for the success of THOs/HLCs, as well as all e-health solutions, can be identified:

- A pragmatic approach: utility and pertinence must be always clear;
- Bottom-up approaches: start from the needs of users (HP, paramedics and patients);
- User-centric design of NDT tools to optimise their ergonomics and their usability;
- Integrating patient associations within development strategies;
- User support and training strategy;
- Integrating the social dimension;
- A clear and relevant remuneration framework;
- A clear and relevant legal framework.

# 4　Conclusion

This article addressed current trends and challenges in developing and implementing e-health solutions. A key feature that must be considered is the multidimensional nature of such solutions. In addition to technical and operational issues, designers of e-health solutions must consider psychological, sociological, training, legal, financial and organisational issues. NDTs provide tools, not solutions, and, for the success and the sustainability of e-health applications, all of these dimensions must be addressed at design time in a holistic approach. Furthermore, in the context of healthcare and spatial planning, emphasis has been placed on the emerging concepts of territorial healthcare organisations and healthcare local communities, which propose novel healthcare organisational plans. Finally, success factors have been identified that should be considered when designing and implementing e-health solutions.

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# Smart Trentino:
# An inclusive territory for the wellbeing of all

This article presents the holistic approach adopted by the autonomous province of Trento for providing public services and, in particular, healthcare services to all residents regardless of whether they live in towns or in remote mountain areas. The idea behind this approach is the creation of a "smart territory" across the province, a term borrowed from the concept of the "smart city". This means leveraging on digital technologies to enhance performance and wellbeing, to reduce costs and resource consumption, and to engage more effectively and actively with the public. The definition used in this article links smart cities to smart, sustainable and inclusive growth as envisaged in the Europe 2020 framework (see European Commission, 2010). With the ambition that the positive experience of Trentino will be used as a model in other territories with similar characteristics, we introduce the main key enabling actors and technologies available in the province and the instruments designed for smart and sustainable territorial governance.

Keywords: citizen-based innovation, territorial lab, smart territory, pre-commercial procurement, autonomous province of Trento

## 1 Introduction

The experience of SPHERA (see Internet 1) has taught how a holistic approach in planning and providing public services can lead to effective territorial governance and positively affect the wellbeing and quality of life of people living in a territory. With this aim, territorial governance should pay attention to areas of intervention such as accessibility to services of general interest, demographic change, social cohesion and quality of life, which are considered to be the main drivers of inclusive growth. Moreover, greater involvement of the public ensures that technologies, services and innovative processes developed inside research centres respond to people's actual needs and have an actual positive impact on their daily lives. In this regard, a territory becomes a place where innovation occurs. It is considered not only as a natural landscape, but more broadly as a harmonious integration of all its components, including landscape, urban centres, cultural heritage, mobility and citizenship. From this perspective, governance also looks at a territory as a space for promoting people's wellbeing, integrating technology into the social and healthcare system aimed at developing new services, and fostering competences addressing a healthy life, active ageing and an emotionally rich way of liv-

ing. Furthermore, a territory becomes an economic resource leading processes of land exploitation and urban planning in a logic of sustainability that is fully compliant with the concept of "smart cities and communities" endorsed at both the national and European levels.

### 1.1 Smart, sustainable and inclusive development

The concept of the smart city has been widely used in literature with different meanings addressing different contexts that are not always consistent and make it difficult to define a comprehensive framework (Nam & Pardo, 2011). The perspective adopted in this article draws on the concept of sustainable development described in Lorena Bătăgan (2011) as a multidimensional concept that includes economic, social and political dimensions. Bătăgan identifies three main goals of sustainable development: a) improving quality of life, b) respecting the limits of the environment and c) investing in technological progress. According to Bătăgan, the goals of sustainable development match those of a smart city, with an increasing

number of people and a reduction in resources used for investing in quality of life and adopting technological solutions for managing people and resources. Following this perspective, making a territory smart means that interventions should be implemented in all of its sectors, including infrastructure and public services (Bélissent, 2010):

- *Transportation*: transportation systems can adapt (e.g., rerouting buses or opening new lanes) in real time depending on the actual traffic.
- *Utilities*: smart energy grids deliver only as much energy as needed to reduce waste; they inform users of how much they are consuming to influence demand.
- *Healthcare*: electronic patient records facilitate information sharing and collaboration across clinics, pharmacies and hospitals. Telemedicine extends the reach of medical facilities and improves access to medicine.
- *Education*: educators and administrators recognise the power of new technology to improve the efficiency and effectiveness of universities (e.g., increasing access to information and improving collaboration among students and faculty).
- *Public safety*: safety initiatives optimise the capacity and response time of emergency services, secure and control mass events, secure public administration transactions and workflows, and provide surveillance of public places.
- *Building management*: optimised and modernised heating, ventilation and air conditioning alone can significantly reduce building energy consumption. Integrated building and room automation systems further cut energy and operating costs.
- *Constituent services for both residents and businesses*: eGovernment portals enable cities to communicate better with their constituents, be they the public, employees, suppliers or local businesses.
- *City management*: citywide planning and technology implementations allow efficiencies across departments, such as the use of surveillance cameras for transportation and security solutions.

It becomes clear how smart solutions include strategic directions at the normative and administrative levels in urban planning. Governments and public agencies are increasingly embracing the concept of a smart city to design their policies, strategies and programmes for targeting sustainable development, economic growth and better quality of life for their residents (Nam & Pardo, 2011). Technology is a permeating factor of society that makes possible a variety of solutions for supporting people and improving their quality of life.

## 1.2 Trento as a smart city

Trento is the largest administrative centre in its province. Territory governance has always been attentive to people's needs, and has long promoted a political and operational strategy aimed at the "quality of life" concept. Such a concept is intended to stimulate not only economic growth as a unique paradigm (despite still being a fundamental aspect), but also social welfare, sustainable urban interventions and respect for diversity through carrying out and supplying advanced and innovative technological services.

Many years ago, Trento established a number of laws and policy regulations for alignment with this paramount and now essential "city lifestyle", convinced that continuous effort is required to maintain a pleasant living environment and a well-functioning community. This set of actions has permitted Trento to climb in two national rankings in recent years: quality of life and protecting the urban environment (Internet 2) and being a smart city. In addition, along with Helsinki, Stockholm, Berlin, London, Eindhoven and Paris, Trento is one of the seven European cities hosting a co-location of the EIT ICT Labs (Internet 3) and part of the Knowledge and Innovation Community of the European Institute of Innovation & Technology. EIT ICT Labs is a strategic initiative aimed at driving European leadership in ICT innovation for economic growth and quality of life. This highlights the relevance of ICT and its strong presence in terms of education and research capabilities in Trento, the chief town and heart of the province. In 2014, IEEE (the Institute of Electrical and Electronic Engineers, Internet 4) selected Trento as one of the ten smartest cities in the world under the "IEEE Smart Cities Initiative". In this project, Trento will develop and share its innovative solutions addressing people's quality of life of with other smart cities around the world.

The municipality is convinced that further progresses can only be accomplished by turning each person from a user into a co-builder of the city facilities, achieving a higher level of service acceptance and consequently benefits for the entire system. The same geographical location of the province, a mountainous and hilly area at the core of the Dolomites, made necessary a strong effort in building communication infrastructure to shorten paths between communities, residents and visitors.

## 2    From smart cities to smart territories

Starting from the experience of its main town, the autonomous province of Trento is beginning to embrace the idea of becom-

ing one of the first smart territories. This requires that the concept of the smart city be extended beyond the boundaries of urban areas, encompassing valleys and rural mountain regions that characterise the geography of the province. The aim is to bring all people closer together and give people living in small mountain villages the same opportunities to access the same services, the same quality of life and the same awareness of being part of the territory as people living in towns. The possible fields of intervention in which the use of technology can really make a difference in terms of smart territorial governance are varied and were already mentioned above. The provincial government has recently adopted a Research and Innovation Smart Specialisation Strategy (RIS3). In this document, the province outlines its approach to developing a smart territory and defines instruments and actors that will be taken into account for implementing it. The themes included in this document are mechatronics, a green and clean environment, quality of life and agrifood. For the purpose of this article, we focus on how the province is moving to provide smart answers to requests for more accessible, sustainable and high-quality healthcare services.

## 2.1 Enabling actors

The aforementioned goals can be achieved by pushing technological innovation and relying on an ecosystem that integrates business, higher education, universities and research institutions. On the one hand, the province can count on prestigious research centres that represent excellence in their fields: the University of Trento, the Bruno Kessler Foundation, the Edmund Mach Foundation and CreateNet, to cite only the largest ones. Over five hundred researchers are involved in ICT-related topics, and at least as many researchers operate in several other fields, from economics to sociology, from materials and microsystems to theoretical physics, and from biology to agriculture. On the other hand, the great effort made by the province for a technological transfer in terms of policies, funding and support structures (Trentino Sviluppo, Informatica Trentina and the Trentino Network) was repaid by a great flourishing of private companies (mostly ICT) in the territory. A group of them operating in health constituted the Health Innovation Hub (HIH; Internet 5). The HIH is a non-profit industrial consortium formed in 2011 with the aim to "join the best local and national skills in a laboratory of ideas for innovation in health and social services; sense the public demand from the ICT sector, participating in procurements and research projects and fostering the collaboration between private, public, academy and research to develop innovative technologies for Health and Wellbeing".

As intermediate players between academia and industry, the province promoted the creation of two actors, one smaller and

focused on healthcare (IRCS, or the Healthcare Research and Innovation Programme 2011) and the other with a broader spectrum of operation and responsibilities (Trento Rise). With a location in the territory and with the implementation of research and innovation in healthcare, the IRCS project has the role of acting as a mediator between clinical innovation requests and technological solutions in the territory, helping move knowledge from bench to bedside. IRCS was established in 2011 with the objectives of coordinating research, carrying out innovative activity in healthcare, fostering clinical research through tools and competences, driving innovative processes in healthcare to improve competitiveness, and providing training, educational tracks, professional continuing education, and graduate programmes. The second project, Trento RISE (Internet 6), is a non-profit association bringing together the excellences of the Trentino research ecosystem with a specific focus on ICT and with the mission of helping them in innovation-related activities and exploiting R&D results. Trento RISE is a core partner of the European Institute of Innovation and Technology in the EIT ICT Labs initiative. Trento RISE has the capabilities and role of managing the entire technology-driven innovation process. In relation to the RIS3, Trento RISE can implement the main instruments, linking them with the technology and territorial needs to offer territorial research and innovation activity at a more international level. The projects are implemented in close cooperation with the health authority and public/private stakeholders, with the goal of innovative services through exploiting innovative technologies, providing people with greater autonomy, lower demand for hospitalisation and better quality of life. In addition, TRISE supports local industrial counterparts in shaping key technology enablers towards innovative solutions, addressing issues of interest for business model innovation, efficacy and long-term sustainability of innovative solutions such as evaluation, users and market acceptance, culture and regulatory issues. As a partner of the EIT ICT Labs, TRISE can present results at a European level, thanks to its close connection with the other location centres, and the strong involvement of the Trento node in the health and wellbeing action line.

## 2.2 Enabling instruments

The instruments mentioned in the RIS3 to support the innovation process support collaboration among research activities, the public sector and enterprises, and sustain the process from service ideation to prototyping and market development. These instruments are designed to prevent solutions from entering the market without first being tested and designed with input from the public. They also aim to attract enterprises to exploit synergies with local research and education centres promoting the establishment of a public-private partnership (e.g., through pre-commercial procurement).

### 2.2.1　Territorial labs

Born as an evolution and extension of "living labs", territorial labs (TLs) adopt and implement the principles of user-driven, open innovation by bringing R&D design and validation activities out of the laboratories and into real life. People, businesses, academia and public authorities are engaged in helping create products, processes and services through peer-to-peer interaction in the context of public/private/people partnerships established at the local or regional level (Ferrari et al., 2011). Benefits of the method include improved usability, broader user acceptance, better time to market, lower risk and increased returns on investment. The TLs can be seen as an evolution of the living labs in terms of the size of the community involved and for the strong focus they have on the territory and the provision of territory-wide large facilities. As reported in the special issue of *Media2000* (2014), TLs have manifold functions. Thus, TLs can a) serve as platforms for validating applications and services addressing residents and the city in terms of the added value provided to the residents and business models, b) provide the proper context for understanding and addressing the possible impact on organisational aspects and regional governance, c) support marketing of validated solutions by means of permanent showcases and actual "testimonials" (from people involved) and d) attract further investments and stimulate the inception of local entrepreneurs. A key element is thus the construction of partnerships that involve public administration, industry, SMEs and business/volunteer associations together with traditional R&D actors (universities, research laboratories, etc.) and the essential complement of the public and public groups. Through this new and innovative composition and mechanism of aggregation, TLs are able to articulate territorial capital and highlight the resources that are present in a region, and they are committed to open innovation. This approach responds well to the bottom-up perspective adopted by the province of developing solutions for residents starting from their community and territory. Two main TLs have been implemented in Trentino: the SmartCrowds (Internet 7) and Health&WellBeing TLs (Internet 8), which mainly deal with services and applications for welfare and health, as well as a broad range of services based on smartphones.

### 2.2.2　Pre-commercial procurement

Pre-commercial procurement (PCP) is a process empowering public authorities to buy technologically innovative solutions that fit their needs. Public procurers act as first buyers that share with suppliers the benefits and risks of pulling technology from early-stage research to pre-commercial products. PCP focuses on domains in which no commercial solutions exist yet on the market. It is in essence a mutual learning pro-

cess for the procurers, users and the suppliers to obtain firm confirmation both about the functional needs on the demand side and the capabilities and limitations of new technological developments on the supply side when it comes to tackling a concrete public sector problem. As described in "Pre-commercial procurement: Driving innovation to ensure high quality public services in Europe" (see European Commission, 2007), PCP is usually composed of three phases, each having a well-specified focus and duration. In the first phase, the technical, economic and organisational feasibility of the proposal against the pros and cons of potential alternative solutions is evaluated, as well as its ability to solve the problem of public interest. Phase 1 finishes with a technology evaluation and an organisational plan about the planning of R&D in Phase 2, and an estimate of the economic impact of the proposed solution. Phase 2 includes actual development up to realising the first (not yet commercially usable) prototype, which has to be tested, and clear product specifications and a product plan have to be outlined. In Phase 3 research and development continues beyond the first prototype up to a first batch of pre-products/services (pre-commercial volume production) that are validated through field tests and original development. In Phase 3, companies are expected to address business aspects including production plans, marketing and communication strategies as well as their ability to attract interest from investors or first buyers.

### 2.2.3　European Regional Development Fund

The ERDF is the European Regional Development Fund (Internet 9). The province has exploited the ERDF to stimulate partnerships between companies and research organisations for promoting industrial research and experimental development in the ICT sector in the context of service innovation and health-tech in particular. Under supervision of HIH and consultants provided by the IRCS, five projects were developed to cover various segments of products and services related to e-health. Projects included e-bank facilities for advanced tissue diagnosis, integration of care for bridging hospitals to territories, and specialists to GPs, and medical devices for tracking and remote control at hospitals and at home. Overall, these projects will offer a unitary solution for advancing diagnosis and care in a hospital-to-territory integration vision.

### 2.2.4　Wireless and Optical TestBed Laboratory

The Wireless and Optical TestBed Laboratory (WOTBL, Internet 10) is an ICT infrastructure devoted to experimenting with and deploying future internet technologies, services, applications and prototypes located in the province. WOTBL is characterised by an open environment implemented on a communication infrastructure in which target user groups

can be part of the experiment. The testbed is composed of a citywide network to provide connectivity not only among the partners but also between them and the rest of Trentino's network infrastructures. The testbed provides a Europe-wide distributed experimentation platform and its unique combination of technologies will facilitate the deployment of end-to-end future internet trial scenarios in which bandwidth demand is highly relevant.

## 2.3 Key enabling technologies

A crucial role in the RIS3 is played by key enabling technologies (KETs), which have been chosen consistently with the characteristics of the scientific, technical and entrepreneurial context of the territory. The KETs that have been identified are ICT, micro- and nano-electronics, nanotechnology, advanced materials and industrial biotechnology. Some examples among the others are:

- Techniques and tools of e-health (e.g., eHealth, mHealth) for primary and secondary prevention and self-care, including the integration of telemedicine and telecare (e.g., chronic disease management, issues related to mental health, telemedicine and telecare-based sensors);
- Techniques that make use of nanotechnology and nano-materials to detect the presence of disease states through the direct interaction of these with specific markers and to facilitate treatment through controlled drug-delivery systems controlled by the presence of the markers themselves;
- Techniques, tools and platforms based on "big data" for collecting, processing, managing and exploiting personal data and aggregated patient/resident electronic health records (e.g., biometric data, clinical processes and health, need for medication, daily activities, habits and lifestyles) for real-time sharing of information with actors in socio-ecosystem health;
- Techniques for supporting the quality of life, primary prevention for the decline in physical, mental and social autonomy in vulnerable people (e.g., assisted living technologies, ambient intelligence, automation, tools for controlling instruments entrusted to patients, oxygen therapy and infusion pumps) and for the interaction and participation of social groups in difficulty.

Thanks to the KETs, new technological pathways have been identified that might improve practices and make the healthcare system more efficient. The mission of the provincial health service through this enabling technology is to develop an overarching assistance scheme in which smart hospitals and integrated and inclusive care will be the driving concepts of innovation in the healthcare sector.

# 3 A territory devoted to health and wellbeing

Given the premises cited above, healthcare innovation finds a favourable context for its development. The local healthcare service is committed to developing innovative solutions to support advanced models of service management in social care and healthcare provided to residents in an integrated manner by multiple agencies and organisations, both public and private. These solutions respond to principles such as usability and transparency, addressing issues of assistance, care, promoting wellbeing and social inclusion. As described so far in this article, Trentino has been characterised as being a promoter of quality of life and wellbeing of residents. Indeed, the synergic efforts among the various actors and the use of enabling technologies and instruments were already experimented with before formalisation in the RIS3 and produced several and different activities to foster this innovative process for the promotion of healthy ICT-based research. The main activities in this direction can be grouped into three intervention priorities:

- Wellbeing;
- Healthcare management and accessibility;
- Innovative assistance and care.

## 3.1 Wellbeing

The Suitcase project (Internet 11) is a PCP competition tendered by Trento RISE with the aim of developing innovative services in ambient assisted living. In particular, innovative services address the welfare of people in their own homes, with a focus on the elderly. The Suitcase project is also supported by the Health&WellBeing Territorial Lab for co-creation activities with users and stakeholders and experience evaluation. The Personal Fitness Club (Internet 19) aims to develop a tablet-based application allowing older adults to improve their health through physical exercise. The app was developed by an EU-wide project consortium in the EIT ICT Labs context. Finally, the Stress@Work project foresees the development of a participatory monitoring system and stresses management for people at work via mobile technology. The project is part of a larger project financed by the Action Line for Health & Wellbeing by the European Institute of Technology (Internet 12).

## 3.2 Healthcare management and accessibility

The purpose of this priority is to provide people with the highest possible level of autonomy, quality of life and participation in society by means of integration of health and social care plans provided by local healthcare. The Punto Unico di Accesso (PUA, Internet 13) is a PCP competition tendered by

Trento RISE with the aim of developing a "single window" approach to accessing social and medical services. Specific objectives of the PUA Project regard the development of innovative ICT architecture and services, enabling integrated care plans and optimising personalised multi-disciplinary interventions and related resources; innovative organisational models and user profiling; and training and information actions for users, relatives, operators and other involved actors. The project is supported by a strong commitment by the local health authority and the province's government and responds to a specific key component of Provincial Law 16/2010, which advocates facilitating access for and providing care to frail people through the integration of healthcare and social care. Moreover, since 2008, through the Innovation Project TreC, the province has encouraged the realisation of a platform of online services to access, share and update health-related documents, with the aim of promoting the empowerment of people. The TreC project also provides infrastructure for supporting assistance and a remote-monitoring trial and for studying changes in the relations between people and healthcare providers that derive from the introduction of new communication technologies (Internet 14).

### 3.3 Innovative assistance and care

The implementation of innovative services for assistance and care has a great impact on the sustainability and quality of healthcare system in the province, with particular attention to the integration between hospitals and territories. Effective collaboration among local authorities, health providers and private companies proved to be able to attract European funds. The Trentino health system is currently involved in several European projects designed to provide new technological solutions for managing care plans and integrating care with strong involvement of patients themselves and the surrounding communities. This is the case of Nathcare, a project (Internet 15) funded by the Alpine Space Programme to create a platform to manage long-term care patients with a transnational vision. Trentino chose the treatment of pregnancy as a case study, proposing a management model that follows the entire care path from conception to weaning. The Nympha project (Internet 16) focuses on implementing a PCP for mobile eHealth services to support physicians and patients in treating bipolar disorder through continuous patient monitoring in order to dynamically support illness management and potentially identify early deviations in mood and attitudes suggesting the onset of a crisis. Finally, three projects involving the local network of research and development with private companies (Trilogis and Socialit), research institutes (FBK, CreateNet and the University of Trento) and a healthcare Trust (APSS) have been funded by the European Commission to provide new services for patients and health providers based on indoor/outdoor lo-

calisation systems. The proposed systems will a) guide patients from home to the hospital and inside it (i-locate, FP7, led by Trilogis srl, Internet 17), b) optimise the use of electrical medical equipment by analysing the movement and position of instruments inside the building (iCore, FP7, led by CreateNet, Internet 18) and c) provide new ICT solutions for ambient assisted living for elder people with mild cognitive impairments (UNCAP, Horizon2020, led by Trilogis srl).

## 4 Conclusion

This article describes the structural system that was designed and fostered by the autonomous province of Trento to shape a smart territory in line with what is envisaged by Europe 2020. The European Commission identified three key aspects for economic growth in Europe: smartness, sustainability and inclusion. Governments and municipalities have therefore been encouraged to consider the development of their cities and territories by adopting innovative, creative and intelligent solutions in all economic areas (Bătăgan, 2011). The province has acknowledged and translated these guidelines into its Research and Innovation Smart Specialisation Strategy (RIS3). The RIS3 supports the creation of a smart territory, convinced that such growth can be properly addressed if it is actually driven by the public and enabled by technology. The smart territory as promoted in the province refers to an innovative model of governance, which integrates business, higher education, universities and research institutions in an eco-system aimed at implementing sustainable solutions and smart services for residents. The special feature of such a holistic approach is that the territory becomes a carrier of values, people and instruments that together contribute to its sustainable development. Research activities are developed in the field together with local residents, who have the possibility to actively participate in the innovation process and can be responsible for its outcomes.

For the province, the territory has therefore become a place for implementing and exploiting research. By means of its RIS3, the government has adopted instruments and identified enabling technologies that allow for fruitful collaboration of various components from the research and innovation system. This includes, for instance, internet infrastructures, testbed facilities, PCPs, territorial labs and public-private partnership. Moreover, this approach provides all stakeholders (business, research and society) with instruments to collaborate with the public sector towards developing people-centred solutions driven by people's real needs.

This variety of activities makes clear the complex management of the entire process. In the past year, with the IRCS project,

specific attention has been addressed to healthcare research and innovation recognising this sector as a strategic engine for inclusive growth and social innovation. The approach adopted by the province could constitute an example for developing sustainable research and innovation in the health sector as affirmed by the position paper for excellence in health research delivered by the Mattone Internazionale Project (2014) for the European semester of the Italian presidency. Trentino's government has pursued the goal of providing various actors with the proper instruments for public-to-private cooperation for developing services focused on real people's needs. The establishment of a dedicated actor, such as Trento RISE, that promotes a governance innovation strategy with a wide spectrum in the territory should be seen as an enabling factor for economic growth that supports dialogue among the public, researchers, stakeholders and policymakers to develop a sustainable and person-centred innovation system.

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# Promoting physical activity: An inter-sectorial activity between health and spatial planning

Spatial and urban planning can positively guide people toward effectively promoting health as an inter-sectorial process oriented toward empowering the community in terms of a healthy lifestyle and supportive environments for health. In the northern Italian region of Lombardy, activities follow the criteria of effectiveness, integration, a multi-sector approach and sustainability, and are developed in network programmes and/or with the involvement of regional health authorities, local authorities, associations and community stakeholders. The main activities in 2013 included the Health Promoting Schools Network (SPS), the Workplace Health Promotion Network (WHP, 145 companies engaged), walking groups (involving 18,891 participants, of whom 11,488 were under sixty-five) and information campaigns (Lifestyles Conducive to Health: A Good Region For ... and Stairs for Health). SPS, WHP, the walking groups and Stairs for Health programme have positive effects on both health and psychosocial development, with an indirect impact on the families and volunteers involved as well. The alliance with local governments, companies and schools plays a pivotal role in practical management.

**Keywords:** health promotion, physical activities, sedentary lifestyle, networks, community stakeholders, spatial planning

## 1 Introduction

This article draws on some considerations raised through an analysis carried out within the transnational SPHERA project (Spatial planning and health systems: enhancing territorial governance in Alpine space). The project originated through the joint interest of the general directorates for health and spatial planning of the Lombardy Region in exploring possible synergies and inter-sectorial approaches between health and spatial planning policies. The analysis has discovered multiple directions of investigation and various scenarios considering the extent to which health policies and activities can influence spatial planning strategies and vice versa. The main elements of reflection presented here combine the two dimensions addressed by the initiative.

## 1.1 Health promotion: An inter-sectorial process oriented toward community empowerment

Lifestyle plays a key role in people's health and is strongly influenced by physical, organisational, social and cultural contexts, at both the individual and community levels. A World Health Organization statement from 1998 emphasises the importance of the environment as a strategic element in promoting public health: "Lifestyle is a way of living based on identifiable patterns of behaviour which are determined by the interplay between an individual's personal characteristics, social interactions, and socioeconomic and environmental living conditions" (Internet 1). Until the twentieth century, the target of preventive healthcare was specifically focused on the community, aimed at containing the emergence and spread of infectious diseases. The epidemiological change towards the emergence of chronic-degenerative diseases made prevention policies concerning the four main risk factors causing them (an unhealthy diet, physical inactivity, smoking and alcohol consumption) essential because they represent the main cause of death in Western countries and have a considerable economic impact. These prevention programs primarily include activities aimed at strengthening health factors through health-promotion processes.

The first definition of health promotion was given in 1986 (The Ottawa Charter for Health Promotion) as a process enabling people to increase control over and improve their health. This concept of empowerment is multidimensional. The strategic activities identified from Ottawa (building a healthy public policy, creating supportive environments, strengthening community activities, developing personal skills and reorienting health services) underline the cross-sectorial commitment required in multidisciplinary programmes to promote healthy lifestyles and environments supportive for health. Among the most insightful planning models, the "Precede-Proceed" model (Green & Kreuter, 1999) identifies three groups of factors underlying processes of change: predisposing determinants (including knowledge, attitudes, beliefs and values that support or hinder individual motivation to change), enabling determinants (resources or barriers that help or hinder the implementation of behavioural changes or environmental conditions) and reinforcing determinants (answers received from other parties following the adoption of a new behaviour that encourages one to maintain or not maintain the new behaviour).

Territorial policies have a strong impact on these determinants, and therefore healthcare system activities in preventing chronic diseases require a basic alliance with spatial planning. The Lombardy Region has long been engaged in developing cross-sectorial programs, based on activities promoting effective and sustainable lifestyles and an environment conducive to health, reaching the community and taking into account the risk of inequality. The challenge of inter-sectorality is therefore to effectively make local communities places that are conducive to health and involves different knowhow from that involved in spatial planning. The ability to develop processes based on this interconnection is the key determinant of change for the health and wellbeing of communities.

## 1.2 Spatial planning

Today all major European cities are going through a period of great changes affecting both their socioeconomic structure and physical size. Consequently, cities and territories have become central themes again. They have radically changed in their spatial structure, in the way they operate, in the relationship between rich and poor and in their image. These changes are caused by years of a deep economic crisis in Western society: increasing individualisation and deconstruction of society, greater awareness of lack of natural resources, growing demands in health, education, technological progress and change in social interaction are all building images, scenarios, policies and projects that conflict with one other to some degree. Studies on the development of the new Regional Territory Plan of the Lombardy Region have highlighted some of the phenomena that have ongoing effects on quality of life and the need to develop the type and mode of service delivery:

- New issues of socio-economic marginalisation associated with a spatial territory totally different from what was seen in the past;
- The depopulation process in these areas;
- An ageing population.

In urban projects, it is important to consider the spatial structure of the city, recognising the importance of layout of the land, acknowledging the role of its infrastructure so that it gives the city and the region better permeability and accessibility, designing quality public spaces and considering once again the "collective dimension" as a common good.

## 1.3 Impacts of participatory territorial planning on health

Environment and territory directly impact people's health. The strong correlation between health and environment is highlighted by the direct relationship between the most disadvantaged strata, with a low level of education and the highest rate of diseases. These strata of the population are often concentrated in low-quality urban land, characterised by various types of degradation (territorial, environmental and social) and suffer the influence of psychological distress
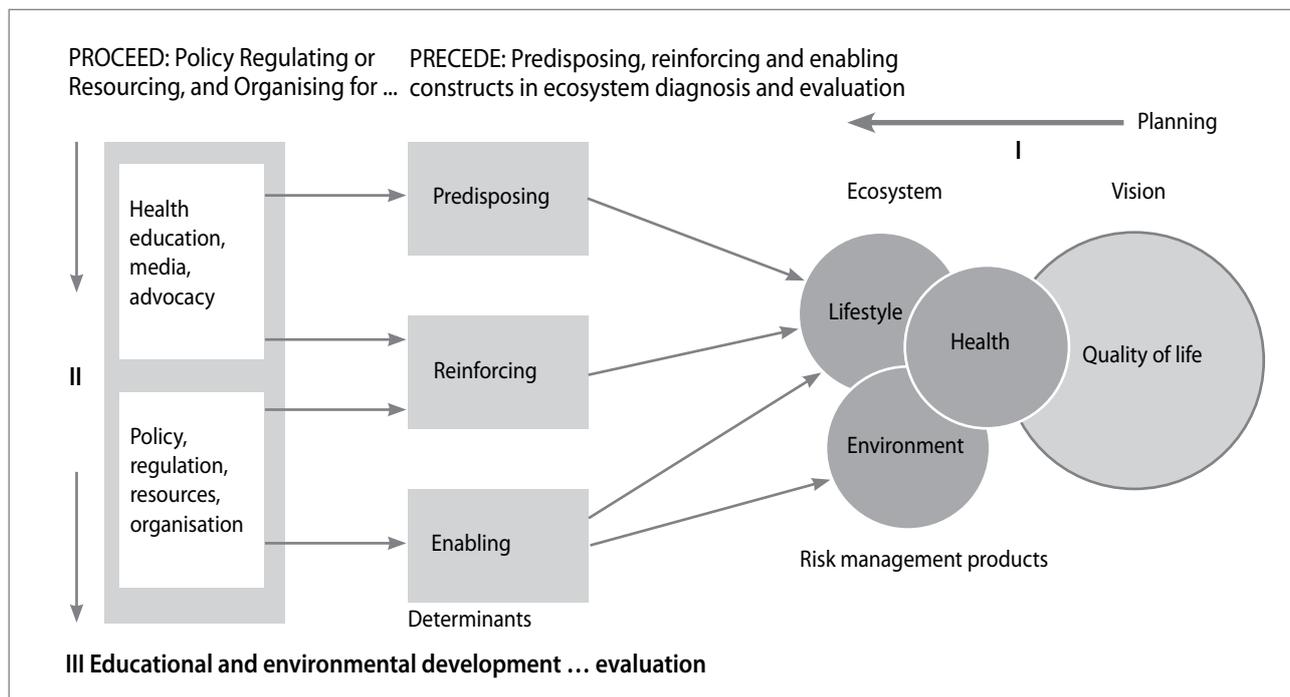
**Figure 1:** The Precede-Proceed model of health program planning and evaluation (source: Green & Kreuter, 1999).

risk factors, an element that directly affects individual health. The public neighbourhood is emblematic of this diverse set of issues, which interweaves urban decay (abandoned areas, neglect, architectural barriers and dilapidated buildings) with social problems (loneliness among the elderly, unemployment, crime, social exclusion, poverty, dropping out of school and youth problems). It is necessary to identify a series of strategic and operative coordinates to approach the complexity of the problems, identifying their main features.

An improvement in the quality of life can be achieved by applying inclusive, open and participatory programmes that are closer to the recipients and that can increase the sense of ownership of common areas. Participatory approaches are called for today and must be reshaped based on the characteristics of the local society, strong demographic changes (ageing and immigration), employment (flexibility and insecurity) and culture (values and lifestyles). There is a direct connection between environmental policies, urban planning, territory and health promotion. Policies at the social and local levels (urban planning, welfare housing, mobility, environment, etc.) have significant impacts on people's wellbeing (satisfaction, improved quality of relationships, confidence and sense of cohesion). To produce social cohesion, it is essential to build sustainable projects according to strong shared priorities, to create a network between subjects and between knowledge, to build territorial knowledge, to develop local skills and to act in an integrated way. To do this, it is necessary to have a method and some good tools to enable individuals and organisations to



**Figure 2:** Causes of chronic diseases. Preventing chronic disease: A vital investment (source: WHO, 2005).



**Figure 3:** Non-communicable diseases. Four diseases, four modifiable risk factors (source: Internet 2).

work together to achieve shared goals through a participatory process based on actual cohesion between promoters (institutions) and participants (citizens) in the initiative.

## 2 Promoting a healthy lifestyle and supportive environments for health

Investing in prevention and control of chronic diseases or degenerative diseases (chronic non-communicable diseases, or NCD) makes it possible to reduce premature deaths, preventable morbidity and disability, and to improve the quality of life and wellbeing of individuals and society. No less than 86% of deaths and 77% of the disease burden in the WHO European region are caused by this large group of disorders that share common determinants (social, economic, etc.; WHO Regional Office for Europe, 2011), modifiable risk factors and prevention strategies.

Research-based evidence and international guidelines (WHO European Region) indicate the need for integrated preventive activities (Figure 4) aimed at facilitating the adoption of healthy lifestyles, based on strategies of health promotion at both the population (or community) level and individual level. An active lifestyle with daily physical activity contributes not only to preventing major chronic degenerative diseases, but also to promoting psychological wellbeing by reducing anxiety, depression and loneliness, and to supporting "active and healthy ageing" by increasing the degree of autonomy of the elderly and reducing the risk of falls. In 2013, 41% of Europeans exercised or played sports at least once a week, whereas 59% never or rarely did (European Commission, 2014). In 2013, 30% of Italian people three or older stated that they engaged in one or more sports in their free time; among these, 21.3% play sports on an ongoing basis and 8.7% only occasionally. People doing physical activity, even if not playing sports, account for 27.7%, whereas 42% are sedentary.

In Lombardy a sedentary lifestyle is common in childhood, adolescence and adulthood (Figure 5), although with less critical situations than in other areas of the country. WHO's lifestyle definition (WHO, 1998) highlights the complexity involved in the process of changing behaviour, which has to be taken into account to plan effective and sustainable public health. Thus, to sustain an active lifestyle, educational, informative and communicative activities are needed (individual empowerment), but at the same time it is necessary to act on environment determinants (Catford, 1998; WHO Europe, Salute 2020, 2012) such as the urban structure of the city, social networks, opportunities to join promotion programmes and so on.

Because people spend their lives in buildings (workplaces or schools) and moving from one place to another, improving the environment to facilitate physical activity is a great opportunity to promote health. "Buildings and sites are deliberately designed to support a set of activities and to create or reinforce a set of cultural assumptions. So, at the outset of any design, it can be said that behavior causes environment. However, as individuals and groups use buildings on a daily basis, they are affected by the built-in physical aspects of the building and site, such as the availability of space for different functions, relationships among spaces, aesthetics, and symbolism. Each of these relationships are [sic] potentially mediated and moderated by individual and group knowledge and attitudes. Nonetheless, in the short term, environment influences behavior" (Zimring et al., 2005: 187).

The health system and territory management system has to cooperate in order to develop an environment that can support physical activity. Attitudes to health are strictly influenced by structures within the environment (e.g., in workplaces; Pritchard, 2004). Different settings such as urban and rural present many differences: demographic, anthropometric, physiological and health-related variables. A comparison of different settings shows how tailored activities and educational strategies maximise healthy lifestyle promotion (McConnell, 2010).

The "Toronto Charter for Physical Activity" (Global Advocacy for Physical Activity, 2011), a programming tool based on this advocacy process, identifies and describes the seven best investments (Toronto Charter for Physical Activity, 2010; sustainable and evidence-based activities) to increase the level of physical activity of the population which, if applied on a sufficient scale, can contribute significantly to reducing the burden of non-communicable diseases and promoting the health of the population:

1. Programmes targeting the entire school community;
2. Transport policies and systems that prioritise walking, cycling and public transport;
3. Urban design regulations and infrastructure that provide for equitable and safe access for recreational physical activity, and recreational and transport-related walking and cycling across the life course;
4. Physical activity and NCD prevention integrated into primary healthcare systems;
5. Public education, including mass media, to raise awareness and change social norms on physical activity;
6. Community-wide programmes involving multiple settings and sectors and that mobilise and integrate community engagement and resources;
7. Sports systems and programmes that promote sports for all and encourage participation across the lifespan.

**NICE**

**NHS: community**
- Involve parents and carers in the actions addressed to children and young adults
- For at-risk children families:
    - Offer individual counselling and costant support
    - Consider family intervensions, according to child age and maturity
- When working with pre-school aged children and their families, use different components (not only focusing on parents training): i.e. cooking demonstrations, discussion on planning and purchase of meals, safety and local facilities.
- During family programs provide adequate and constant support and implement behavior change strategies.

**NHS: primary care**
- Advice parents and children concerned about their body weight.
- Assess and manage obesity and overweight as needed.

N H S

**Pre-school**
- Provide regular opportunities for enjoyable active play and structured physical activity sessions.
- Implement the current guidance on food procurement and healthy catering.
- Ensure that children eat regular, healthy meals in a pleasant, sociable environment free from other distractions.
- Involve parents and carers

**School**
- Ensure that school policies and the environment promote physical activity and healthy eating.
- Provide staff training (teachers, support and catering staff).
- Establish links with health professionals and implement local strategies and partnerships to promote sports.
- Promote activities that children and young people find enjoyable and can take part in outside school, involving adults.
- Introduce long-term interventions to encourage pupils to take on healthy lifestyles.
- Consider the views of children.
- Children should eat meals in a pleasant, sociable environment, free from other distractions. Younger children should be supervised at mealtimes.
- Involve parents.

C O M M U N I T Y

**Children and parents**
- Follow NICE-guidelines and other advice on diet and physical activity.
- Children and young adults should eat regular meals, including breakfast, in a pleasant, sociable environment without distractions (such as watching television). Parents and carers should eat with children – with all family members eating the same foods.
- Reduce sedentary activities – such as watching television or playing video games – and increase physical activity such as other active recreation, walking or cycling to school.
- Consult a doctor if necessary

I N D I V I D U A L

**Figure 4:** Model of integration between the NHS (National Health System) community programmes and individual activities (primary care) in preventing obesity in children and adolescents (source: NICE Clinical Guideline 43, 2006).

# 3    Public health activities in Lombardy

The regional local health units (Ital. *Aziende Sanitarie Locali,* ASL) address the promotion of physical activity, healthy eating and other health or risk factors, such as smoking, in an integrated manner. The activities are based on regional guidelines (Sanità, 2009) and are oriented to appropriateness criteria such as effectiveness, integration, intersectorality and sustainability. Currently activities are developed in network programmes (workplace and school) and/or carried out with the involvement of local authorities, associations and other stakeholders or local communities (Figure 6).

## 3.1   The health-promoting school network in Lombardy

In the health-promoting school network (Ital. *Rete SPS Lombardia*), a new guideline for health promotion (an Iseo chart) was published, more hours of physical activity, including extracurricular hours, are available for schools and 26,000 children go to school every day with a "walking bus" involving one
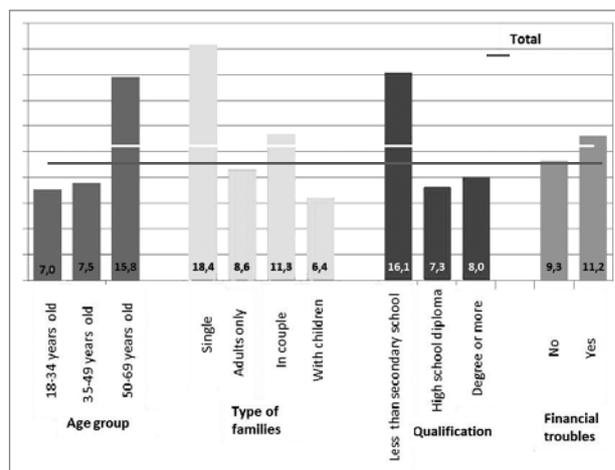


**Figure 5:** Sedentary population eighteen to sixty-nine years old according to some social and demographic characteristics. Lombardy, 2013 (in percentages; source: Lombardy Region Statistical System).

primary school out of five. The goal of the SPS is to be an environment conducive to health through evidence-based activities in various areas: educational, social, organisational and collaboration with others in the local community.
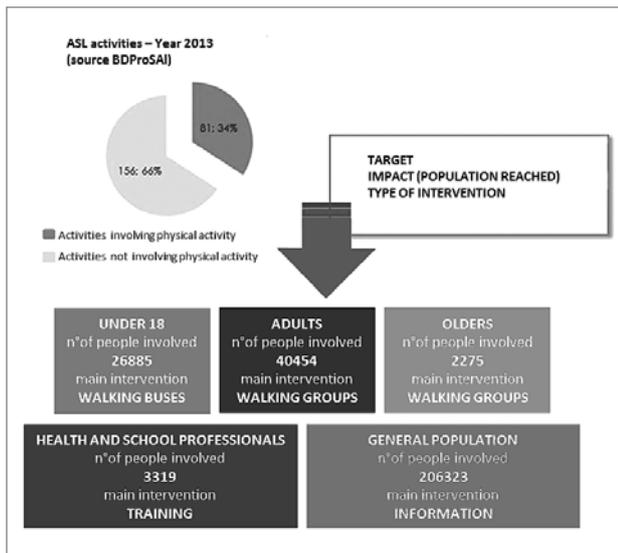
**Figure 6:** Regional local health unit activities in 2013 (source: Lombardy Region Statistical System).
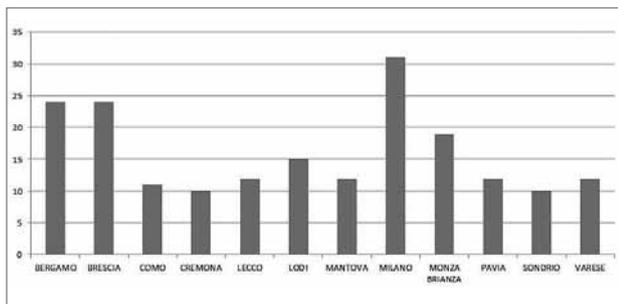


**Figure 7:** Number of network schools per province, 2012–2013 academic year.

This strategy ensures schools activation (empowerment), with the research-based support of local health authorities where necessary in order to strengthen competence and awareness about health in the entire school community and to create an environment in which the adoption of healthy behaviours is easy and rooted in everyday culture. The regional network of health-promoting schools is a member of the Schools for Health in Europe network (Internet 3; see Figure 7). According to a recent Cochrane review (Dobbins et al., 2013), school-based activity proved to be moderately effective in increasing the number of children engaged in moderate to vigorous physical activity and in reducing the amount of time spent watching television. Many factors are known to influence the physical activity level in school-aged children and adolescents: for example, the local road environment (Carver, 2010) and family and neighbourhood socioeconomic conditions (Pabayo, 2011; Pouliou, 2014).

## 3.2 Workplace health promotion: The Lombardy WHP network

The WHP network is made up of companies ("workplaces") that recognise the value of corporate social responsibility and seek to be an environment conducive to health that uses research-based support from the local health unit where necessary to systematise various evidence-based activities: informational (helping people stop smoking, eat healthily, etc.), organisational (canteens, snack vending machines, stair-health programmes, walking or biking from home to work, a smoke-free environment, baby pit-stops, etc.) and collaboration with others in the local community (associations, etc.). Out of 145 companies, 57% are engaged in physical activity (information campaigns, agreements between companies and sports facilities and promoting bicycle use; Figure 8).

The Lombardy WHP network belongs to the European Network for Workplace Health Promotion (ENWHP; Internet 4). There is a growing body of knowledge on evidence-based activities and best practices that can be adopted in this setting: for example, implementing pedometer-based programs (Freak-Poli et al., 2014), campaigns to take the stairs (Internet 5, McGann, 2013) providing wellness facilities (Kolbe-Alexander 2014) and walk-to-work activities (Procter, 2014) are known to be effective in increasing physical activity and psychosocial health in workers, whereas other activities such as walking groups at lunchtime, especially if a few times a week and without adequate support, are not effective (Brown, 2014). Moreover, the results of a recent study (Bale, 2014) indicate that individuals with a supportive work environment are more likely to use time at work to exercise.

## 3.3 Walking groups

Walking groups are groups of people that regularly meet to walk together. They were initially led by operators and then gradually created on their own through the formation of "walking leaders" identified among volunteers. Many studies show how factors related to the environment (poverty rate, racial distribution, safety from crime, population density, traffic conditions, public walking tracks and trails, etc.) influence walking behaviour (Kelly et al., 2007; Oh, 2010; Gallagher et al., 2010; Sun, 2014).

In March 2014, the General Directorate of Health (Ital. *DG Salute*) carried out a survey that took a picture of the development of this initiative, which has been activated by all fifteen local health authorities through a participatory process with the involvement and activation of municipalities and associations. Walking groups involve 18,891 participants (of which 11,488 were under sixty-five; Figure 9), with groups
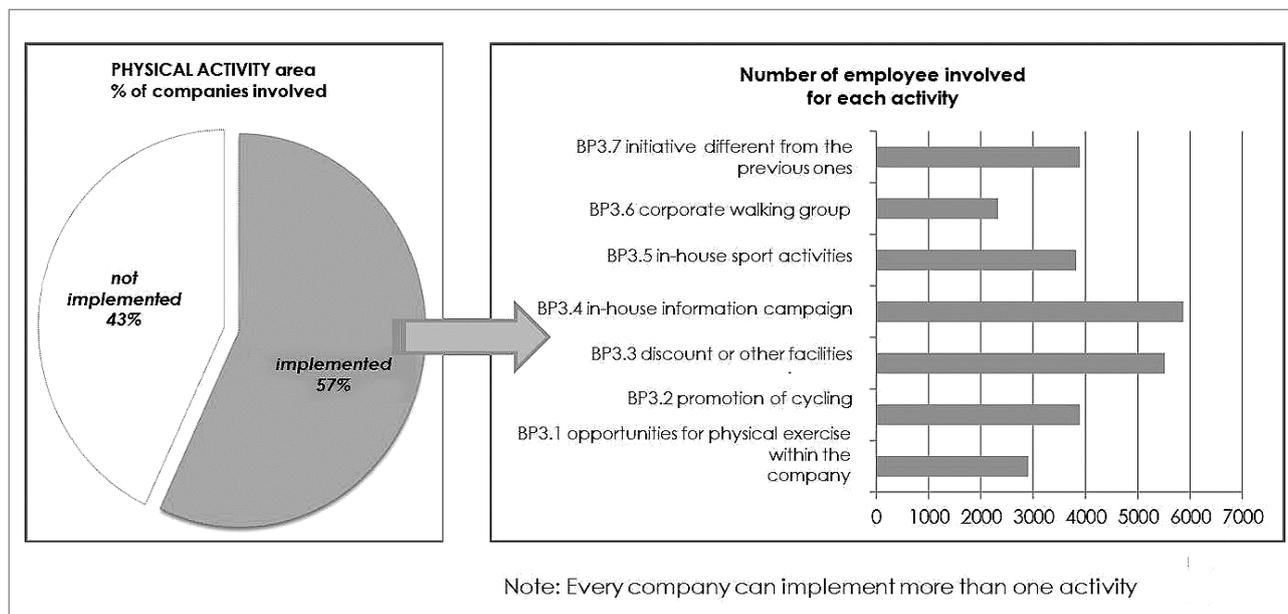
**Figure 8:** Lombardy WHP network companies that started recommended activities for promoting physical activity: activity type and number of employees involved for each activity (source: Regional WHP Lombardy database).

dedicated to patients (diabetics, cognitive disability and motor disability). Additional walking groups also arise through activities by network members (WHP, health-promoting schools network, healthy cities, etc.).

### 3.3.1 Walking groups and health gains

The short-term health-gain calculation (in a healthy lifestyles promotion program) must rely on statistical models that can show how reducing one or more risk conditions may prevent death or adverse events. WHO has developed one of these models: HEAT (Internet 6) makes it possible to estimate the reduction in mortality following regular activity such as cycling and/or walking. It is based on the best available evidence, with parameters that can be tailored to suit specific situations (the default parameters are valid for the European context). Estimating average walking of 120 minutes per week at a slow pace (two one-hour walks at 4.8 km/h) for participants in the Lombardy walking groups (18,891 people), HEAT calculates that the activity may decrease the risk of mortality by 14% in walking-group participants compared to a sedentary population (limit: HEAT makes it possible to estimate the impact by age range from eighteen to seventy, thus excluding those over seventy in walking groups). The decrease in risk cannot be related to an individual, but it is a good representation of the actual health-gain activity.

### 3.4 "Walking buses"

A "walking bus" is a safe pedestrian route from home to school along a route normally travelled by bus or car. Children go to

school on foot, accompanied by adult volunteers and along a predetermined route with stops. In March 2014, the General Directorate of Health carried out a survey that photographed the development of this project, which is present in all fifteen Lombardy local health units. The municipalities that activated the "walking bus" number 341, corresponding to 22% of Lombardy's municipalities. Fifty-seven percent of children between six and ten that live in Lombardy go to school by a "walking bus". The number of schools involved is 501: about 21% of Lombardy primary schools provide a "walking bus" service.

### 3.5 Stairs for health

"Stair climbing can be a low-cost and relatively accessible way to add everyday physical activity, but many building stairwells are inaccessible or unpleasant and elevators are far more convenient" (Nicoll & Zimring, 2009: S114). An American study explores the use of and attitude toward stairs in an innovative office building where the main elevators for able-bodied users stop at only every third floor ("skip-stop" elevators). This strategy was successful in increasing stair use, and then physical activity can also improve thanks to these kinds of activities. The promotion of stair use was enhanced by the General Directorate of Health (U. O. Governo della Prevenzione e Tutela Sanitaria, 2010) and it is one of the simplest and most effective community activities in counteracting the sedentary lifestyle and increasing physical activity. Systematic literature reviews (Task Force on Community Preventive Services, 2002) have shown that written advisories on replacing elevators or escalators with stairs placed at strategic points motivate people to be more active. The recommended activity (CDC Atlanta,

| ASL | Total number partecipants | Partecipants over 65 | Population rate ‰ aged 65-74aa | Number of municipalities involved | % municipalities with walking groups |
|---|---|---|---|---|---|
| Bergamo | 4475 | 2000 | 18 ‰ | 93 | 38 % |
| Brescia | 890 | 478 | 4 ‰ | 32 | 20 % |
| Como | 195 | 150 | 2 ‰ | 10 | 6 % |
| Cremona | 173 | 130 | 3 ‰ | 5 | 4 % |
| Lecco | 2615 | 1085 | 30 ‰ | 48 | 53 % |
| Lodi | 180 | 120 | 5 ‰ | 7 | 11 % |
| Mantova | 1316 | 987 | 22 ‰ | 33 | 47 % |
| Milano | 1105 | 911 | 5 ‰ | 4 | 57 % |
| Milano 1 | 3620 | 3000 | 30 ‰ | 52 | 71 % |
| Milano 2 | 520 | 100 | 2 ‰ | 14 | 26 % |
| Monza and Brianza | 400 | 400 | 4 ‰ | 11 | 20 % |
| Pavia | 2260 | 1350 | 22 ‰ | 84 | 44 % |
| Sondrio | 452 | 227 | 12 ‰ | 14 | 18 % |
| Varese | 374 | 250 | 3 ‰ | 8 | 6 % |
| Valle Camonica S. | 316 | 300 | 27 ‰ | 9 | 21 % |
| **Lombardy** | **18891** | **11488** | **11 ‰** | **424** | **27 %** |

**Figure 9:** Walking groups in Lombardy (source: Lombardy Region Statistical System).

2010) consists of exposure next to the point where one has to choose whether to go on foot or by elevator. Posters, banners or placards encourage people to use the stairs, illustrating the health benefits of physical activity and stressing that this simple choice is a very easy opportunity to have a more active lifestyle. Nevertheless, the stairs, despite being promoted as a better life choice for better health, are not actually promoted through building design, as the results of the "Take the stairs instead" campaign suggest (McGann, 2013). Health-promotion strategies could be coupled with design-led movement strategies in workplace design so that the promotional language of such campaigns is balanced by the design language of the building.

## 4 The European Innovation Partnership on Active and Healthy Ageing

Within the overall Innovation Union strategy (Internet 7), the European Commission has identified "active and healthy ageing" as a major social challenge common to all European countries, and an area that has considerable potential for Europe to lead the world in providing innovative responses to this challenge. The European Innovation Partnership on Active and Healthy Ageing (EIP-AHA; Internet 8, Internet 9) has the goal of pursuing a triple win for Europe:

1. Enabling EU citizens to lead healthy, active and independent lives while ageing;
2. Improving the sustainability and efficiency of social and healthcare systems;
3. Boosting and improving the competitiveness of markets for innovative products and services, responding to the

ageing challenge at both the EU and global levels, thus creating new opportunities for businesses.

This will be realised in the three areas of prevention and health promotion, care and cure, and active and independent living by the elderly. The partnership aims to achieve this by bringing together key stakeholders: all actors in the innovation cycle, from research to adoption (adaptation), along with those engaged in standardisation and regulation. Six activity groups have been identified for specific areas of activity:

1. Prescription and adherence to treatment;
2. Personalised health management, starting with a fall-prevention initiative;
3. Prevention and early diagnosis of frailty and functional decline, both physical and cognitive, in older people;
4. Integrated care for chronic diseases, including remote monitoring at regional levels;
5. Developing interoperable independent living solutions, including guidelines for business models;
6. Innovation for age-friendly buildings, cities and environments.

The Lombardy Region has joined the EIP-AHA in providing its commitment focusing on the "Innovation for Age-Friendly Buildings, Cities & Environments" area and targeting health promotion in Lombardy's local communities (i.e., cities) in terms of success factors for healthy ageing. Lombardy's participation in the EIP-AHA has the twofold objective of supporting the governance role of the region and its healthcare system by sharing, at the European level, notable and effective experiences already implemented on the territory addressing health promotion and prevention, and enhancing the coherence of

regional strategies in these areas of activity with the priorities identified at European and international levels (WHO). In this light, the EIP-AHA is a unique platform for fostering the participation of the regional health system stakeholders in a transnational initiative enabling mutual learning and the establishment of new alliances with reference networks.

# 5 Conclusion

The Lombardy Region is undertaking health-promotion paths as indicated in the WHO document "Health 2020" (WHO Europe, Salute 2020, 2012), according to which health benefits can be attained at an affordable cost and within resource constraints if effective strategies are adopted. To achieve this goal, effective activities require a policy environment that overcomes sectoral boundaries and enables integrated programmes, also because only by taking action on the social and environmental determinants of health is it possible to address many inequalities effectively. Urban development that considers the determinants of health is crucial, and mayors and local authorities are playing an increasingly more important role in promoting health and wellbeing. Participation, accountability and sustainable funding mechanisms reinforce the effects of such local programmes. More specifically, the walking-group program has been brought to the attention of the EIP-AHA initiative as a good practice deployed across the entire regional territory and implemented under the coordination of the regional government through the complementary contribution of various players such as local health units, professionals, citizens and municipalities. More information on the Lombardy walking group program and other European practices can be found in the first edition of the compiled good practices report issued as part of the EIP-AHA (Internet 10).

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# The Austrian healthcare system: Space-related issues and future challenges

This article analyses the Austrian healthcare system with respect to both current and future challenges. It specifically takes into account the consequences of geography (the Alpine region, and remote and rural regions) for healthcare planning. We find that a patient-oriented approach to healthcare provision, rather than an institution-oriented approach, combined with inclusive healthcare and a more integrated view instead of looking at single issues, will allow forward-looking adaptations of the Austrian healthcare system. This allows the healthcare system to deal with future challenges, such as cost increases, a

potential lack of physicians, maintaining good healthcare provision throughout the country and good accessibility to the healthcare system for everyone.

## 1  Introduction

The Austrian healthcare system is frequently claimed to be one of the best in the world in terms of quality, coverage and accessibility. Indeed, almost everybody living in Austria – every payer of social security contributions and legally defined recipient of social security benefits (corresponding to 99.9% of the Austrian population in 2013; see Hauptverband, 2014) – has access to a broad variety of medical services, in terms of both inpatient and outpatient healthcare (e.g., 18.3 million hospital days in 2013; 4.9 practicing physicians per 1,000 inhabitants, the highest physician density in the OECD after Greece, 29.2 CT scanners per 1 million inhabitants, etc.; see Internet 1, Bundesministerium für Gesundheit, BMG, 2012, Statistik Austria, 2014, Hauptverband, 2014). Of course, this rather intense supply of healthcare comes at some cost, about 10.7% of Austria's GDP was spent in the healthcare sector in 2013 (see Statistik Austria, 2014), according to the OCED's System of Health Accounts (SHA). This was above the OECD average of 9.3% in 2013. In recent years, the ratio of healthcare expenditures to GDP has been increasing again, after remaining more or less constant between 1998 and 2007, and it was at 10.7% of GDP in 2012 (see Statistik Austria,

2014). Out of all healthcare expenditures, about 75% are public, and the rest are private expenditures. Since 1990, the average annual growth rate of healthcare expenditures has been at 5.1%, and GDP increased on average by 3.9% (see Statistik Austria, 2014). This difference is becoming greater in recent years due to the general economic and financial crisis and the associated economic downturn, while medical progress and the demand for healthcare services continue to increase. As a consequence, it is more difficult to finance increasing healthcare expenditures out of public authorities' budgets.

For many years, there has been a continuing debate about making the Austrian healthcare system more efficient in terms of using the available resources and slowing down increases in costs. In order to achieve the goal of greater (cost-)effectiveness in providing (public) healthcare services, better knowledge of the current situation – not only in the medical sense, but also in a geographical and economic sense – seems important, which may subsequently lead to better structural planning. Of course, one might argue that the current approaches of the Austrian Structural Plan for Healthcare (Österreichischer

*Strukturplan Gesundheit*, ÖSG; see BMG, 2012) already have this goal. However, a frequent criticism is that there is a lack of progress in the desired direction so far for political reasons (i.e., federalism).

This article examines the most important current and future challenges to the Austrian healthcare system. It tries to identify areas where steps will be necessary in the near future to master these challenges and to maintain the high standards of healthcare provision for the Austrian people. Furthermore, the article accounts for the special features of the Austrian healthcare system that arise from geographic facts. The remainder of the article is organised as follows. Section 2 briefly introduces the Austrian healthcare system and its specific features regarding both the inpatient and outpatient sectors. Section 3 discusses and analyses current challenges to the healthcare system, and Section 4 analyses how those challenges might develop in the future and how space-related issues affect such developments. Section 5 summarises and concludes the article. It is beyond the scope of this article to provide a comprehensive and in-depth discussion about the Austrian healthcare system. Therefore, we focus on the major issues that are relevant in terms of their relation to space and future importance. Even for these aspects, this article does not offer an exhaustive analysis and discussion.

## 2    The Austrian healthcare system

The Austrian healthcare system is a two-tiered system, with respect to both financing and service provision. There are public and private hospitals, constituting the inpatient sector, and contracted and non-contracted physicians, constituting the outpatient sector. Unlike in other countries in the Alpine region (e.g., Italy), there is no gatekeeper to access the healthcare system for patients, and so everybody is free to choose to consult a physician in a practice or a hospital.

The organisation of the Austrian healthcare system has its roots in the mid-nineteenth century. For this historical reason, there is still a split in responsibilities between the federal and regional levels, a strong delegation of responsibilities to self-governing bodies (social security institutions) and mixed financing (see Hofmarcher, 2013). As Figure 1 shows, the organisation is complicated and is therefore frequently characterised as a severe obstacle to real healthcare reforms.

### 2.1   Financing

The Austrian healthcare system is predominantly financed through mandatory social security and healthcare contributions by employers, employees, self-employed people and farm-

ers (the first tier). The contributions are based on income and have an upper bound (maximum assessment base), meaning that, after exceeding a certain (annually adapted) gross income, social security contributions do not increase any further (for 2015, these values are EUR 4,650 monthly for employees and EUR 5,425 monthly for self-employed people). In addition, government authorities contribute to financing by at least partly covering investment expenditures by publicly financed hospitals. Private healthcare financing (the second tier) is made up of private health insurance payments (about one-third of the Austrian population has private health insurance of some kind), as well as out-of-pocket spending and deductibles for services covered by the mandatory health insurance. This out-of-pocket spending is particularly important in dentistry, for instance, where mandatory insurance coverage is comparatively low. Contracts with private health insurance typically increase the coverage of first-tier services and/or allow for increased provider choice within the healthcare system in both the inpatient and outpatient sectors.

### 2.2   The inpatient sector

The inpatient sector in Austria consists of public and private hospitals, where public and private refers to financing rather than ownership. There are, for instance, some public (publicly financed) hospitals under private (non-profit) ownership or an organising institution. The inpatient sector is the major building block of the Austrian healthcare system; more than 40% of total healthcare expenditures in 2013 (or 4.4% of GDP) are found in this sector. Over 130,000 employees work in 277 hospitals, and so hospitals are the largest provider of healthcare services in Austria (see Statistik Austria, 2014). Out of the 277 hospitals (see Table 1), there are 127 publicly financed ones. The public hospitals have the major share of beds (over 80%) and thus cover the major share of inpatient treatment (see Hofmarcher, 2013).

In 2012, there were 7.7 hospital beds per 1,000 inhabitants, which is far above the OECD-average of 4.8. Like almost everywhere in the OECD, bed-density has decreased in recent years, along with the average length-of-stay ($-10.7\%$ between 2002 and 2012; 6.5 days on average). However, the number of hospital stays in Austria has increased far above the OECD-average (270 hospital releases per 1,000 inhabitants in Austria, the highest in the OECD, vs. 156 in the OECD-average; see Statistik Austria, 2014).

### 2.3   The outpatient sector

In Austria, there are two types of physicians in the outpatient sector, contracted and non-contracted ones, whereby "contracted" means having a contract with the Austrian public
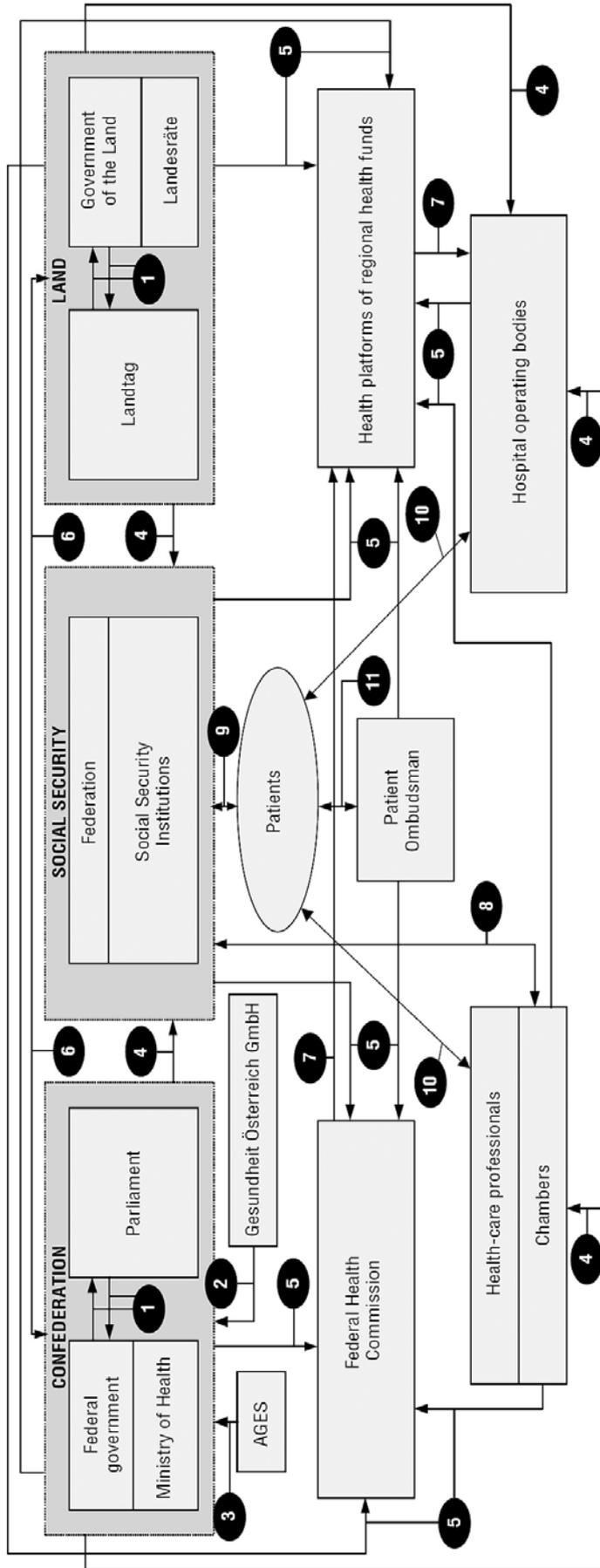
(1) (a) Draft legislation by the federal government (minister responsible) to Parliament, or by the Land government (minister responsible at Land level) to the Landtag.
(b) Agreement of federal law by Parliament, or Land law by the Landtag.
(2) Support to the Federal Ministry of Health.
(3) Support to the Federal Ministry of Health, particularly in the context of licensing medication (AGES = Agency for Food and Health Safety).
(4) Health administration:
(a) at federal level (e.g. health-care policing, sanitary supervision of hospitals, monitoring of social security institutions and legal bodies representing interest groups);
(b) at Land level (e.g. concerning permits to build and run hospitals, licensing processes for outpatient clinics and group practices, implementation of planning in the region, investment finance).
(5) Appointment of members of the Federal Health Commission or regional health platforms.
(6) Consultation mechanism between the federal level and local and regional authorities with regard to legislative measures (laws and regulations) which require additional expenditure.

(7) (a) Sanction mechanism: the Federal Health Agency (Federal Health Commission) can withhold financial resources from a regional health fund (health platform) if it contravenes compulsory plans and guidelines regarding quality and documentation.
(b) Regional health funds (health platforms) can designate a corresponding sanction mechanism for hospitals.
(8) Negotiations on market entry, services and tariff charges (collective and individual contracts).
(9) Legal membership of social security institutions (compulsory insurance).
(10) (a) Fundamental freedom of choice for patients over hospitals and independently practising members of the health-care professions.
(b) Obligation to treat, which exists for public and private non-profit-making hospitals and contracted independently practising members health-care professionals.
(11) Legal representation of patients in every Land.

*Source:* Ministry of health.

**Figure 1:** Organisation of the Austrian healthcare system (source: Hofmarcher, 2013).

**Table 1:** Inpatient hospital care.

|  | 2002 | 2012* | Change 2002–2012 (%) |
|---|---|---|---|
| Hospitals |  |  |  |
| Number of hospitals | 267 | 277 | 3.7 |
| Of which: acute hospitals | 186 | 175 | −5.9 |
| Beds |  |  |  |
| Number of beds | 63,092 | 64,691 | 2.5 |
| Beds per 1,000 inhabitants | 7.8 | 7.7 | −1.0 |
| Hospital releases All hospitals** |  |  |  |
| Releases | 2,480,127 | 2,813,756 | 13.5 |
| Releases per 1,000 inhabitants | 306.9 | 333.9 | 8.8 |
| Of which: zero-day-stays | 347,058 | 535,164 | 54.2 |
| Acute hospitals*** |  |  |  |
| Releases | 2,011,788 | 2,098,227 | 4.3 |
| Releases per 1,000 inhabitants | 248.9 | 249.0 | 0.0 |
| Days of stay | 14,719,289 | 13,703,925 | −6.9 |
| Average days of stay (per person) | 1.8 | 1.6 | −10.7 |
| Average days of stay (per stay) | 7.3 | 6.5 | −10.7 |

Notes: *Eleven months of reporting year; **Related to all hospitals and inhabitants (residents of Austria and foreign countries); ***Related to acute hospitals and inhabitants (Austrian residents); zero-day-stays are excluded.

Source: Statistik Austria (2014)

(mandatory) social security system. Therefore, in some sense, contracted physicians may be considered public physicians, and non-contracted physicians could be seen as private ones. There are two major differences between these two groups.

First, visiting a contracted physician usually does not involve an additional out-of-pocket payment for patients when using a service covered by public health insurance. Only some minor cost-sharing exists. Non-contracted physicians, on the other hand, are free to choose their fees. However, there are recommendations by the Chambers of Physicians regarding those fees. Patients visiting these physicians can submit their bill to their health insurance, from which they receive a refund of 80% of the regular fee of a contracted physician – hence, those patients have to incur an out-of-pocket payment of at least 20%. Furthermore, private health insurance covers those costs. For non-contracted physicians, Martin Gächter et al. (2012) estimate the cost-sharing percentage at 40 to 70% of the fee, depending on specialty, and indicate that this share might be much higher because only 50% of the patients of non-contracted physician submit their bills for reimbursement. Second, contracted physicians are not free in market entry, location decision and service provision. Market entry is strongly regulated by the public social insurance institutions through issuing contracts and a planning system to decide where which type of physician is necessary. The Austrian Structural Plan for Healthcare (see BMG, 2012) accounts for the geographical distribution of physicians based on the basic healthcare provision planning for the population and has to ensure accessibility to medical services for the population according to existing medical standards. Consequently, these regulations determine the location decision to a large extent. Oftentimes, a "new" contracted physician simply takes over the practice of a retiring predecessor. Non-contracted physicians are completely free in market access and location decision (hence, their concentration in agglomerations) and are less restricted in service provision.

# 3 Current issues
## 3.1 Lack of and distribution of physicians

One frequently discussed problem is the lack of and distribution of physician in the outpatient sector. For instance, in Tyrol there are 1,621 physicians with a private practice, 785 of whom are contracted (as of 2011). About 30% of them are general practitioners (see Gesundheit Österreich Forschungs- und Planungs GmbH, GÖ FP, 2013). This is about 2.25 outpatient-physicians per 1,000 inhabitants, and about 1.08 contracted physicians per 1,000 inhabitants. Overall, in Austria there are 17,310 physicians in outpatient care, or about two outpatient-physicians per 1,000 inhabitants (see Statistik Austria, 2014).

Given the free location choice of non-contracted physicians, a somewhat uneven distribution of physicians has emerged over time. In general, physicians tend to be located in agglomerations. In particular, physician density increases in state capitals, in district centres, in proximity to hospitals, and in proximity

to other physicians. Gächter et al. (2012) found that physicians predominantly like to be located where other physicians are; in other words, physicians attract other physicians because a high density of services available at a location is also attractive for potential patients, and cross-referrals, which often occur, are easily manageable for patients. This, of course, clearly hints at supplier-induced demand in the healthcare system in general. This geographically uneven distribution of physicians with the concentration of supply in agglomerations leads to a lack of healthcare provision in remote locations. As contracted physicians retire, it is frequently quite difficult or impossible to find a replacement. Non-contracted physicians do not have incentives to locate remotely. In Austria, remote locations are the secondary valleys of the large Alpine lateral valleys (the Rhine, Inn–Salzach–Enns, Mur–Mürz and Drau valleys), as well as regions that are difficult to access; that is, those lacking transport infrastructure and services (such as in border regions towards the former Iron Curtain and neighbouring eastern European countries). In such regions, there is out-migration of people and firms, except for the tourism sector. The only exceptions, where non-contracted physicians also choose to locate remotely, are regions with high tourism intensity, especially during winter. In that case, non-contracted physicians locate in or near ski resorts, specialising on treating any kind of skiing accidents. However, this does not contribute to the required healthcare provision for the resident population throughout the entire year.

### 3.2  Outpatient treatment in hospitals

Public hospitals generally have very large numbers of patients. About 8.2 million individual outpatients visited a hospital in 2013, yielding nearly 17.2 million individual visits (see BMG, 2014). In some cases, this large number of hospital visits reduces the demand for outpatient treatment by general practitioners as well as specialists. Of course, this creates both high costs (15.5% of inpatient costs in public hospitals in 2013; see BMG, 2014) for the system as well as long waiting times for the patients. On the other hand, the hospitals also serve as a replacement for non-existing contracted (or non-contracted) physicians in more remote locations (e.g., paediatrics in the district of Reutte). Hospitals are generally accessible for patients twenty-four hours a day, seven days a week. Although necessary, this also creates incentives for patients to go to a hospital, even though it might be totally unnecessary. This also contributes to the rather high costs for hospitals. From a hospital's point of view, treating outpatients is financially unattractive because it yields low revenues compared to rather high costs.



**Figure 2:** Waiting times for elective surgeries (source: data from Czypionka et al., 2013; modified by Bernlochner, 2014).

### 3.3  Waiting times

"Waiting time" usually refers to the timespan between the decision to have surgery and the actual surgery itself. However, this is only the fourth phase of the timespan, which ranges from the occurrence of the first symptoms of a disease until the end of treatment. In Phase 1, some time passes between the occurrence of the first symptoms until visiting a general practitioner, Phase 2 is the time between the first visit to a general practitioner and further consulting a specialist. Phase 3 encompasses the time from consulting a specialist until the decision to have surgery (see Czypionka et al., 2007b).

The problem of waiting times is associated with waiting times for plannable (elective; i.e. non-acute) surgeries in public hospitals. The most frequently monitored surgeries include eye (cataract), hip (total hip replacement) and knee (knee replacement) surgeries. These three surgeries are among the top ten most frequently provided services in public hospitals in Austria (for further details, see http://www.kaz.bmg.gv.at). Figure 2 provides an overview of waiting times for the most important elective surgeries in Austria.

In general, waiting times for such surgeries vary between six weeks and more than a year across Austrian public hospitals. The distribution of waiting times is geographically quite uneven and depends on several factors. Among these are capacity restrictions in hospitals, local or regional differences in prevalence and physicians employed in hospitals frequently operating private practices (hence, there are times where they are not present at the hospital). For ophthalmology, for instance, a look at the Austrian List of Medical Doctors ("Österreichische Ärzteliste"), combined with web-based research on private practices reveals that an average of about two-thirds of all senior and chief ophthalmologists at public hospitals (*Oberärzte* and *Primarii*) are running private practices in addition to their hospital employment (see Gruber, 2013).

**Table 2:** Share of international inpatients by Austrian state.

|  | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|---|---|
| Austria | 1.6 | 1.7 | 1.7 | 1.6 | 1.6 | 1.7 | 1.7 |
| Burgenland (B) | 0.8 | 0.8 | 0.7 | 0.8 | 0.9 | 0.8 | 1.0 |
| Carinthia (C) | 1.4 | 1.5 | 1.3 | 1.3 | 1.4 | 1.3 | 1.3 |
| Lower Austria (L) | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 |
| Upper Austria (U) | 0.5 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | 0.6 |
| Salzburg (S) | 5.1 | 5.5 | 5.5 | 5.2 | 5.2 | 5.5 | 5.4 |
| Styria (St) | 0.7 | 0.8 | 0.8 | 0.7 | 0.8 | 0.8 | 0.8 |
| Tyrol (T) | 7.0 | 6.9 | 7.0 | 6.3 | 6.1 | 6.1 | 6.2 |
| Vorarlberg (V) | 2.9 | 3.1 | 3.1 | 3.0 | 3.2 | 2.9 | 3.0 |
| Vienna (Vi) | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 |

Source: Beratungsgesellschaft für angewandte Systemforschung mbH, BASYS & Institut für Management und Ökonomie im Gesundheitswesen, IMÖG (2010)

**Table 3:** National and international inpatient mobility by region, 2007.

| Location of hospital* / Residence of patients** | B | C | L | U | S | St | T | V | Vi | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| B | *57,407* | 122 | 9,599 | 305 | 74 | 6,493 | 100 | 17 | 10,213 | 84,330 |
| C | 67 | *159,351* | 190 | 415 | 692 | 2,782 | 5,648 | 63 | 1,027 | 170,235 |
| L | 5,859 | 520 | *361,382* | 18,718 | 706 | 1,791 | 767 | 106 | 83,803 | 473,652 |
| U | 105 | 323 | 5,922 | *345,536* | 12,069 | 1,053 | 1,752 | 104 | 2,028 | 458,892 |
| S | 74 | 610 | 218 | 3,311 | *142,660* | 969 | 3,806 | 126 | 677 | 152,451 |
| St | 3,807 | 5,290 | 2,360 | 4,177 | 4,387 | *293,418* | 757 | 100 | 1,988 | 316,284 |
| T | 41 | 656 | 172 | 326 | 1,324 | 273 | *215,448* | 774 | 232 | 219,246 |
| V | 26 | 82 | 81 | 123 | 166 | 162 | 3,429 | *95,768* | 202 | 100,039 |
| Vi | 2,003 | 1,028 | 16,893 | 1,862 | 965 | 1,885 | 822 | 188 | *431,902* | 457,548 |
| Abroad | 670 | 2,240 | 1,813 | 2,978 | 9,253 | 2,604 | 15,377 | 3,034 | 3,938 | 41,907 |
| Sum | 70,059 | 170,222 | 398,630 | 467,751 | 172,296 | 311,430 | 247,906 | 100,280 | 536,010 | 2,474,584 |

Notes: *, ** For explanation of abbreviations see Table 2.
Source: BASYS, IMÖG (2010)

Many efforts have been made to reduce the problem of waiting times, but so far they have hardly been successful. In fact, it is frequently claimed that patients with private insurance visiting prospective surgeons in private practices can reduce their waiting times (e.g., *Kurier,* 2014). One way to start tackling this problem is to introduce transparency for patients regarding waiting times. This transparency has to be guaranteed by law; however, this apparently does not mean that each hospital publishes waiting lists on the internet, for instance. Currently, there are easily accessible public waiting lists only for public hospitals in Upper and Lower Austria. For almost all the others, a prospective patient will have to call each hospital separately (e.g., *Der Standard,* 2014).

Apart from those inconveniences for patients, long waiting times for surgeries create substantial economic costs for society. They arise from long periods of pain or otherwise restricted health, leading to reduced performance at work or longer periods of sick leave for employees (see Stokes & Somerville, 2006; Czypionka, 2007a, 2007b; Gruber, 2013). A Canadian study has shown that avoiding excessively long waiting times had the potential to reduce costs by CAD 1.8 billion in 2006 (about EUR 1.2 billion in 2006; see Stokes & Somerville, 2006). Because these costs negatively affect society, political decision-makers in particular are responsible for implementing measures to reduce waiting times in order to reduce these economic costs.

## 3.4 International and national patient mobility

The mobility of patients is an increasingly important issue, especially since the EU directive regarding patient mobility within the EU came into effect (EU directive 2011/24 on patients' rights in cross-border healthcare). For Austria, this means a potential increase in the currently experienced share of international patients, especially for inpatient care. So far, only

about 1.7% of all patients in public hospitals are international patients (see Table 2). Thus, this does not cause significant capacity problems. The division of international patients among Austrian states does differ, however. This is mainly due to tourism and to various healthcare provision levels across the states.

The largest share of international inpatients is hosted by Tyrol (35%), which is predominantly due to patients from the Italian provinces of Trento and Bolzano, as well as to tourists, particularly during the winter season (see Table 3). Tyrol is the only region clearly exceeding the national average of international inpatients. Within Tyrol, the university hospital in Innsbruck has the largest share of international inpatients.

Although international patient mobility has so far not created capacity constraints, it creates financial problems for the hospitals hosting those patients. Financial settlement is a lengthy and bureaucratic process that lasts up to 1.5 years for an individual treatment.[1] Furthermore, international patient mobility increases inpatient final costs because higher infrastructure investments might become necessary over time. In addition to international patient mobility, national patient mobility also causes problems regarding financial settlement and the services covered by public health insurers. National patient mobility refers to patients (inpatients and outpatients) requiring treatment in an Austrian state different from that of their residence. There are similar procedures for financial settlement as for international patients; however, they are less time consuming. In addition, across the Austrian states the medical services covered by public health insurances might differ, as might also the costs for one and the same treatment. The problem of intra-national financial settlement is still not resolved because there is no common (i.e., national) settlement price for the services provided. For the inpatient sector, this is mainly a consequence of state-specific adaptations and/or bypassing the Austrian DRG-system (see, e.g., BASYS, IMÖG, 2010).

### 3.5  Restricted mobility of patients

Austrian patients usually prefer to be treated "at home" when they require inpatient services and have to stay in hospital for some time. "At home" means going to a hospital close to where they live and being reluctant to visit a hospital further away – even though a more distant hospital might be better suited to a patient's specific needs. Restricted patient mobility also refers to the problem of an ageing population. This means that older people, on average, tend to become less mobile, due to physical infirmity, but also because of mental and/or social reasons. Physical immobility arises from infirmities of older people on the one hand, and hospitals being located far away from where older patients live on the other. Mental immobility

is due to the fact that older people tend to be mentally strongly tied to the place or region where they live and so they do not want to leave. Social immobility arises if people do not have the opportunity to be mobile, due to financial reasons, a lack of assistance before or after hospital treatment, or a lack of sufficient transport infrastructure. These restrictions on patient mobility require a new approach for healthcare provision in the future. This will be of particular importance in Alpine regions, especially if further out-migration from remote areas is to be avoided. Simultaneously, restricted patient mobility because of these reasons hinders and complicates the increase in medical treatments in outpatient hospitals.

### 3.6  Outpatient hospitals

Over the last seven years, there has been a significant increase of healthcare provision in outpatient hospitals (e.g., more than two-thirds of all cataract surgeries in public hospitals; see BMG, 2014). This process started in 2007, when the Austrian DRG-system was adapted to provide monetary incentives for hospitals to do so, and disincentives for continuing the previously standard procedure. Monetary incentives are set up such that a hospital receives the costs for providing the treatment itself plus one daily allowance (even though a patient in an outpatient hospital does not stay overnight). As a consequence, the total costs of providing such treatments for public health insurance decreased and the length-of-stay could be reduced. As already indicated previously, treatments in outpatient hospitals require sufficiently mobile patients (that are able to go to the hospital and return home after the surgery), which might cause problems for elderly people or for people living alone.

## 4  Future challenges
### 4.1  Healthcare reform

The major challenge for the Austrian healthcare system, and in particular for politics, is to design and implement a real healthcare reform. Such reforms have been discussed over the decades, and have often been claimed to be reached, but in reality nothing substantial has changed so far. Any healthcare reform aims to keep an eye on cost increases while maintaining the high standards of healthcare provision for the people of Austria. Costs in the healthcare system are increasing faster than GDP (see, e.g., Statistik Austria, 2014) because of the growing population and increasing ageing, combined with increasing morbidity, increased medical progress and more expensive treatments. The political goal has been to at least tie cost increases in healthcare to long-run GDP growth. A second important point of a real healthcare reform in Austria would mean concentrating financing, decision-making and execution of decisions with a single authority. Currently, these three matters are split among different authorities. This

**Table 4:** Demographic change in Austria.

|  | 1990 | 2011 | 2030 | Change 2011–2030 (%) |
|---|---|---|---|---|
| Population (annual average) | 7,677,850 | 8,420,900 | 9,000,007 | 6.88 |
| Share 0–19 years in % | 24.2 | 20.4 | 19.1 | −6.37 |
| Share 20–64 years in % | 60.8 | 61.9 | 56.9 | −8.08 |
| Share 65+ in % | 14.9 | 17.7 | 24.0 | 35.60 |
| Life expectancy at birth, males | 72.2 | 78.1 | 82.2 | 5.25 |
| Life expectancy at birth, females | 78.9 | 83.4 | 86.7 | 3.96 |
| Life expectancy at age 65, males |  | 17.7 | 20,6 | 16.38 |
| Life expectancy at age 65, females |  | 21.0 | 23.6 | 12.38 |
| Single households, in 1,000 | 814 | 1,324 | 1,560 | 17.82 |
| Families, in 1,000 | 2,114 | 2,342 | 2,362 | 0.85 |
| Families with children, in 1,000 | 1,423 | 1,405 | 1,298 | −7.62 |

Source: Own calculations based on Internet 1.

is inefficient because different authorities (i.e., stakeholders) have different interests and follow different goals. Given the current Austrian federal structure, with the extensive power of Austrian state governments vis-à-vis the federal government, this goal seems politically unrealistic. However, by concentrating financing, decision-making and execution of decisions at the federal level, it seems quite likely that a significant leap in the efficiency of spending money in the Austrian healthcare system could be made – most likely without cutting service provision levels for people. Issue three for a real healthcare reform is to change the focus of the healthcare system. To date it has always been institution-oriented; that is, all of the institutions within healthcare play the central role, and the system is built around the institutions involved. It would be more useful – and also more (cost-)effective – to change this approach towards a patient-oriented and demand-oriented design and structure of the healthcare system. Most likely, by combining a centralisation of responsibilities and a patient- and demand-oriented design of the healthcare system, the goal of reducing cost would almost automatically be reached without restricting the services provided or the services covered by mandatory health insurance.

## 4.2 Brain drain, education and working conditions

Another important non-space-related challenge is brain drain. This problem is closely connected to the education and working conditions for physicians. Many students leave Austria after graduating from medical school. This is due to comparatively low incomes and long and dissatisfying working conditions during post-promotional education. At the same time, many foreign students, especially Germans, seek access to Austrian medical schools because there are no admission restrictions like a *numerus clausus*. This, in turn, causes capacity problems at medical schools. Austria has imposed restricted admission

using an entrance exam and reserved 75% of the availably capacity for Austrian citizens.

The working conditions for young physicians in (public) hospitals are the main reason for brain drain. Many hospitals, especially German ones, offer higher wages and better, shorter and more attractive specialist education. This leads to countermeasures by individual hospitals or federal states; for instance, through offering higher salaries or improved opportunities to connect family and professional life (see *Tiroler Tageszeitung,* 2014, for the most recent headline and discussion). In other words, it will be necessary to adapt the general conditions such that they are better able to meet young physicians' needs in order to avoid both brain drain and a lack of physicians with certain specialisations and in certain geographic areas.

## 4.3 Demographic change

For Austria, demographic change includes two major developments. Apart from general population growth, Austria faces increased ageing of its population and most likely also a further concentration of the population in agglomerations, and hence a gradual depopulation of peripheral regions.

As Table 4 shows, the population will grow by about 7% until 2030. However, the distribution of growth by age groups is very uneven. Whereas the population below sixty-five will shrink, the share of people over sixty-five is expected to rise by over one-third. This, of course, has major consequences for the healthcare system because the largest share of demand for healthcare services comes from the elderly. Furthermore, life expectancy is substantially increasing, which also creates a demand for healthcare services. Table 4 also shows that the number of single households is expected to increase substantially. Single households include not only young people, but also especially older people. Older singles also pose challenges
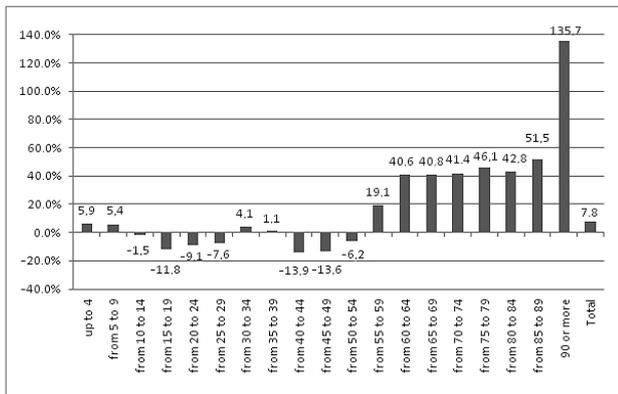
**Figure 3:** Population change 2010–2030 in % (source: Czasný et al., 2012).

to the healthcare system because these people often live in peripheral areas (and have to be sufficiently mobile to access healthcare services), or are not mobile enough and/or require assistance or nursing. Looking at the growth in the number of elderly people in greater detail, Ines Czasný et al. (2012) show that it is especially the very elderly segment that is experiencing the highest growth rate; this is also the group that creates the relatively highest costs for the healthcare system.

Hofmarcher (2013) supports the finding that the elderly have the highest per capita healthcare costs, and also includes the cost for care at home.

## 4.4   Lack of physicians

As of 2014, there are about 320 contracted general practitioners in Tyrol, 180 of them in remote regions. Within the next ten years, over 50% of them, about one hundred general practitioners, will be retired (see *Tiroler Tageszeitung,* 2014). Since 2013, fifteen retired contracted general practitioners could not be replaced by new, young ones; this rather small but current example very clearly hints at the problem of ensuring adequate healthcare provision in remote regions in the Alpine region. A more general view of the problem reveals that by 2030 about 75% of all currently existing physicians in outpatient care will be retired, with a retirement peak estimated to occur in 2025 (see Czasný et al., 2012). Apart from this, the demographic development indicates that there will be a) significant population growth until 2030, and b) significant ageing of the population in Austria (see Czasný et al., 2012). Population growth as such hints at an increasing demand for healthcare services even without taking ageing into account, and so there is a pure volume effect. Furthermore, the expected ageing of the population shows another component of increasing demand because the largest share of demand for healthcare services comes from the elderly. People over sixty have higher rates of many diseases in general, the prevalence of many diseases increases significantly with age and the highest costs for
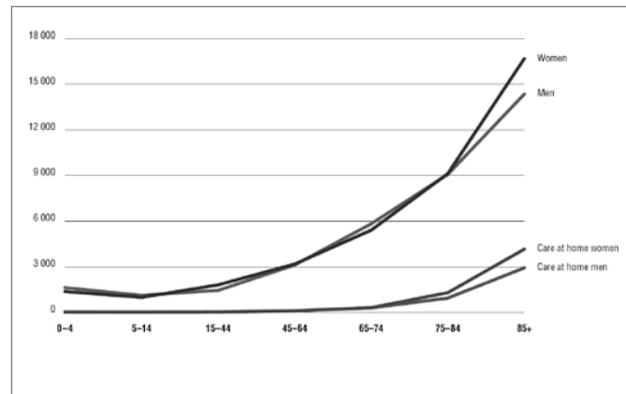


**Figure 4:** Healthcare expenditures in € per capita per adult, by sex and age bracket, 2007 (source: Hofmarcher, 2013).

Note: Expenditure for personal healthcare services according to the OECD SHA standards includes inpatient healthcare provision (including long-term care), outpatient clinic services, ambulatory care provision, homecare, auxiliary care, pharmaceuticals, and therapeutic and auxiliary aids.

the healthcare system for a single person occur within the last three years of an individual's life.

Combining all of these facts, it becomes very clear that the demand for healthcare services, and hence physicians, will be very large over the next twenty years, and will continue to remain quite high after that. Czasný et al. (2012) predict an increase in the need for physicians of 21% overall (general practitioners and specialists) by 2030. Furthermore, the education of young physicians complicates the problem of obtaining enough medical personnel, especially general practitioners with private practices. The problem occurs in the way general practitioners are educated during their residency. As Ernest Pichlbauer (2013) points out, internship becomes longer over time because training positions in "small" specialties are quite rare (such as ear, nose and throat) and hospitals have incentives to keep interns in the "large" specialties (e.g., surgery and internal medicine) where they require personnel. In Austria it is even possible to become a general practitioner without having experienced private practice during training (see Pichlbauer, 2013).

## 4.5   Relations between healthcare provision, geography and economics
### 4.5.1   Healthcare provision and planning

Using ophthalmology as an example, we illustrate the challenges to healthcare provision in Austria because of topographic conditions and how healthcare planning tries to address them. Figures 5 and 6 show the density and accessibility of healthcare provision in ophthalmology as of 2008. As can be seen, accessibility is good and healthcare provision density is high in agglomerations (along main lateral valleys) and is rather low
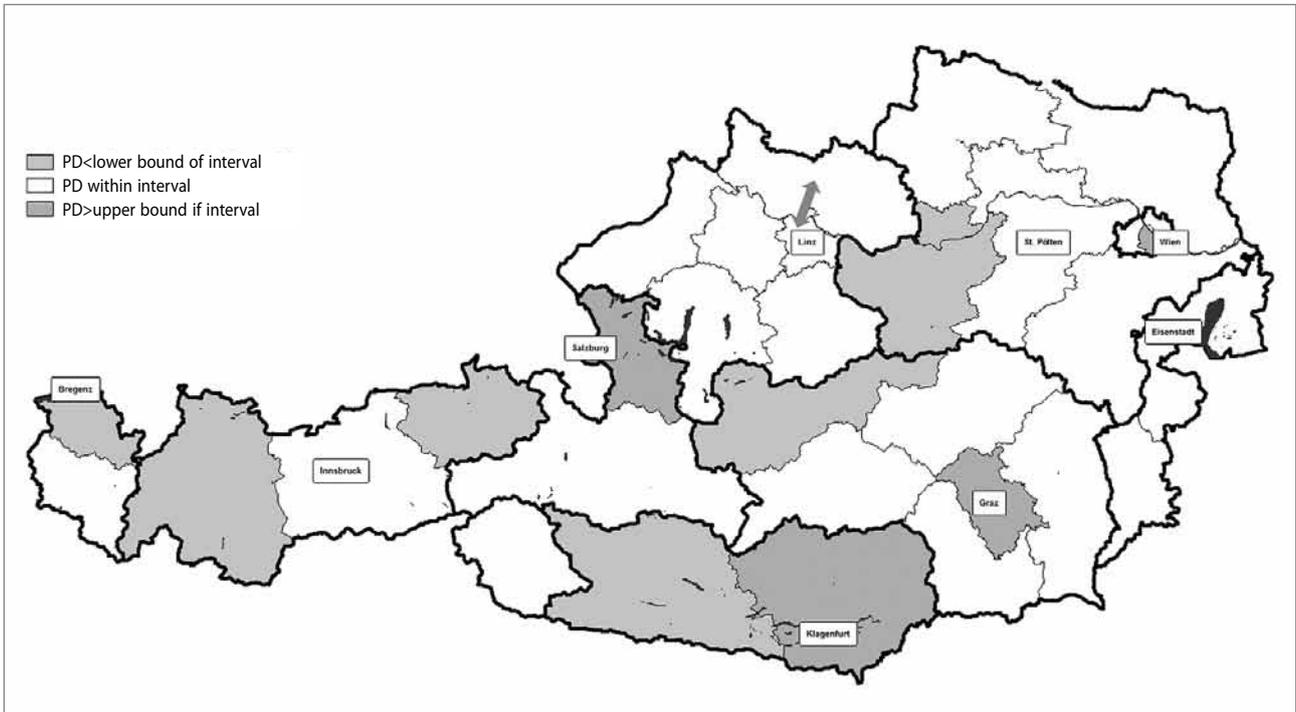
**Figure 5:** Healthcare provision density, ophthalmology, 2008 (per 100,000 inhabitants; source: Fülöp, 2010).

Note: Provision density (PD) in comparison with planning value-interval (± 30%).
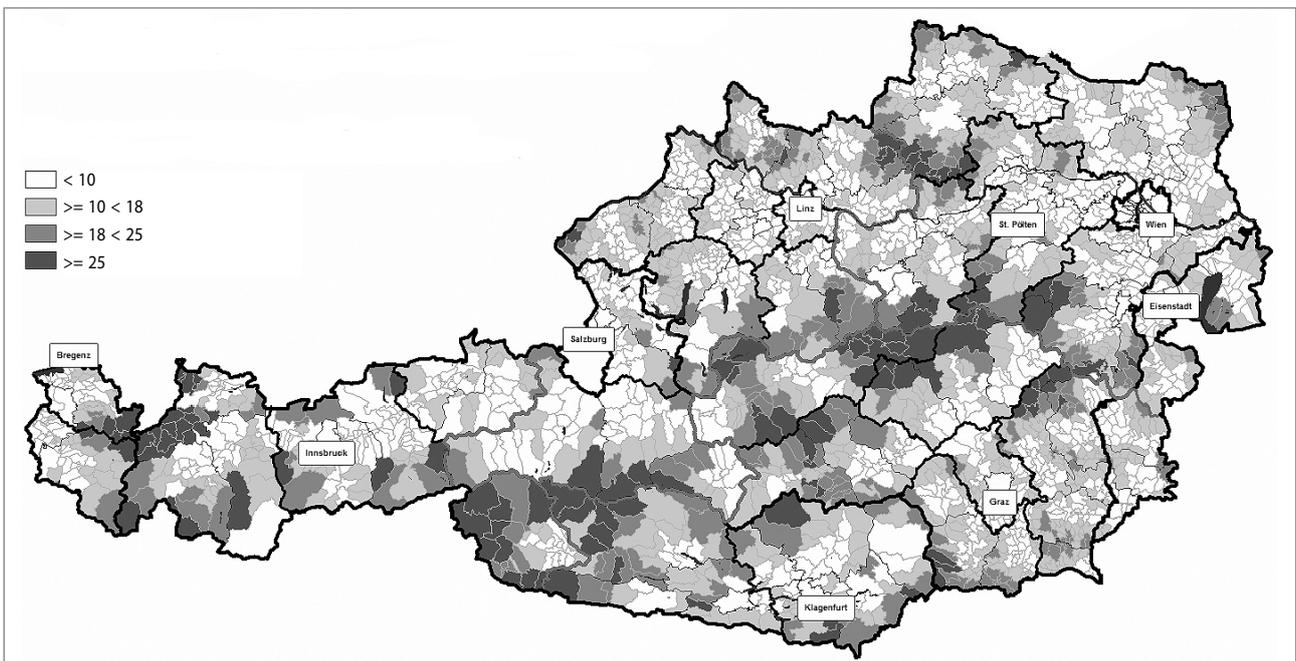


**Figure 6:** Accessibility, ophthalmology, outpatient care, 2008; Accessibility to nearest outpatient sector provider (source: Fülöp, 2010).

Note: Accessibility in minutes to the nearest outpatient provider.

in peripheral regions (in remote Alpine regions and along the former Iron Curtain). Depending on the specialty and based on planning criteria, an excess supply in central regions and insufficient supply in remote regions can sometimes be observed.

In the future, the agglomeration density will increase and fewer people are expected to be living in the periphery. As outlined previously, the Austrian Structural Plan for Healthcare tries to address these problems based on the combination of inpatient and outpatient facilities. However, maintaining healthcare provision in peripheral regions at a certain level for a decreasing population increases costs. Similar observations are true for the density of outpatient healthcare in general, as well as for mobile care (see BMG, 2012).

Rehab-hospitals

Old-age and
nursing homes

Pre-clinical emergency care,
patient transport

Acute hospitals

Semi-residential
institutions for the
elderly

Hospital's
outpatient clinics

**Interface Management PLUS:
geography, demography and
patient-orientation**

Mobile services

Ambulatories

Specialist
practicioners

General
practicioners

External therapists,
psychologists,
physiotherapists

**Figure 7:** New inclusive healthcare planning (source: own design, based on Fülöp, 2010).

### 4.5.2 Strengthening the economic periphery

The problem of a potential lack of physicians, in particular in peripheral regions, cannot be solely viewed as the result of too small a number of physicians, the long education process or the healthcare system as such. All of these issues contribute to the problem, but one should take a more integrated approach to addressing this problem. The important point will be to provide incentives so that a potential "country doctor" is willing to locate in the countryside. Such incentives can be of a monetary nature, as frequently demanded, but monetary incentives alone might not be sufficient or decisive. In fact, rural/remote regions require a strengthening of their economic base in general. If it is possible to establish more economic activities in remote regions and to curtail rural depopulation, more people will be willing to live in the countryside (not only the elderly that "have always lived there" or long-tern residents with property there). More people living in the countryside also create additional demand for goods and services, for craftsmen, leisure activities, schools, and so on, and also demand for medical services. Hence, the increased demand for medical services might generate incentives for physicians to locate rather remotely, and the increased economic activities there would also offer better living in the countryside. Thus, apart from better opportunities for earning money and more

diversified work (due to increased demand) for a potential country doctor, there are also more opportunities in terms of family life, leisure, school or infrastructure.

If policymakers succeed in making rural areas more attractive, this will also contribute to resolving the current healthcare provision problem. Less-mobile people, and also those currently living remotely, will benefit from this. We take this kind of reasoning a step further, in the sense of Paul Krugman and the (new) economic geographers (see, e.g., Krugman, 1991) and conclude the following: If more physicians locate in a particular (remote) place, other industries will also benefit. For instance, after seeing a physician, a patient goes shopping, has coffee or similar things. Hence, more physicians at a particular location might increase customer frequency for other businesses, which consequently also have incentives to locate at this place. Consequently, this will lead regional policymakers to improve the infrastructure, which will increase the accessibility of a peripheral location or region. Finally, the (remote) region can benefit macroeconomically because all of this together strengthens the economic potential of the region, creating more jobs and income within the region.

To summarise, measures that are frequently discussed in Austria – such as a change in the post-promotional education of

physicians, healthcare reform or the group practices of physicians – will certainly contribute to achieving the number of physicians required by 2030. However, one might legitimately doubt that such measures alone will be sufficient to sustainably improve healthcare provision in the periphery, in the countryside or in small secondary valleys in the Alps.

### 4.5.3 E-health and telemedicine

Connected to the previous issue of dealing with peripheral regions, another feature can be brought into play: e-health as a means to improve healthcare provision in remote regions. For instance, telemedical applications can be used to improve communication between physicians and patients in general, but particularly in remote areas, where physician density is lower. However, for e-health applications and telemedicine it is crucial that it be generally accepted by physicians and patients. Acceptance by patients can be fostered and successful if the technology is easily manageable. In general, telemedicine will be successful if it is integrated in existing (and well-known) processes and if the technology applied is really being used to serve a certain purpose.

## 5   Conclusion

As the analysis in this article shows, the Austrian healthcare system faces many different challenges and also strongly interdependent, current and future challenges. For many of these, spatial issues as well as the specifics of Austrian geography play important roles. As a consequence, we would like to suggest improving the well-known inclusive healthcare planning approach, which means an all-in-one planning approach for all parts of the healthcare provision system including interface management with three components: geography, demography and patient-orientation.

Figure 7 shows the various institutions providing healthcare services. However, planning, coordination and interface management between them are lacking. The Austrian Structural Plan for Healthcare (see BMG, 2012) predominantly focuses on the left-hand side of the figure, whereas the "rest" currently seems to be neglected. Hence, for Austria, this means the challenge(s) of really aiming at inclusive healthcare and integrated healthcare provision, refraining from a strong institution-oriented healthcare system and introducing a real patient-orientation into the system, while taking into account the special geographical features of both Alpine and remote rural areas and their socioeconomic consequences. This becomes even more important when considering everything related to care-giving and nursing. This has been neglected in this article due to its limited scope. In the long run, all of this will be necessary to be able to maintain the high standards, quality

and accessibility of the Austrian healthcare system, and to be able to adequately address future developments.

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## Notes

[1] Financial settlement for international inpatients (see BASYS, IMÖG, 2010): the hospital charges the regional healthcare fund, and this is passed on to the regional public health insurer, to the national public health insurer and to the foreign insurer. Distribution of foreign payments flows from the national health insurer, to the regional health insurer, to the regional healthcare fund and finally payment to the hospital. Hence, hospitals' organising institutions have to advance the costs for hospitals.

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# Common challenges of spatial planning, health and social policies: The case of Slovenia

This article discusses the overlap between spatial planning, health policy and social care policy, and the consistency among them with regard to health and general wellbeing. Lately, an obvious shift in topics towards social inclusiveness and quality of life can be observed in programming documents at the European level, which provide a base for national, regional and local policies. The topics most often addressed include improved accessibility to health services and general services, equal opportunities, and age-friendly cities and environments. Moreover, an increasing number of initiatives and best practices have been observed, resulting from actual needs and changing demographic and economic situation. This article presents the main Slovenian strategic documents for the three policies, and the options and possible processes for coordinating them. The common goals of the three polices are also discussed because they were the focus of activities in the SPHERA project of the Alpine Space Territorial Programme (ASP). In the conclusion, we refer to further options for cooperation in spatial planning, health policy and social policy in Slovenia based on findings originating from the national workshop and group interviews with actors and researchers from the three policy fields.

Keywords: harmonisation of policies, strategic documents, spatial planning, public health

## 1   Introduction

Social inclusion, better quality of life, age-friendly cities and environments, equal accessibility to services, innovative solutions for health, and inclusive and green neighbourhoods have become (or are) among the priorities of the main programming documents at the EU and national levels. For example, "Europe 2020 – a strategy for smart, sustainable and inclusive growth" (see Commission of the European Communities, 2012) begins with the challenges Europe is facing: globalisation, pressure on resources and ageing. Accelerating demographic aging is recognised as a structural weakness that additionally strains the welfare system, together with lower growth rates and lower employment rates. To guide European development until 2020, among the three priorities addressed, "inclusive growth" aims for economic, social and territorial cohesion, requiring improvement of education, training and social policies, highlighting the importance of childcare and caring for dependents, combatting poverty and social exclusion, and promoting a healthy and active aging population to allow social cohesion and higher productivity. The strategy proposes that member states promote new forms of work-life balance, active aging policies and other mechanisms.

Furthermore, a green paper called "Confronting demographic change: A new solidarity between the generations" (see Commission of the European Communities, 2005) focuses on issues related to demographic change such as economic aspects regarding working age, population decrease, continuing increases in longevity and continuing low birth rates. The green paper advocates adaptation to these trends in all member states through the regional authorities or social partners promoting "active aging", preserving a balance between retired and working people, achieving a better work-life balance, developing childcare structures and technologies for supporting the elderly, and supporting research on diseases affecting the very elderly and their impact on healthcare systems. To narrow the focus from the European level to the Alpine area and Slovenia, the territorially specific umbrella policy for the Alpine regions (the Alpine Convention) requires common guidelines and policies, and also monitoring of demographic change in order to provide protection and sustainable development for the region and to secure the economic and cultural interests of its residents based on joint cooperation (Permanent Secretariat of the Alpine Convention, 2011).
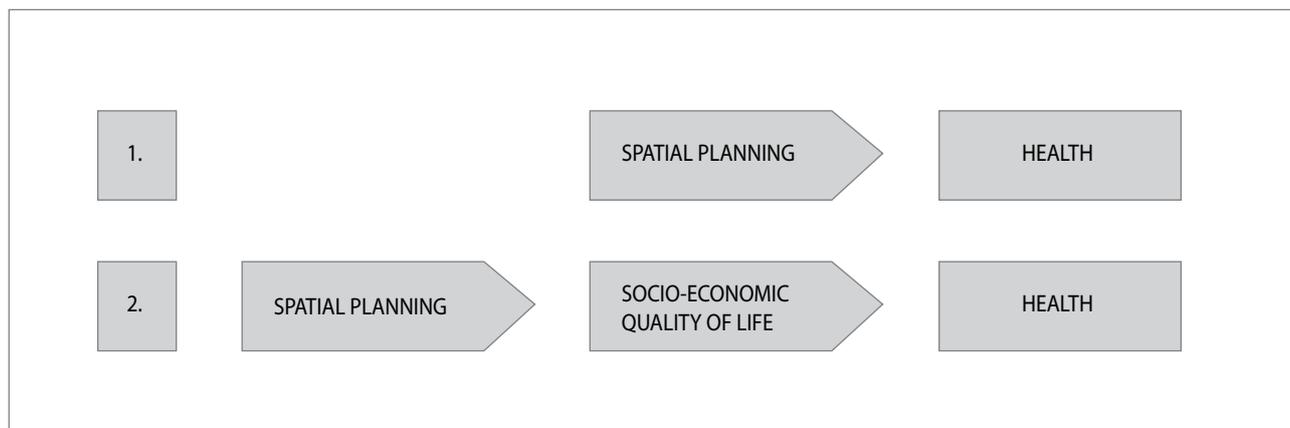
**Figure1:** Direct and indirect effects of spatial planning on health (source: Zec et al., 2013).

For implementing the cohesion policy, the partnership agreement (PA) between the European Commission and Slovenia for 2014 to 2020 is a strategic document and basis for obtaining EU funding. It clearly and transparently justifies the chosen strategic priorities for the country, and it promotes cooperation and coordination between various stakeholders and commitments involving both the European Commission and stakeholders. The PA defines the available funding per country as a whole and for the cohesion regions (i.e. Eastern Slovenia and Western Slovenia) and their targeted distribution in order to reach the eleven thematic objectives consistent with the Europe 2020 strategy and the requirements of specific funds (e.g., the European Regional Development Fund, the European Social Fund and the Cohesion Fund). This document also has to be in accordance with operational programmes (OP), which further define the content and guidelines in order to reach specific objectives. Three OPs are foreseen for Slovenia for the period from 2014 to 2020: one common OP for implementing the European cohesion policy, one for rural development program, and an OP for applying the European Maritime and Fisheries Fund in Slovenia. During this period Slovenia will participate in thirteen European territorial cooperation programmes: four cross-border programmes, five transnational programmes, and four intraregional cooperation programmes (see Government of the Republic of Slovenia & European Commission, 2014). Some of the programmes for the new financial plan for 2014 to 2020 are still being adopted; however, the priorities have been already outlined. Compared to the previous programme, the new Alpine Space Programme (ASP) lacks a strong focus on demography, and the priority axes are defined rather comprehensively; for example, the priority axis "Innovative Alpine area" focuses on increasing capacities for delivering services of general interest in a changing society (see Joint Technical Secretariat, ETC – Alpine Space Programme, 2014), and the Mediterranean programme promotes innovation capacities to develop smart and sustainable growth (Ministry of the Environment and Spatial Planning, 2014).

The comprehensive priority area or "axis" of inclusive growth, which also includes spatial planning and health systems, among other things, has been the focus of SPHERA, a capitalising project in the last financing period of the ASP (2007–2013) that has evaluated the results of previous related projects. As part of the project activities, it has provided an overview of specific trends, challenges and needs regarding spatial planning and health and has identified key areas for enhancing territorial governance in inclusive growth in order to provide guidance for the next generation of ASP projects. As part of the overview, all key policy documents in the partner countries and at the EU level that tackle issues common to spatial planning and health were assessed (note: in Slovenia, social policy was also considered for review as a policy dealing with the elderly, young people, demographic changes, employment migration, etc.). The core issue of the research is shown in Figure 1, presenting two relations between spatial planning and health: spatial planning can affect health directly, or it can have an impact on socioeconomic factors influencing the quality of life and thus, indirectly, health.

Regarding the relation between spatial planning and health, Scott Campbell (1996) discusses the three fundamental aims of planning: environmental protection, economic development and social equity. These can be seen as three corners of the "planner's triangle", and sustainable development is its centre. To reach this goal, it is necessary to address economic and environmental injustice by integrating social and environmental thinking. In the case of Slovenia, Janez Vuk (2014) argues for the role of spatial, regional and especially urban planning, which includes spatial, demographic and economic components. It is important that good planning be based not only on spatial potential and constraints but most importantly also on the needs of population. According to Jenny Crawford et al. (2010), including health and social topics in strategic spatial planning can contribute to reducing inequalities between social groups (especially vulnerable ones, such as children and

the elderly), support an increase in physical and recreational activities (by decreasing the need for car use), contribute to improving health by reducing air and water pollution and, last but not least, contribute to a changed social environment by improving safety and allowing communication and community cohesion.

As part of the SPHERA project, health inequalities are considered directly related to distribution of health services and facilities in the territory and their accessibility to all. In the diverse Alpine area, different regions show different approaches to health and spatial planning policies, starting with the type of government and the role of the public sector (Zec et al., 2013). In Slovenia, strategic priorities in spatial planning include improving the quality of life for all citizens, which includes a network of supporting economic activities and services. Spatial planning considers the social, economic and environmental factors of development, including social integration and quality of the living environment, with particular attention to social integration and solidarity.

## 2 Strategic policy documents for spatial planning, health and social policy in Slovenia

This article reviews the policy and institutional reference frameworks in Slovenia for each of the three policies and identifies the most relevant priorities for health, social and spatial planning needs and challenges, especially regarding the issues they share or should address together. A constant issue in discussions among spatial planning professionals and policymakers is whether spatial planning in Slovenia has or should have a supra-sector role or whether it is merely one of several sectors. There are clear inconsistencies between the objectives of spatial planning legislation, which is understood as umbrella legislation, and how it is implemented (e.g., the responsibilities and role of specific sectors in spatial planning and in general, which more or less successfully claim jurisdiction over specific issues or parts of the territory). On the other hand, health policies and strategic documents do not address the spatial dimension of providing healthcare and of health in general. However, lately the need for integrating the "health concern" in every policy or sector has been expressed (including in the scope of national seminars, workshops and group interviews). Health has become a very complex topic, covering not only the direct provision of medical care and services, but also indirect provision, such as disease prevention, a comprehensive approach to patients and ensuring environmental quality and quality of life in general.

### 2.1 Spatial planning

The Spatial Planning Act (Sln. *Zakon o prostorskem načrtovanju*, Ur. l. RS, no. 33/2007) is an umbrella act with the main objective of "permitting coherent spatial development through the consideration and harmonisation of various development needs and interests with public benefits in environmental protection, nature and cultural heritage conservation, natural resources protection, defence and protection against natural and other disasters". Interventions and spatial arrangements must be planned in order to allow sustainable development, quality living conditions, spatially coordinated and mutually complementary location of activities and renewal of existing infrastructure, preferably to new construction. Furthermore, they should "provide services for the health of the population" and "free access to buildings and their use to persons with disabilities in compliance with legislation". The act also includes a "principle of overriding public interest" that requires weighing public and private interests in accordance with spatial planning objectives: private interests should not affect the public interest. When defining spatial implementation conditions, the act also defines the mandatory content, which includes "conditions for health protection".

The basic strategic spatial development document and an integrated planning document that implements the concept of sustainable spatial development document is the "Spatial development strategy of Slovenia" (SDSS) adopted in 2004 (see Ministry of the Environment, Spatial Planning and Energy, 2004). In order to adapt the document to new challenges and situations (e.g., climate change, demographic ageing, energy efficiency, etc.), an update is foreseen. The SDSS provides a framework for spatial development across the entire country, it provides a concept of spatial planning, management, land use and spatial protection, and it considers social, economic and environmental factors of spatial development. Its basic premises and objectives include the following:

- Economical and effective spatial development (spatially balanced and economically efficient, including social integration and the quality of the living environment);
- High-quality development and attractiveness of cities, towns and other settlements (including safe, socially equitable, vital, healthy and well-managed towns and other settlements, and ensuring appropriate and economical provision of infrastructure, services and access to public services); and
- Harmonious development of areas with common spatial development characteristics (considering similar or common development opportunities and/or problems; e.g., mountainous, rural or border areas).

However, none of the objectives focus solely on social or health issues. The issues are closer to the goal of providing adequate quality of life, which includes a network of support economic activities and services. Consideration of demographic changes is indirect via policies relating to problematic settlement areas (demographically endangered areas) such as mountains, for which a strategy should be prepared to provide adequate infrastructure.

In addition to SDSS covering the country, the key document for the rural areas is the "National strategy plan for rural development 2007–2013" (see Ministry of Agriculture, Forestry and Food, 2007), which aims to ensure synergies between enhancing the competitiveness of the agriculture, food and forestry industry, environmental protection and conservation of the landscape, improvement of the quality of life in rural areas and promotion of diversification into non-agricultural activities (see "Regulation on the nature, extent and conditions for the provision of supplementary activities on farms," Sln. *Uredba o vrstah, obsegu in pogojih za opravljanje dopolnilnih dejavnosti na kmetiji,* Ur. l. RS, no. 12/2014), which include a variety of activities, but currently no activities associated with social care; for example, care for the elderly (e.g., providing and distribution of meals, and providing transportation) or for children (day-care or part-time care) are not included.

A more specific document in spatial planning that directly addresses health issues is the "National guidelines to improve built environment, information and communications accessibility for people with disabilities" [sic] (see Government of the Republic of Slovenia, 2005), which states, among other things, the aim to combat exclusion of the disabled in various areas (e.g., access to all public areas and buildings for all residents and information and communication for people with sensory impairments).

## 2.2  Health and social care

Due to the ageing population and a higher share of people with chronic illness, the need for various medical services is rising. Therefore, the plan (i.e., the "National health care plan 2008–2013") is oriented toward the treatment of more patients in their home environments. One of the priorities of the plan is therefore to introduce telemedicine, telecare, telepharmacy and other information technologies and thus improve the quality, safety and scope of healthcare services. It also states that it is necessary to organise various services at the primary level that are accessible and meet the need for comprehensive medical treatment or integrated comprehensive treatment. To achieve this, the plan defines measures for the division of labour among the primary, secondary and tertiary levels by encouraging the transfer of best practices at all levels and ensuring the develop-

ment of healthcare in demographically threatened areas. The plan therefore defines the structure of the funding system, a network of health centres at the primary level, access to healthcare in demographically threatened areas and the distribution of specialist providers of clinical and hospital services. One of the priorities is also communication with the public and informing patients in a friendly and understandable manner, which would help build confidence in the healthcare system for all population groups, especially for vulnerable groups.

The document "Health care system upgrade by 2020" [sic] (see Ministry of Health, 2011) has the main strategic goal of establishing a flexible healthcare system that will effectively meet people's needs by offering them quality and safe healthcare services. Two of the fundamental principles of the healthcare system upgrade are ensuring geographical accessibility of healthcare services by decentralising and strengthening regionalisation, and ensuring qualitative accessibility by providing safe and quality healthcare services.

Another document relevant for health and social care is the "Resolution on national development projects, 2007–2023" (see Government of the Republic of Slovenia, 2006). The resolution is based on Slovenia's development strategy (SDS) and includes the key (major) development and investment projects supported by the state, among them:

- A relevant project that supports meeting the goals of the third SDS (i.e., an efficient and more cost-effective country) titled "Modernisation of the healthcare system: E-health". This project's goal is to use communication and information means to provide more effective public healthcare services.
- Relevant activities supporting the fulfilment of the goals of the fourth SDS priority (i.e., a modern welfare state and higher level of employment): modernisation of social security systems, and reducing social exclusion and disadvantage.

Introducing and using new technologies in health is addressed by the document "E-health 2010: The strategy for implementing information technology in the Slovenian healthcare system" (see Ministry of Health, 2010). Remote home care is one of the central goals laid down in this strategic national document. The document follows the EU policies outlined in the action plan "Making healthcare better for European citizens: An action plan for a European e-health area". One of the basic policies laid down in this EU document is that all European healthcare organisations should provide online services, including remote healthcare services. The strategic plan takes into account professional and business challenges of modern European health systems, such as the rising demand for healthcare services due to demographic changes, increasing

expectations of patients, managing huge amounts of health information, the need to provide the best healthcare services under limited budget (public) conditions and so on.

The objectives of the "Resolution on the national social protection programme 2013–2020" (NSPP; Sln. *Resolucija o nacionalnem programu socialnega varstva za obdobje 2013–2020*, Ur. l. RS, no. 39/2013) are set to respond to the increasing social and demographic distress. The key objectives set for developing the social security system for the period from 2013 to 2020 are:

- To reduce the risk of poverty and increase social inclusion of vulnerable and disadvantaged groups;
- To improve the availability and diversity of services and programmes, and ensure their accessibility; and
- To improve the quality of services, programmes and other forms of assistance by increasing the efficiency of the management and leadership of the implementing organisations, increasing their autonomy and quality management, and providing for a greater impact of users and user representatives in planning and implementing services.

Among the strategies set to meet the second objective, the following (related to the SPHERA field of action) should be mentioned:

- To ensure the availability and affordability of services and programmes to users regardless of their social status and place of residence;
- To ensure regional availability and accessibility of services and programmes;
- To provide physical and communication access to services and programmes for all groups of users;
- To promote the development and use of modern information and communication and other assistive technologies to support delivery of services and social protection programmes (including distance services); and
- To improve information and awareness of the potential users of the possibilities for inclusion in programmes and services.

Until recently, the "Strategy of care for the elderly until 2010 – Solidarity, good intergenerational relations and quality ageing of the population" (see Ministry of Labour, Family, Social Affairs and Equal Opportunities, 2010) was the main strategic document on care for the elderly in Slovenia. This strategy was Slovenia's response to population ageing and European requirements to provide new solidarity among generations. The main purpose of the strategy is to coordinate and connect the work of the responsible government ministries with that of business and the public third sector in order to increase solidarity and the quality of mutual coexistence among the elderly, the middle-aged and the young. It also aims to provide

quality ageing and care of the rapidly growing percentage of the elderly generation. Objective and strategic options for eleven different areas are stated, followed by guidelines for designing and implementing programmes for quality ageing and good intergenerational relations, and it gives guidelines for strategy implementation. The objectives include ensuring steady access to quality health and social services. A new "Strategy for high quality ageing, solidarity and intergenerational coexistence in Slovenia 2011–2015" is (still) being prepared. The four priorities specified within the current working version are:

- Education for intergenerational coexistence, solidarity, cooperation and a positive attitude towards ageing;
- Preparation for ageing and retirement;
- Active ageing and social inclusion of the elderly; and
- Establishing a modern long-term care system.

# 3 Common challenges of spatial health and social policy

As part of the SPHERA project, national seminars in partner countries were held that focused diverse issues considering spatial planning and health as matters of national importance. In Slovenia a seminar and workshop entitled "Spatial processes and development: Common challenges for spatial planning, social and health policies" focused on legislative issues associated with currently ongoing renewal of key strategic documents in all three policy fields and especially in spatial planning, which is partly aligned with the European Union's new financial plan for 2014 to 2020. This process offers opportunities for a constructive discussion, enhanced stakeholder involvement and cross-sector coordination in policy-development process. The need for improved harmonisation of the three policy fields and proposals for improving cooperation were expressed during the seminar and workshop, and especially during the group interviews carried out before the seminar and workshop.

These events suggested that spatial planning and social policies should address the following issues together (Marot et al., 2014):

- Ageing of the population and the related issues concerning housing and green areas (adaptation to the needs of elderly, staying at home longer vs. institutional care and enabling intergenerational social contacts);
- Rural areas: providing services in terms of equal accessibility and quality of services (taking into account settlement density and support for areas with structural problems);
- Accessibility (rural/urban) and mobility (cars vs. public transport);
- The real estate market: introducing efficient instruments;
- Youth, the problem of education and the broader net-

**Table 1:** Topics/problems mentioned by representatives/actors of specific policy field and that should be addressed by their own and the other two policy fields.

| | Spatial planning | Health care | Social care |
|---|---|---|---|
| Spatial planning representatives | • The demand for and supply of jobs is imbalanced; people must commute<br><br>• The real estate market should be more flexible<br><br>• Suburban areas are divided among multiple municipalities that share responsibilities (there is no comprehensive management)<br><br>• Cross-border provison of services could often improve availability and accessibility of services; however, the legislation on this issue is lacking<br><br>• There is no regional approach in planning (services; demand/supply)<br><br>• City centres should be closed to traffic<br><br>• People should be motivated to walk or cycle<br><br>• There is no proper cycling network | • The spatial distribution and network for providing health services should be optimised<br><br>• There is a loss of services, resulting in health deprivation<br><br>• There are degraded areas (urban and rural)<br><br>• Municipalities are in charge of the primary network (there are no general standards for equal provision) | • There are demographic changes<br><br>• There is depopulation of the countryside and out-migration<br><br>• Services are being lost, resulting in social deprivation<br><br>• Immigration is not controlled and balanced<br><br>• Educated youth are out-migrating<br><br>• There is an imbalance in municipalities regarding provision of homes for elderly and preschools<br><br>• There is no regional level as an intermediate |
| Healthcare representatives | • Neighbourhoods must be planned to support outdoor activities (of children)<br><br>• Cycling paths are needed to support sustainable mobility<br><br>• The settlement network is dispersed, hindering infrastructure availability<br><br>• Developers (suburban housing) maximise profit at the expense of public open areas<br><br>• Demographic changes not considered properly by spatial planners<br><br>• Out-migration of young people increases aging in the countryside<br><br>• There is no strategic guideline for healthy urbanism (green areas, local food provision, design for all) | • The hospital network is inefficient (should all hospitals provide all services, or should they specialise?)<br><br>• The locations of hospitals are not suitable (they could be optimised considering changed travel times and accessibility)<br><br>• Not enough doctors are willing to work in remote areas; there are long waiting periods<br><br>• Accessibility should not be the only criterion for efficient provision<br><br>• Specialist clinics should be centralised | |
| Social care representatives | • Daily commuting affects the quality of life<br><br>• There are demographic changes<br><br>• Planning supports segregation instead of enabling provision for deprived groups<br><br>• A health-impact assessment is needed (for infrastructure of national importance)<br><br>• Values (or interests) behind decision-making are not clear<br><br>• It is necessary to preserve the landscape and rural settlements<br><br>• Construction is over-regulated in protected areas | | • Introduction of innovative solutions for the care of the elderly is too slow<br><br>• 4,300 new jobs in long-term care is set as a goal in the national programme; however, substantial inter-sectoral coordination will be needed to implement this goal<br><br>• There is ongoing social segregation (public housing vs. luxury homes) |

Source: Adapted from Marot et al. (2014).

work of schools, support for employment and work opportunities (e.g., coordination of opening time for preschools and working time for the parents; working from home);
- Guaranteeing the multi-functionality of (public) buildings; and
- Distinguishing differences between and within the age groups (the elderly are not a homogenous group).

Topics that spatial planning and health policies should address together:
- Environmental impacts / a healthy environment;
- Locating development (coordinated between municipalities);
- The problem of environmental impact assessments (a health impact assessment is suggested);
- The role of green areas and natural areas for health and general quality of life (quality, accessibility for all);
- Adaptation to climate change.

Health was recognised by most participants as the main cross-cutting topic. An umbrella policy that defines goals, priorities and clearer guidelines and takes into account the specifics of individual areas is therefore needed. Common issues of spatial planning, health and social policies were also discussed in depth during the three group interviews held with the representatives of the three sectors. Table 1 summarises common issues that representatives of each sector themselves stressed and the other two policy fields.

## 4  Conclusion

The relation between health and social policy and spatial planning goes beyond physical or environmental factors. Life expectancy, occurrence of certain diseases and mental wellbeing vary not only between different parts of the world but also within each country or region. As noted by Jenny Crawford (2010), the boundaries between different fields or professions are shifting and shared initiatives are increasingly appearing. The activities carried out in the scope of the SPHERA national seminar in Slovenia were aimed at bringing together actors and stakeholders from three fields: spatial planning, health and social care. They mainly agreed that cooperation and harmonisation of policies is necessary to reach the goals set in specific fields that overlap with other sectors.

Their opinion is best illustrated by statements from those interviewed:

> Spatial development is meant to improve the quality of people's lives. Therefore their needs and lifestyle should be taken into account,

especially for older generations, which are less flexible in adapting to changes.

When we become aware that health is an elementary part of each planning activity, in almost every element of life, then we see what potentials we have.

Each change in a territory influences certain population groups, especially deprived ones who are dependent on social and health support, including the elderly, the poor, the ill and children. The impact is even more powerful because such groups are less adaptable. If you live in a degraded area and you are young and well off, you move somewhere else and are not affected, but not everybody can do that.

The situation should be improved by urban planners because now urbanism has been taken over by construction engineers.

The process of renewal and upgrading the strategic policy documents in all three policy fields that have overlapping goals is an opportunity for improved cooperation and harmonisation. In order to decrease conflicts between sectors and decide whose intentions will yield higher social value, national goals and priorities should first clearly be set at a strategic level and also in implementation. Upgrading the SDSS will bridge the gap between the local and national levels of spatial development and support urban centres in taking the leading role for surrounding functional areas. Because the current SDSS includes guidelines for the health and social sector in relation to the network of urban centres, which provide a certain level of public infrastructure, the upgrade should respond to changed demographic and economic conditions and thus allow efficient and highest-quality provision of services that are equally accessible to all. Recent issues include accessibility of healthcare at different levels, ageing in peripheral areas, which correlates with changed needs for service and medical care (for chronic diseases and geriatric conditions) and lack of workforce (e.g., family doctors and paediatricians), and the affordability of services for a decreasing number of people. Commuting is also an issue because it has implications for health, quality of life and the environment. The economical and efficient spatial distribution of services in a timely manner is important and could be supplemented with key sector activities, such as development of alternative solutions and provision of services and goods; for example, supplementary farm activities or improving preventive actions for improving health and wellbeing in order to decrease the incidence of chronic diseases.

The process of policy coordination and seeking the best solutions should be inherent to policy development in order to build a sense of ownership and responsibility for its implementation. On the other hand, there is a general agreement that

health represents an overall, cross-cutting topic. In this respect, health policy cannot be a single sector policy, but should find synergies with other policy fields where there is an overlap.

The proposals and ideas that stakeholders presented during the SPHERA national events for new instruments and ways of cross-sector cooperation were diverse, ranging from informal meetings to a new supra-sector governmental body, with several of them suggesting taking successful examples from other countries as an orientation. However, it is a key issue of policy development to find an economic and efficient way to adapt examples to specific local conditions.

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Roberto ZUFFADA

**The new Alpine Space Programme:
Cooperation on the road to 2020**

# An interview with Stefania Amorosi, project officer at the Joint Technical Secretariat of the Alpine Space Programme



**Figure 1:** Stefania Amorosi, project officer at the Alpine Space Joint Technical Secretariat (photo: Bernd Kaeferboeck Photography).

The Alpine Space Programme has recently entered a new phase of transnational cooperation, which will run until 2020. As a European Territorial Cooperation programme of the EU cohesion policy, the Alpine Space Programme has recently developed an overall strategy to support sustainable regional development in the Alpine region in the coming years. Contributing to the EU 2020 strategy for smart, sustainable and inclusive growth, the programme aims to provide stakeholders with a framework to develop, test, implement and coordinate ideas.

Stefania Amorosi, the SPHERA project officer, introduces us to the new programming period and its objectives, as well as the new elements characterising this cooperation programme.

**– Stefania, could you give us an overview of the 2014-2020 Alpine Space Programme?**

"As an EU transnational cooperation programme, the Alpine Space Programme aims to support sustainable development in the Alpine region in alignment with the principles set out by the EU 2020 strategy. This is done by combining three functions: 1) triggering and funding result-oriented projects contributing to programme objectives, 2) fostering discussions on cohesion policy and the future of the Alpine region and 3) acting as a catalyst for cooperation in the Alpine area that the programme operates in. The total programme budget is almost 140 million euros, of which 116.6 million is provided by the European Regional Development Fund (ERDF). Projects can be co-funded with up to 85% of ERDF funds and will be selected through a two-step application procedure, with a new call for proposals being opened approximately once a year. Although the cooperation programme is still being analysed by the European Commission, we already know that

projects will fall under four categories: 1) Innovative Alpine Space, focusing on Alpine innovation and services of general interest, 2) Low Carbon Alpine Space, which will consider sustainable mobility and a low-carbon economy, 3) Liveable Alpine Space, dealing with natural and cultural heritage and 4) Well-Governed Alpine Space, focusing on multilevel and transnational governance. The first call for project proposals is expected to open in early 2015."

**– What are the distinctive elements of the new programme compared to the previous programming period?**

"The 2014–2020 Alpine Space Programme has retained many similar features from its predecessor, but has also introduced a number of new elements. Thanks to the capitalisation projects launched in 2013, we've been given an overview of what needs to be improved over this period. This is why we'll focus more on generating greater impact and transferring results achieved by the projects so as to affect territorial development in the Alpine region in a holistic way. The transnational dimension of the projects will be reinforced as well as their ability to impact policy development. Another important element is, of course, the link to the EU Strategy for the Alpine Region (EUSALP), which is still being developed. Finally, after a long harmonisation process, the 2014–2020 period will be the first in which all European Territorial Cooperation programmes operate through a joint corporate identity and monitoring system, which is something we're all very excited about."

**– The process for developing the 2014–2020 programme has been complex and challenging. How has it been managed, which phases has it been articulated in and which stakeholders have been involved?**

"The new Alpine Space Programme builds on a process of strategy development that ran from mid-2011 to mid-2013. A report was created by a team of experts, providing recommendations and proposals for the programme regarding which direction should be taken by future projects. This report was subsequently discussed by stakeholders in a series of workshops and one online survey. The stakeholders involved in the process came from a variety of backgrounds and countries, thereby ensuring the presence of a wide variety of Alpine opinions. This process resulted in a set of guidelines and recommendations that are now available on our website [http://www.alpine-space.eu/SDPbrochure] and that served as a basis for discussion in developing the programme's objectives and priorities. The shaping of the new programme was steered by the partner states of the cooperation area: Austria, France, Germany, Italy, Lichtenstein, Slovenia and Switzerland. The draft cooperation programme was then opened to public consultation, allowing the relevant stakeholders to express their view on the programme intervention logic. This exchange has been very fruitful and could enrich the structure of the new Alpine Space Programme."

**– The Alpine Space Programme promotes regional sustainable development in the Alps. How do its objectives contribute to the EU strategy for the Alpine region?**

"The EU strategy for the Alpine region has highlighted three pillars of cooperation: sustainable growth and innovation, connectivity for all and ensuring sustainability. The Alpine Space Programme's new priorities, as mentioned earlier, are close to these pillars and are intended to work in accordance with them so as to achieve results of common interest. The programme's fourth priority, focusing on governance, will also contribute to EUSALP because they're directed at both improving governance and favouring transnational cooperation."

**– A new generation of projects will be launched in the coming months. What are the expectations of the Alpine Space Programme's governing bodies and who will be able to submit project proposals?**

"The new generation of Alpine Space projects should contribute to the programme's objectives of an innovative, low-carbon, liveable and well-governed Alpine area. Projects will have to demonstrate their ability to address the territorial assets and challenges with a transnational approach. We expect them to highlight how they'll contribute to policymaking. They may address different stages of the policy cycle and may therefore focus on the strategic policy development, or on testing new methodologies and tools, or on improving existing policies for the Alpine region. Projects must involve participants from at least four countries, of which three should be EU member states. Both public and private bodies will have the opportu-

nity to participate. The cooperation programme provides an indicative list of beneficiaries per priority, but any legal entity may participate if it's relevant for the cooperation area and the programme's objectives. We were all very happy to see the high level of interest and cooperative spirit at our launch conference on 21st and 22nd October in Salzburg. I believe that the first call for proposals will already attract interesting new projects and project partners."

**– I'm taking this opportunity to express my gratitude to you, Stefania, and the Alpine Space Joint Technical Secretariat Communication Team for the opportunity to hold this interview and for support in managing the SPHERA project.**

Interview conducted by Roberto Zuffada, 18 November 2014

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Naja MAROT

**Mojca Gobec, director general of the Public Health Directorate on the relation between health policy and spatial planning:**

# "What's the point of being able to get to your doctor in five minutes if you have to wait fifteen months for a check-up?"

This interview was carried out with Mojca Gobec, the director general of the Public Health Directorate at the Ministry of Health, which is in charge of preparing and implementing public health policies in Slovenia. Their policy is based on the principle of providing "health for everyone" and "health to all the policies".

– **Policy preparation requires cooperating with many stakeholders. Who do you cooperate with in your everyday work?**

"The directorate works closely together with various ministries, such as the Ministry of Agriculture, Forestry and Food, and the Ministry of the Environment and Spatial Planning. The first one is relevant because of food safety and providing conditions for a healthier diet, and the second is relevant for decisions about locating spatial developments. In addition, we also work together with a number of civil initiatives, which are pretty dispersed in Slovenia today and usually focus only on individual problems in a wide variety of areas. Furthermore, governmental negotiations also form an important part of the responsibilities of the Ministry of Health."

– **Spatial development and health are covered by separate policies in Slovenia. The Spatial Development Strategy of Slovenia (2004), which guides spatial development, includes health under social infrastructure. It defines the level of health services based on the function of the settlements within the spatial network. Then there's the Strategy for the Development of Public Health Services. Could you evaluate how well these two politics take each other into account?**

"First we need to separate the provision of public health, which is only one segment of health provision and covers health at the macro-level. The primary care network is covered by the

National Programme for Health Protection until 2013, which is already obsolete. Two aspects should be highlighted. The first aspect is locating the buildings for social infrastructure in the territory (primary services, emergency points and hospitals) considering principles of modern spatial planning such as physical accessibility and energy efficiency. However, there isn't so much new construction, so it's more accurate to talk about renewing existing buildings. The second aspect is broader and refers to whether all the policies are planned by considering their impact on people's health. This aspect is a lot more complex and it's also more demanding in the planning sense. For example, we've got an energy provision policy that should offer sustainable means of energy production; however, such development usually faces several barriers when it's located. Or the existing strategies even contradict each other, especially if we look at the vertical dimension of preparing and implementing the policy (from the EU to the local level)."

– **Slovenian territory is influenced by several processes like demographic changes, emptying of the countryside and suburbanisation. Do these spatial processes also influence health policy?**

"The connection is very close; for example, provision of communal infrastructure impacts access to drinking water. Planning neighbourhoods is connected to provision of recreation, sports and play facilities. Facilities like cycling paths should be provided to support sustainable mobility. In Slovenia the provision of some basic services is connected to the dispersed pattern of settlement or with a negotiation process with stakeholders, so that undesired development (for example, five houses instead of three in a certain location) is prevented. In Slovenia we used to have well-functioning social planning that followed key guidelines and it was also acted on according to them. Multidisciplinarity and coordination between sectors

were important, but now each of them is busy with implementing European directives and (too) many norms. The health sector can provide opinions about locating spatial developments; however, these are often only limited to measurable indicators like air quality, noise level and quality of drinking water. Stakeholders are also included into the planning process much too late, when the decision has usually already been made. We also have many strategies that aren't legally binding. It's also important to remember that an individual development might be positive for one part of the population, but negative for another part. The motorway is such a case: for some people, it offers economic development, new jobs and green industry, but, for others that live near it, it degrades the landscape and the quality of life."

**– The Faculty of Civil Engineering and Geodesy has prepared an analysis of the state of the art, development trends and guidelines for strategic spatial development that also incorporates the network of public institutions. Is the current hospital network too broad and ineffective?**

"If we only talk about locating new buildings, it's difficult to comment on whether all these hospitals provide the right services and if it makes sense for all of them to cover all services instead of being specialised. Even if one of them were closed, I doubt the quality of life would really improve. What should we do with the leftover infrastructure then? Transform it into a facility for the elderly or an intergenerational centre? Our hospitals need more specialisation; taking into account the motorway network and accessibility, this would probably be an advantage."

**– What about the network of primary health centres?**

"The fact that there are sixty-five primary health centres is a leftover from the previous administrative framework, which was based on the division of Slovenia into sixty-five municipalities. In each of them, the health centre was the exclusive form of health provision at the primary level. Nowadays, in addition to these health centres, we've also got a network of concessionaires to complement the public services. Of course, there are areas in Slovenia where accessibility should be improved, especially with regard to emergency response. Also, what's the point of being able to get to your doctor in five minutes if you have to wait fifteen months for a check-up? Therefore, in Slovenia local accessibility can't be the only criterion and we need to overcome the thinking that the health centre is just a building where you need a minimum time to get from one office to another. The health centre should also be a consultation office where services complement each other and treat the patient more holistically. Such an approach is a big challenge for providers. Blood samples can be collected and then even sent one hundred kilometres away to a lab for analysis, which

might even be better for the patient. The leap to holistic health centres that also offer preventive treatment at the level of the whole community; this is certainly still missing."

**– In a territorial sense, should services be condensed further in the larger urban areas or regional centres?**

"Currently, the services still aren't concentrated enough. In public health provision there's a noticeable slow but clear trend of concentration in large cities with bigger regional hospitals. This is something that everyone probably wishes for. Like I said, the primary health centres are not the only caretakers for primary health services, but they're complemented by a concession network. And for the concession network we don't want concentration. However, then the problem is that doctors don't want to take jobs in the periphery, which in the end isn't the fault of spatial planning but of conditions, perception and means of financing: what do you lose if you live in [remote locations like] Tolmin or Haloze in comparison to living in cities like Celje or Ljubljana, which, like I said, in the end isn't a matter of physical planning. Therefore, not only the infrastructure aspect should be assessed, but other aspects too, like public amenities – for example, green infrastructure or providing a barrier-free environment – which aren't the major domain of the hospitals and health centres."

**– A new concept has been introduced in urban planning: healthy urban planning targeted at providing a territory that also changes behavioural patterns by providing green areas. How successful do you think Slovenia is at providing soft measures like that for providing a healthy environment?**

"I think a lot has already been done in this area. For example, for providing food, the public procurements legislation has been changed, and it was a big obstacle before. Providing quality food is a big opportunity, especially for sustainable local provision and short supply chains. This doesn't necessarily mean only organic food; the fact that the food is locally produced already suffices. The problem could be on the supply side. When Slovenia entered the EU, people were happy to see glittering new shopping centres that offer food at very low prices that small-scale local providers can't compete with. On the demand side, we've got the problem that a school or a hospital needs a guaranteed 365-day-a-year quality food supply that local farmers can't provide. Cooperatives have somehow been lost in the process. An important further step is now the new strategy of the Ministry of Agriculture, Forestry and Food. As the Ministry of Health, we prepared the food supply policy back in 1996, which also integrated local sustainable provision and short supply chains as a priority, but our ideas weren't understood at that time. Now the times have changed and food self-sufficiency is more than ever part of national policy.

"In addition, there are two more aspects I want to mention: first, how we want to improve the territory. For example, in Slovenia – in Maribor – we've got urban gardens that are a result of a municipal initiative that spent eighty thousand euros to refurbish a degraded area for local people to produce food in live with agreed-upon rules. As reported, the most difficult part was respecting the basic rules and winning the respect of other users. When this was achieved, the urban garden community started living on its own. Such opportunities are really rising now, which is also important for people from the social aspect. The second aspect is spatial planning of future large infrastructure projects, like the construction of power lines, which can affect people's health, and so early and high-quality inclusion of the public in spatial planning processes is vital. If Slovenia decides to introduce renewable sources of energy like wind farms, it also has to take into account their impact on people's health; this means they need to be located at a safe distance from where people live.

"Before a strategy is adopted in Slovenia, one should consider whether there's any suitable land available for site-specific developments. Assessing the impact on people's health can also be useful for improving inter-sectoral cooperation in locating spatial developments. This is a new method in public health, and using well-grounded assessments of potential impacts of various policies on health makes it possible to adopt informed political decisions."

**– As can be seen in your answers, it isn't clear who should be responsible for delivering a healthy environment. Can civil society do more than the state? Who should play a more important role?**

"A healthy environment isn't something decided only by people, but is also governed by several European directives, and by taking them into account we can provide high-quality drinking water, surface water, groundwater and water for swimming, as well as good air quality. The state will need to pay a fine to the European Commission if the air quality in Ljubljana isn't good enough – although, theoretically, is this really always feasible? Environmental legislation is in place, defining the basic principles of environmental protection and also protecting human health, wellbeing and quality of life. But I agree, the division of responsibilities isn't always clear because these are areas where the responsibilities of the ministries of the environment and health overlap; for example, the directive on water in natural swimming areas (rivers and lakes) is now covered by the Ministry of the Environment and Spatial Planning, even though the initial idea was for the Ministry of Health to be in charge of this. Although some of the areas are very strictly regulated, others, like managing degraded or overly polluted areas, are regulated quite poorly or not at all."

**– You've already touched a bit on coordinating the sectors. There's a document from 2012 called "An Overarching Approach for People's Health and Wellbeing of and Diminishing Inequalities in Health" that talks especially about the need for coordinating health and other policies. In your opinion, what's the biggest obstacle preventing cooperation from being delivered better?**

"Our health is a sign of some structural elements in society. Poor and deprived people die sooner, are sicker, and are practically at the end of the list on all variables. Stereotypes like the ones about capable managers dying young because of heart attacks aren't true. The poor and unemployed are the sickest and don't have a light at the end of the tunnel. So, from the point of view of health policy, it's very important to maintain the social network and the level of equality because in the long term society can only benefit from that. Today, we mostly forget about that. And, of course, it's very important for us to tell this to the decision-makers because it's relevant for the policies concerning spatial integration, labour, and social and education policy. There are several problems: the tools for policy evaluation exist, but there's the problem of administrative capacity: at the Ministry of Health we can't perform this function in the long term or staff-wise because we're understaffed. Currently the directorate employs twenty people that cover twenty-five priorities together. Other countries have developed criteria and tools, and they educate administrators in evaluation. There are other ministries and their policies that act beneficially towards health; for example, the rural development policy or rules regarding road safety, which is reflected in statistics on injuries, deaths and so on. In the end, everything depends on the political will and priorities of a particular minister. If the priority is for people to be healthier, so they can work longer and benefit society, than we need relevant measures for that and then we also need to provide the monitoring. So far in Slovenia, we haven't arrived at that point yet. The third element I'm missing is public discourse. In our media space, we're bombarded with banal matters, but we don't really talk about the important ones. Such topics also include administrators' general knowledge. It's not that they're ignorant, but they don't have many opportunities for training because this knowledge isn't part of the university curriculum. Then during the dialog we realise that the only thing we need is a little more understanding and to look at things from a different perspective."

**– The Spatial Development Strategy of Slovenia is being revised. What do you recommend integrating into the document?**

"The spatial planning strategy should integrate the goals of health, wellbeing and quality of life. Enough safe green areas that allow physical activity and social inclusion should be

provided. Greater emphasis should be placed on vulnerable groups. People that are generally well off will take care of themselves; they'll drive to access services, go to the gym and do sports. We need to help people who are socially disadvantaged; they have to be actively included and provided with spatial arrangements that encourage healthy lifestyles in their local environments. I'd say there's not enough thinking along these lines. Today quality of life is only reserved for people who are better off and so their neighbourhoods need to be planned with the highest quality in mind."

**– To conclude, how do you usually look after your own health?**

"Personally, I try to live a balanced life, which should be the result of regular sports activities, a balanced diet and a balanced work and family life."

**– On behalf of the Slovenian SPHERA team and personally, I'd like to express thanks to you as an observer in the SPHERA project, for your engagement in the SPHERA project through this interview and for your participation in the SPHERA national seminar.**

This text is based on a group interview conducted by Naja Marot, 29 May 2014.

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Caroline PERRIN

**Switzerland in the Alpine Space Programme, 2014–2020**

# Interview with Sébastien Rieben, Swiss Alpine Space contact point and employee of ARE, the Swiss Federal Office for Spatial Development

The Alpine Space Programme is one of the two Interreg B programmes that Switzerland is participating in. The aim of the Alpine Space Programme is to strengthen transnational cooperation in the Alpine region. Alpine Space Programme project partners can benefit from exchanging knowledge and experience in a large network, building partnerships and developing approaches to solutions for their own region and area of activity. Sébastien Rieben, the Swiss Alpine Space contact point, speaks about the Swiss participation in this programme.

**– What is the role of ARE, the Swiss Federal Office for Spatial Development, within the Alpine Space Programme?**

"At programme level, the Federal Office for Spatial Development (ARE) represents Switzerland in the Programme Committee. At the national level, the ARE acts as a contact point for project partners and with all stakeholders, offering advice, communicating programme news and negotiating national co-funding."

**– How is participating in the Alpine Space Programme significant for Switzerland?**

"Switzerland is very active in European territorial cooperation, participating in no fewer than ten different cooperation programmes. Participating in the Alpine Space Programme is very important for Switzerland because it makes it possible to deal with Alpine issues such as transit or climate change with other relevant stakeholders. The economic dimension is also crucial for Switzerland because the programme allows our clusters and SMEs to cooperate with actors in other highly innovative European regions."

**– It's a long way from the first idea until the official start of the project. What pitfalls have you seen and what you can recommend to other applicants?**



**Figure 1:** Sébastien Rieben

"It may sounds obvious, but the applicants must read the terms of reference carefully and be sure to understand what the programme committee expects from them. All applicants should also ask themselves whether their project is truly transnational, or whether it instead consists of a collection of local projects that could be supported by national or regional funding instruments. It's also important to understand what the Alpine Space Programme is not. For instance, the programme isn't a research programme, even if research is of course part of most projects. Finally, there are contact points in all partner countries who'd be happy to answer the applicants' questions. Please use this opportunity!"

**– Do you think participating in these projects may impact developments in the regions participating?**

"Yes, of course. The importance given by the programme to the impact of projects on the policy cycle has increased in recent years, and this trend will continue in the next programming period. In Switzerland, for instance, we've seen that Alpine Space projects have pushed some regions to deal with issues that weren't specifically tackled before, such as demographic change. Moreover, some activities launched in the IIIB period (2000–2006) are still in place, and they're proving to be valuable parts of certain regional sectorial policies."

**– What do you expect with regard to the next programming period?**

"The programme has set clear objectives and of course I'm confident that excellent projects will be developed in all four priorities. From a personal point of view, I'm particularly curious to see which projects will be developed under the priority 'Low Carbon Alps' because energy has a much more important place in the programme than in the previous period. The fourth priority on governance, which is a new topic for the programme and which is partly linked to the future Macroregional Strategy for the Alpine Region (EUSALP), will also be really interesting."

**– I'd like to take this opportunity to express my gratitude to Sébastien Rieben and ARE, the Swiss Federal Office for Spatial Development, for the opportunity to carry out this interview and for their support for the SPHERA project.**

Interview conducted by Caroline Perrin, 5 December 2014

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# Health, social and spatial planning policies and accessibility of services in the ageing society

This short article outlines some of the important issues arising from the discussion on ageing in Slovenia and the related challenges of health, social and special planning policies in the Alpine area. This discussion raises many questions. What kind of policy approaches, measures or social organisation should be followed to improve the quality of life of the ageing society in times of austerity and uncertainty? Are health and social services equally accessible for all population groups regardless of the place of residence? Can special attention to questions of age and ageing result in positive discrimination towards the elderly? Are the policy efforts for older people's quality of life of marked by a zero-sum game and consequent loss of quality of life for the younger generation, which may cause intergenerational conflicts, or can a positive sum be achieved through intergenerational solidarity, intersectoral governance, inclusive policies and thus increased social cohesion and quality of life that lead towards inclusive growth and sustainable development despite demographic change? The following text is a short and tentative reflection on the current situation, which looks at many possible angles through a sociological perspective. The limited space of this article does not allow exhaustive discussion, and so the article mainly focuses on public policy principles and the accessibility of health services in particular as well as social services, including some examples of other services of general interest.

First, there are key principles that should provide a suitable guide when tackling the issues mentioned above. For health as an important element of quality of life, it is crucially important to understand this ubiquitous concept in a broader sense. This also means recognising social determinants of health among its biomedical dimensions; for example, the WHO definition of health (1948) also emphasises mental and social wellbeing among other dimensions. Therefore health policies should not focus solely on disease prevention and organisation of healthcare systems. Furthermore, WHO states several fundamental preconditions and resources for health: peace, shelter, education, food, income, a stable ecosystem and sustainable resources. It is therefore important to be aware that health is highly dependent on and derives from the physical and social environment. This means that taking care of health is strongly connected with governance across various sectors, including spatial planning. Many of the most pressing health issues are outside the healthcare sector. Since the First International Conference on Health Promotion in Ottawa, WHO (1986) has called for "healthy public policy". This means that health aspects should be implemented in all public policies and a whole-of-government approach should be taken. In addition to the "health-for-all" principle, the Alma-Ata declaration (WHO, 1978) also set user involvement as an important norm by stating that "people have the right and duty to participate individually and collectively in the planning and implementation of their health care". Another guiding principle to be respected is "nothing about us without us" – a slogan often used by NGOs, especially pensioners' associations and patient organisations. At its core, spatial planning is bound to similar principles developed in the European Regional/Spatial Planning Charter (the "Torremolinos Charter"), which among other things include improving quality of life, coordinating different policy sectors, coordination and cooperation between various levels of decision-making, and promoting public participation (Council of Europe, 1983).

This brief overview of the current situation starts with population ageing. Slovenia has morphologically heterogeneous terrain, and demographic change has been particularly intense in remote mountainous areas (Statistical Office of the Republic of Slovenia, 2012). Lack of employment opportunities and remote services of general interest have accelerated out-migration of young people. Older people that are attached to the community and their place of residence do not out-migrate unless they are forced to move into a nursing institution, for example, due to ill health or infirmity. This breakup of family networks threatens intergenerational solidarity, which is an important source of wellbeing and welfare of all generations. A number of characteristics make older people one of the most vulnerable groups. With increasing age, the elder-

ly face a multitude of risks, including worsening of their physical and mental health, aggravation of their financial status, breakup of their social networks and consequently a reduction in their autonomy and quality of life. All policies including spatial planning should pay careful attention to these processes in order to tailor their interventions to the needs of an ageing population. Older people in remote areas face the risk of spatial and social isolation. A comparative quantitative study on social exclusion between EU countries has shown that older people in Slovenia are among the worst off with regard to low income and spatial exclusion (i.e., poor access to services in their local area), which is all the more worrying considering their limited mobility (Filipovič Hrast, 2011). A qualitative study (Hlebec et al., 2010; Kavčič, 2011) found numerous coping strategies that older people use to overcome problems of social isolation. The main disadvantages of older people living in remote rural areas were related to difficult access to various service infrastructure (from health services and administrative offices to disappearing local corner shops replaced by remote shopping centres), difficulties in transport (due to low availability and adaptation to their needs) and a shortage of cultural activities.

Although access to Slovenian healthcare is insurance-based, the rights of entitlement to healthcare are universal. Nearly total coverage and healthcare facilities evenly spread across the country offer generally accessible services to all citizens. Nevertheless, in practice, there are limitations to universal access and choice due to waiting times and a shortage of providers in certain areas. For example, there is an insufficient number of dentists. Some providers (public or concessionaires) might reach full capacity for publicly funded programmes; hence, users are unable to choose their services. Less common and more complex pathologies can only be treated

with certain specialists concentrated in main urban areas. Compared to other EU countries, accessibility of healthcare was found to be worse than in the old EU member states (Pahor et al., 2011). The main drawback of public services was found to be the waiting times (see Siciliani et al., 2013; Health Consumer Powerhouse, 2013). The rationale of concessions is to complement publicly operated services, deliver services in a more efficient and user-friendly manner, enhance patient choices and thus improve access to services, especially in remote and understaffed areas. However revisions by the Court of Audit (2008a; 2008b) have shown that in the process of granting concessions the key principle and condition of improving accessibility (in terms of distance and time) has often been disregarded. Furthermore medical doctors are less eager to choose a career path in a remote place, which leaves some distant places without suitable care. All of this results in less than optimal access to health services. Similar social services, in particular community care for the elderly, were found to be unequally accessible across municipalities. Municipalities where institutional care is not provided are predominantly rural and less developed. The majority of older people must leave their municipality of residence when moving into institutional care. Such a change of environment has various negative effects on the quality of life of older people. A similar situation can be observed if one takes social home care into account. A group of smaller rural municipalities with low availability and quality of services, a small number of users of home care and high costs turns out to be the most problematic (Filipovič Hrast et al., 2014; Hlebec et al., 2014).

Having named a few illustrative examples of health and social care accessibility issues, this article now outlines some of the policy recommendations that should be drawn into the discussion.

An important and often overlooked issue in policymaking is the heterogeneity of older people (Nelson & Dannefer, 1992). Across the lifespan, diversity also increases due to cumulative advantage/disadvantage processes. It is therefore increasingly important for sectorial policies and spatial planning to also acknowledge the diversity of older people in order to avoid age-based generalisations in their policy measures that could render them ineffective. A few guiding policy principles have already been mentioned; for example, health in all policies (McQueen et al., 2012). Because health depends so much on the social and physical environment, it is absolutely necessary that it also be implemented in social and spatial policies. Spatial planning also recognises the need for coordination and cooperation with other policy sectors. In general, it is important to consider the broader impact of sectorial policies, which is becoming increasingly more difficult in complex postmodern societies. Public policies that tackle such complex issues should be coordinated and integrated as much as possible. Here further steps should be taken. Anecdotal evidence suggests that ministries often act decoupled from each other, like "silos" without proper and effective cooperation and integration to take advantage of desired synergies. The nature of cooperation rarely exceeds formal consultations; moreover, intensive joint work between different ministries towards common goals seems to be rather limited and is rarely translated into real policy integration – a point all too obvious in the case of the awaited act on insurance for long-term care. This anecdotal evidence of weak coordination is supported by the revision report of the Court of Audit (2012) on regulatory impact assessment. Impact assessment is often carried out insufficiently and is more or less regarded as a mere administrative obligation. The lack of monitoring of existing regulations in practice and the absence of a mechanism for monitor-

ing proposed regulations has also been identified. In addition, the Court of Audit has called for further improvements in public participation in the processes of adopting laws. In conclusion, it seems that in Slovenia public policies address issues of age-related quality of life separately. These fragmented policies cannot adequately manage diverse and complex social problems related to demographic change, and so it is increasingly important to follow new approaches. Without measures towards intersectoral governance of social problems and implementation of user involvement in all steps of policymaking and implementation, policymakers also run the risk of public opposition. Reorganisation and a new holistic approach focused around social problems to integrate intersectoral and interprofesional cooperation together with public involvement are needed. Only in this way can one hope for a positive sum of interventions for all generations leading to social cohesion, inclusive growth and sustainable development despite demographic change.

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Karina SIRK

# Idea versus implementation: Experiences from the project "Elderly for a higher quality of life at home"

"Elderly for a higher quality of life at home" is an important Slovenian initiative for supporting the elderly based on the principle of self-help among the elderly in the local community. The programme volunteers, who are spread throughout the entire country, visit elderly people over age sixty-nine in their homes, and they try to identify their needs with the help of a questionnaire and provide them with further information. The service is free for everyone.

The project is run by the Slovenian Federation of Pensioners' Associations. The programme is managed by two professionals and one retired professional. They coordinate the programme, recruit volunteers and take care of the network, write reports, do all the administrative tasks and so on. The project board has eight members and decides on all matters connected with the programme. An education committee (eight members) and an IT committee (four members) were created as part of the project board. Regional coordinators (fifteen people) are responsible for the network in their region. They manage and guide the associations in the region. Coordinators at the local level (approximately 240 people) have contact with volunteers and provide them with support. Volunteers (3,307 in 2011), who are appropriately trained, visit the elderly at home and learn about their needs.

The programme is financed from various sources. In 2011, 63.8% of sources were from public funding (from the Ministry

of Labour, Family and Social Affairs and local municipalities), 30% from lottery sources, 4.7% from donations and 1.5% from the Pension and Disability Insurance Institute of Slovenia.

The main goals of the programme are to identify the needs of the elderly living at home, establish ongoing contact with public service providers and NGOs, provide them with information about the needs of the elderly, organise support for their peers, inform the local community about the quality of life and needs of older people living at home, enable civil society to monitor provision at home and expand the programme across the country by including more pensioners' associations.

An important characteristic of the practice is that it is provided by the users (the elderly) themselves and systematically includes all elderly people in the community. Ongoing help among people living together in local communities is therefore emerging. The goal is for the programme to become a permanent one. Another advantage is that volunteers visit users in their home environment and deal with them face to face, trying to understand their needs and goals. The volunteers try to accommodate their wishes and needs with interdisciplinary help. To satisfy their demands, users do not have to go anywhere (i.e., visit a particular institution) and, considering their age, this is very beneficial. The practice identifies the needs of the elderly living at home

and those that have been overlooked by the social protection system. It informs the local community (the public sector, NGOs, etc.) about the reality of the living situation of the elderly. The practice uses a bottom-up approach.

There are no eligibility criteria for users. Within the programme, all of the elderly over age sixty-nine are visited by volunteers that cover certain regions or municipalities. Low income is not a criterion for a visit. The only criterion is that the user is willing to participate and that he or she is over sixty-nine. In 2011, 277 pensioners' associations from various regions of Slovenia were included in the programme to help the target group.

When volunteers visit the elderly, they decide on the basis of a conversation and a questionnaire what actions need to be taken to accommodate the user's needs. The users therefore decide for themselves what kind of help they need and if they want to participate in the programme. Expressing of their wants and needs indirectly affects the programme's design because the volunteers have the option to participate in planning, designing and evaluating the programme. It is not rare for users' families to recognise more needs than the users themselves.

One of the extensions of the practice is an instrument called "local coordination". The function of this instrument is to bring together all the stakehold-

**Figure 1:** Elderly people at the Fifteenth Volunteerism Festival, May 2014 (photo: Archive of the Slovenian Federation of Pensioners' Associations).

**Table 1**

| Strengths | Weaknesses |
|---|---|
| • Many volunteers and much information | • Few professional staff |
| • Social inclusion of all elderly over sixty-nine | • Lack of data analysis |
| • Connecting the local and national levels | • Lack of knowhow for administering funds at the local level |
|  | • No systematic measurement of users' satisfaction rate |
| **Opportunities** | **Threats** |
| • A chance for the elderly to organise among themselves | • Unprofessional volunteers (some) |
| • Nationwide community help | • Lack of control over volunteers |
| • Social services at home and homecare | • Potential abuse from outsiders |

ers that work with the elderly (Caritas, the Red Cross, homes for the elderly, adult day-care centres, etc.) in a certain municipality. For now, only certain municipalities are implementing this instrument. The programme hopes to extend this instrument to all municipalities. The various stakeholders are not directly involved with the programme or each other. However, they are partners in the project. The aim for the volunteers is to recognise users' needs and to then "push" them towards a certain institution that can accommodate their needs better. This enables the elderly to obtain the social services they really need. Local coordination is intended to connect all institutions and individuals that work with the elderly in a certain area. The idea is to find common solutions and to ensure an interdisciplinary approach. The main strength of the programme is therefore to detect and further satisfy the real needs of the elderly.

The practice exists at the national level. From 2004 to 2011, volunteers visited 120,181 people over sixty-nine (57.41% of the target group). The proposal of the practice was designed in 1997 and lasted until 2004 as a pilot project. The practice itself was introduced in 2004, and it has been ongoing since then. There have been no discontinuities. The plan is to continue the practice for as long as possible. No limit has been set. The findings of the pilot project, which were that the elderly want to continue living at home with some help from their community, had a great impact on

the design of the programme. The most important milestones in implementing the project were the first favourable results of the programme. When municipalities that were not yet involved with the project realised that it was successful, they joined in.

The programme faces the following barriers: it currently has no access to a systematic list of all people over sixty-nine in Slovenia. This is due to legislative restrictions. This is a major problem, especially in cities. The second barrier is uncertain funding and a lack of financial resources. The programme is currently very widespread and therefore requires more funding. It is almost impossible to cover all the expenses at the national level. This greatly affects the long-term sustainability of the programme. Third, some volunteers are better than others; their psychological and physical skills make working with them very different. The programme is trying to retain its current volunteers for as long as possible, even though it is known that there is a high rate of turnover in this kind of work. On the other hand, it is necessary to constantly recruit new volunteers. There have been situations in which the programme has been used by fraudulent individuals pretending to be volunteers in order to gain entry to users' houses or flats. Volunteers therefore have recognisable badges and announce their visits beforehand.

Even considering these barriers, the programme has much potential for future development. It offers an opportunity for the elderly to organise among themselves, which can lead to expanding their social networks, new friendships and so on. Another advantage is nationwide community help, which can strengthen community bonds and integrate the elderly within a wider local environment. As mentioned above, the interdisciplinary approach involving various individuals from social services at home and homecare can lead to improved service and better recognition of the elderly's needs and wants (Table 1).

Regarding these problems, the programme officials have contacted the national information commissioner and other authorities (mayors of municipalities, politicians, etc.). The idea is to modify legislation and enable the programme to access the data needed. Regarding funding, the programme is seeking to classify itself as a regular activity in local communities, meaning that municipalities would finance the material costs of the programme. The main coordination and training would be financed at the national level. Regarding volunteers, the programme is continuously recruiting new volunteers and training them. The organisational structure is relatively solid and enables the expression of views of all participants in the programme. The only weak point

is the fact that the programme relies heavily on volunteers, which means that the quality of service depends on their work. On the other hand, this enables great effectiveness with a low financial input. The most important issue affecting the long-term sustainability of the programme is the still unsolved question of long-term financing. The goal is to redirect the financial (material) costs of elderly associations operating at the local level to the municipal level. All the other costs of training, monitoring and reporting would remain at the national level.

This practice was qualified among the best practices within the category "Best innovative practices in the area of community building" in the project HELPS (Housing and home care for the elderly and vulnerable people and local partnership strategies in Central European cities), implemented in the 2011–2014 period through the EU Territorial Cooperation Central Europe Programme and co-financed by the European Regional Development Fund. The practice was considered innovative because it is an important supplement to other social care programmes. It includes many volunteers, many working hours and low costs because the volunteers visit the elderly in their homes. It includes all of the elderly in certain communities and identifies elderly people that are overlooked by other programmes and services in their areas. These people do not have to go anywhere and, considering their age, this is very beneficial. If a person expresses a certain need, volunteers try to find an appropriate solution (public and/or NGOs). The practice is important and significant because it informs the local community about the quality of life and needs of older people living at home (Banovec et al., 2013).

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# DEMOCHANGE – Demographic change in the Alps: Adaptation strategies to spatial planning and regional development

### Project starting points

Demographic change is a key challenge in Europe today because it is also a major issue in regional development and spatial planning. In the sensitive Alpine region, which is so special and different from its surrounding metropolitan areas, finding adequate answers to the challenges of demographic change is vital for the survival of its unique settlements, culture and local character, and especially for its people. Accurate spatial planning and regional development require specific in-depth studies in various fields such as migration, the labour market, changes in demand for public services (i.e., healthcare, education and transportation), the cost and quality of housing and so on. The DEMOCHANGE (DC) project addressed these issues not only in a strategic way by developing roadmaps for spatial and regional development, but also in practice by implementing twenty-seven pilot actions.

### Project goals

The main DC goal related to the health and spatial planning issues, which are also the focus of the SPHERA project, was to better understand the past, current and future regional and spatial impacts of demographic change within mountain regions. This goal was followed by specific aims:

- To raise the awareness of the general public and regional stakeholders of demographic change;
- To create an overview of the regional and spatial impact of demographic change in Alpine regions;
- To provide a set of utilities for mobilising and activating stakeholders and decision-makers;
- To develop specific measures adapted to the needs of different model regions;
- To create generalised adaptation strategies, roadmaps and activities for the Alpine region; and
- To create a network to implement pilot actions and strategies in Alpine regions and communities.

### Content of work packages

As required by the Alpine Space Programme standard, the first three work packages were devoted to project preparation (WP1), project management (WP2) and information and publicity (WP3). WP4 focused on demographic change analysis with the aim of creating an overview of the regional and spatial impact of demographic change in Al-

pine regions. WP5, entitled "Adaptation process utilities", concentrated on mobilising and activating the respective stakeholders and decision-makers to start a discussion about demographic change at the regional level. Within WP6, based on the results of the analysis and data collection in WP4, each partner from Austria, Germany, Italy, Slovenia and Switzerland established individual pilot actions in their model regions. WP7 analysed these pilot actions and, also taking into account the results of WP4 and WP5, created generalised adaptation strategies, roadmaps and activities for the Alpine region. The last work package (WP8) was a synthesis of the entire project. The results of the project with a focus on strategies for rural and spatial planning in the Alpine region were disseminated through the final conference, publication of the book *Coping with demographic changes* (Bausch et al., 2014) and other channels.

### Project outputs

The outputs of the DC project can be categorised and summarised as follows:

a. *Recommendations for policy-makers and policy papers:*

- Demographic change in the Alps: Adaptation strategies to spatial

**Figure 1:** Identifying measures to activate the elderly in a focus group with the elderly (Bled, Slovenia; photo: Barbara Černič Mali).

planning and regional development, results booklet (Forster, 2012);

- Strategies to cope with demographic change in the Alpine region: Roadmaps for spatial planning and regional development (Maurer et al., 2012);
- Demographic challenges in the Alpine region: The search for transnational answers (Maurer, 2012).

b. *Guidelines for practitioners:*
- Public Participation Manual (Müller & Stotten, 2011);

c. *Tools and decision support systems:*
- SWOTTOOL: Internet tools to do online SWOT analysis on demographic change.

d. *Studies and analyses:*
- Demographic change in the Alpine region; short regional reports (ten reports).
- Demographic change in the Alpine region; summary (Marot & Černič, 2011).

Furthermore, with the aims of raising awareness, enabling exchange of knowledge, sharing information about good practice initiatives and fostering cooperation, DC established an expert network of planners, regional developers and decision-makers within Alpine regions.

The results of the DC project are available for download at the project homepage (http://www.demochange.org). Within these results, this presentation focuses on the actions and measures presented in the final DC document, entitled "Strategies to cope with demographic change in the Alpine space: Roadmaps for spatial planning and regional development". It should be pointed out that they are to be regarded as general recommendations that have to be adjusted to relevant national challenges and planning systems, as well as to their inherent differences. Even though demographic changes affect the entire Alpine region, the local representations of this phenomenon are highly heterogeneous and location-specific. For this reason, any ambition to design common strategies for the Alpine region is impeded by diverse planning approaches traditionally used in the Alpine regions, as well as by the various representation of demographically induced problems at the various local levels. Despite these complexities, these recommendations can be used in regional planning and regional development to tackle demographic change (Maurer et al., 2012).

Three general recommendations that relate to the scope of the SPHERA project were highlighted:

1. *Adapting to demographic change as an obligatory target and a priority field of action in regional planning and regional development*

   The precondition for implementing this recommendation is that demographic change first be recognised and then formulated as an explicit objective in all regulations and legislative acts in regional planning and development.

2. *Improving utilisation of current demographic monitoring tools and processes*

   The demographic data (monitoring, statistics and reports) that are provided by Eurostat and national statistics offices at all levels, including the local one, should be continuously utilised by regional and local managers and authorities to obtain adequate input relevant for adapting local and regional strategies.

3. *Connecting regional development and spatial planning*

   The issue of strict institutional separation of spatial planning and regional development was highlighted by experts as an unsustainable separation. The two areas of expertise that are closely related and interdependent are viewed and treated as separate areas of work and expertise, with dissimilar competencies and competence levels in the various countries of the Alpine region. Both areas could be better aligned in terms of definition of objectives, strategy development and implementation of measures through establishing a common platform or through institutionalised regular meetings, hopefully resulting in improved coordination and greater efficiency.

Apart from general recommendations, *specific recommendations* on demographic challenges that should especially be taken into consideration within spatial

planning and regional development strategies were prepared. Those were ordered by the following three topics: 1) children, families and youth, 2) the elderly and 3) migration. The main challenges recognised within the second one (i.e., "Seniors and ongoing aging of society") were that the over-aging of the population in the Alpine area poses the main challenges, especially in relation to mobility, access to services and provisions for older people. These issues are followed by three objectives that specifically target health and social issues of the changing society. Recommended measures were proposed, along with a proposal for actors that should play the role of leading, moderating and cooperating, with levels (national, regional and local) also suggested.

Objective 1: *Supporting family care better*

- Recommended measure 1.1: *A system of care security and financial assistance for home care* for the elderly and disabled in all Alpine regions could be introduced. Eligibility would depend on individuals' conditions and need for care. The measure could prolong independent living of the elderly within their familiar environment, supported by necessary care.
- Recommended measure 1.2: *Assistance (including financial) as a contribution to families for their efforts in providing care at home for their members in need.* Families taking care of their own family members could be assisted by professional services and care institutions and supported by basic training offers and consultation hours. Similar to the measure above, this would create preconditions for staying at home longer and would at the same time ease the burden currently imposed on families.

Objective 2: *Improving housing, mobility and independent living for elderly people*

- Recommended measure 2.1: *Incentives for constructing sheltered housing and adaptation of owner-occupied homes* with the aim of promoting independent living. The elderly and disabled should be supported in terms of organisation and financing to adapt their homes to specific accessibility and safety needs. Information on favourable financial instruments and reliable contractors for adaptations should be provided to them. In addition, information on other available housing options for the elderly (flat-sharing; inter-generational living, etc.) should be disseminated via info-points.
- Recommended measure 2.2: *Guaranteeing the proximity and availability of services and provisions for the elderly.* Provisions for the elderly often rely on relatives and neighbours. If proximity and availability of services and provisions cannot be guaranteed, basic services could be provided via "call centres" or mobile units (mobile sales points), for example. If the provision of profit-based services is too costly, volunteers could be stimulated, trained and involved. Furthermore, financial incentives for local providers of services that could help maintain a sufficient level of provision could be less costly than public provision of services.
- Recommended measure 2.3: *Setting up day-care centres for elderly people:* Two types or levels of services could be provided: a) assistance for the elderly that are still in good psychological and physical condition and b) day-care for individuals that live with their relatives but cannot live independently while other family members are absent (e.g., due to jobs). The aim

of the services for the first group would be to improve their quality of life, reduce loneliness and reduce the dependency the elderly on their relatives. The services for the second group of users is more demanding due to the need for professional personnel, but overall would still be less costly than institutional care and would reduce the burden of other family members. Such day-care centres could be set up in smaller scale and could, if associated with other public institutions (e.g., preschools or youth centres) share the infrastructure and services, and possibly stimulate intergenerational cooperation.

- Recommended measure 2.4: *Checking demography in all infrastructure planning and construction issues:* In all planning and building projects that have an impact on elderly people there should be an ex-ante demography check in relation to barriers, the proximity of services and supply, public traffic services and so on. This is also in line with the contemporary concept of design for all.

Objective 3: *Improving social integration of elderly people*

- Recommended measure 3.1: *Implementing new activities for elderly people:* active elderly people can offer important support and knowledge-sharing to other elderly people or young people. A council of generations or intergenerational centres could be created with the aim of building a bridge between generations while fostering their participation in social life. The benefits would be multiple: the knowledge and experience of the elderly would be capitalised, the elderly would be protected from social isolation and exchange between young and old would be improved. Furthermore, knowledge and skills of the local elderly could

also be included in local economic activities; for example, guides for history, tradition, crafts and so on.

An important part of the DC results were twenty-seven pilot actions put into practice in the five partner countries. The pilot actions covered a broad range of topics, several of them addressing more than one issue. About a half of all pilot actions focused on society, culture and integration, followed by those on tourism and hospitality, and then those on settlement and housing, on mobility, infrastructure and supply, on health and nursing care, and on the job market and qualifications. All of the pilot actions tried to develop strategies to adapt to demographic change and have implemented measures to cope with challenges of demographic change (Forster, 2012).

Together with nine other ASP projects, the DC project was selected for assessment analysis within WP4 of the SPHERA project. The analysis was performed in order to capitalise on the main achievements of the past projects ASP projects targeting health and spatial planning issues and to identify the most valuable lessons learned from those projects.

**Project partners**
The project was led by Munich University of Applied Sciences, Department of Tourism (Germany) and involved the following partners from research institutions, universities, regional agencies and municipalities:

- The Regional Government of Salzburg, Department of Spatial Planning (Austria);
- The University of Salzburg, Department of Geography and Geology (Austria);
- The Aosta Valley Autonomous Region, economic and social observatory (Italy);
- The National Union of Mountain Municipalities, Communities and

Authorities (UNCEM; Italy);
- The Free University of Bolzano, School of Economics and Management (Italy);
- The Urban Planning Institute of the Republic of Slovenia (UPIRS; Slovenia);
- The Regional Development Agency for Northwest Upper Carniola (RAGOR; Slovenia);
- The Oberallgäu District (Germany);
- The Garmisch-Partenkirchen District (Germany);
- The Lucerne University of Applied Sciences and Arts, School of Social Work (Switzerland):
- The Policy Studies Research Consulting – Interface (Switzerland); and
- The Conference of the Cantons Luzern, Uri, Schwyz, Obwalden, Zug und Nidwalden (Switzerland).

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Natalia ALLEGRETTI

# NATHCARE: Networking Alpine health for continuity of care

**Duration:** 1 September 2012 – 30 June 2015 (34 months)
**Financing**
The project is co-funded by the Alpine Space Programme:
- Total project costs: €2,753,000
- Total ERDF funds: €1,926,600

## Project starting points

Demographic change is a global trend in Europe that particularly affects the Alps. The age index, showing the ratio between older people (those over sixty-four) and younger people (those under fourteen), reveals the dramatic extent of this problem, which is primarily the result of young people moving to nearby towns and cities for better employment opportunities. In the framework of a changing society, there is a need for specific political activities able to respond to new needs. Within the healthcare sector, the rising number of elderly can be easily translated into significant growth in the number of patients with long co-morbidities, as well as a wider range of age-related conditions. From a recent European study, about 80% of older adults have one chronic or long-term condition, and 50% at least two. Another dimension of this trend is the increasing number of women delaying motherhood: this causes more clinical risks and complications that require co-ordinated social and clinical services for taking care of woman. From such a perspective, the need to reduce the burden of increasingly older populations poses a common challenge for healthcare systems in the Alpine area and quality performance across care settings. Various forms of healthcare able to deliver better health to a changing population but, at the same time, able to support

sustainable and efficient care systems, are needed. Organisational innovation supported by technology provides ways to best tailor care services both to the growing demand linked to ageing and to long-term expansion of diseases, and to offer the same level of services as in metropolitan areas to encourage residents to remain in the Alps. The main drive should be a move towards an integrated social and healthcare model fostering the concept of collaborative activities between hospitals and areas to support continuity of care and overcome fragmented interventions. Future healthcare systems thus need to deliver high-quality care while using cost-effective models.

## Project purpose, objectives and content

Addressing a health-related condition – be it an acute or long-term disease – in modern healthcare systems requires the involvement of multiple professionals, each of them focusing on a facet of an intricate picture that needs integrated management. The need for more efficient ways to integrate and circulate both knowledge and clinical information among all participants during care is high and often unaddressed in the modern healthcare system.

NATHCARE's main goal is to provide ICT solutions addressing this problem and also to ensure that remote areas may

enjoy the same opportunities as metropolitan areas as far as health is concerned. NATHCARE has designed and consolidated, and is validating, a model embracing all players in the system for securing economic sustainability and improved organisational adaptation of healthcare services. The proposed model, starting from the regional healthcare systems involved, analyses the process for appropriate hospital territory integration by mainly, but not exclusively, addressing long-term diseases from the perspective of continuity of care as a dimension of demographic change.

A central role in the project is played by "local healthcare communities", which represent the physical and organisational localisation of NATHCARE service experimentation. Each local community, nine in total, is identified according to the specific healthcare model in use at the regional level and is envisaged as networking all the stakeholders – patients, hospital-based healthcare professionals and territory-based healthcare professionals – involved in long-term care management.

The project strategy aims to promote exchanges of evidence-based information on best-practice and state-of-the-art management of health-related conditions starting with long-term diseases; supporting the implementation

of best practices described above at the NATHCARE pilot site level through the use of ICT tools and an innovative organisational approach; empowering patient profiling and identification for sharing over the entire NATHCARE consortium guaranteeing patients deserved treatment regardless of their location.

The NATHCARE approach was conceived taking into account that most healthcare systems target chronic conditions, implementing a "traditional" disease-care model that is mostly physician-centred, episodic, strongly focused on acute care and reactive rather than proactive. Modern healthcare systems are struggling with the commitment to develop new care models, overcoming some inadequacy of "traditional" approaches, designing models that should be patient-centred, integrated and proactive with care delivered by a healthcare team. This means that, to ensure an adequate response from health systems for this dimension of demographic change, measures such those listed below should be implemented:

- Better coordination of care across health and social services, as well as across different levels of health care, is seen as crucial;
- Because many older people inappropriately remain in hospital, a number of measures can be applied to allow for more treatments out of hospital;
- Encouraging better self-care: increased health literacy and better access to technology, such as computers and the internet, may help improve the understanding and management of specific diseases.

Such measures have been taken into full account by the NATHCARE project in developing a "management solution for long-term care patients" through a three-pronged strategy: 1) *Integration of primary care:* integration of primary and secondary healthcare processes to

establish an up-to-date patient care plan. This is intended to support the implementation of a patient-centred, coordinated care model, targeting patients requiring continuous and coordinated care, 2) *Knowledge management:* aimed at capitalising the professional competencies present in the NATHCARE network, making them available to all professionals and organisations. The final goal is to improve the level of service towards the highest standard available and to promote cooperation among centres participating in NATHCARE, 3) *Patient empowerment:* this is an essential part of NATHCARE focused on increasing awareness and promoting healthy lifestyles.

A coordinated care model simplifies the dialogue between different providers of healthcare services involved in caring for patients affected by chronic conditions and co-morbidities, such as elderly patients. This makes coordinating care across various levels of healthcare particularly important (integration rather than fragmentation). Better coordination and a greater emphasis on preventive services are advocated as a way to reduce hospital admissions and length of stay. With this has come a shift towards care and treatment moving out of the hospitals and into the community and the home, leaving patients and family with a greater responsibility for their own health. In line with this health transition, the focus on patient responsibilities and their role in managing their health has grown substantially and is an increasing focus of health policy. Empowering patients means providing them with the opportunities and the environment to develop the skills, confidence and knowledge to move from being passive recipients of care to active partners in their healthcare. To do so, information needs to be much more easily available and understandable; increased health literacy and better access to technology, such as computers and the internet, may help patients engage

more in self-care. More structured access to knowledge promoting exchange of evidence-based information about best-practice and state-of-the-art management of health conditions will support healthcare professionals in delivering better care and in becoming more effective communicators.

The technical development of the model led to deployment of the NATHCARE system, allowing the start of the project pilot phase. The results of the model evaluation as implemented and used in real environments during the project testing phase, benchmarked with chronic disease management models currently adopted, will be offered to policymakers as an example for inspiration for adopting orchestrated policy strategies to mitigate the impact of demographic change on healthcare systems.

**Work package content**
The project is divided into eight work packages. Each work package is divided into a number of actions.

The project work packages:
- *WP1: Project Preparation*: Project proposal preparation.
- *WP2: Project Management*: Project management including content coordination and financial and economic management.
- *WP3: Information and Publicity*: Dissemination and awareness creation about the project and its results.
- *WP4: User Requirements*: Analysis of users' needs and requirements. Definition of the system's functional specifications.
- *WP5: Model Design*: Description of the NATHCARE model, which proposes a common, overarching architecture, which takes into account the diversity of regional implementations. Definition of the legal, technical and organisational rules to be applied to model implementation and operation.

- *WP6: Services and Platform Design*: Technical design, development and integration of the NATHCARE platform and services devoted to support the regions involved to best cope with dimensions addressed by the project as part of demographic change.
- *WP7: Testing and Piloting*: Implementing the NATHCARE system at pilot sites, training and pilot operational activities.
- *WP8: Assessment*: Analysis and assessment of current healthcare models devoted to continuity of care in partner regions. Evaluation and assessment of the NATHCARE model. Definition of the NATHCARE reference framework to be used at the political level as a reference for conceptualising policy guidelines.

**Project results**

The project has achieved relevant intermediate results, including:

- An analysis of the functional, technical, organisational and legal requirements conducted at the level of hospitals, healthcare organisations and professionals aimed at mapping current ways to manage chronic and long-term patients, and also identifying major elements for improvement of the chronic-disease and long-term-care management process.
- Definition of the functional and non-functional requisites shaping the NATHCARE model, which provides a set of ICT-based services integrating primary and secondary care, knowledge management and patient empowerment.
- A model conceived as a modular system composed of building blocks that can be customised according to three different scenarios for implementation: 1) a standalone solution, which was completely developed by the

NATHCARE technical team, 2) an integrated solution, in which components of the NATHCARE standalone solution are replaced by components that are available at the pilot site, or 3) an organisation's own application, in which an already-existing solution is in place and is integrated with a knowledge management tool developed within the project.

- A network of nine local healthcare communities, geographically consistent, regionally based and qualified in each territory in the light of healthcare responsibilities and professionals' roles, gathering all the players in the care system to localise the pilot actions and to test and validate the NATHCARE model.
- A complete system prototype composed by two dedicated application modules: the Knowledge Management Tool and the Care Plan Tool. The NATHCARE system user interface (the main point of access to all NATHCARE services by system users) has been conceived to be as user-friendly as possible to facilitate use of the application and to create a pleasant and agreeable "look and feel" of the overall system. Deploying the system has allowed the start of the project pilot phase with different timing.
- A defined methodological approach and related indicators for assessing both current healthcare models and the NATHCARE model. The effectiveness of the proposed NATHCARE model will be measured starting from an in-depth analysis of current healthcare models applied in each piloting region for managing chronic and long-care term conditions, in order to understand the extent to which the NATHCARE model can improve them.

- A preliminary policy guideline providing an initial view of the lessons learned through implementing the project activities and outlining the initial results that the project team can offer stakeholders for further reflection.

**Project partners**

NATHCARE has a geographical coverage including nine regions in the Alpine area and is coordinated by a consortium composed by regional institutions in charge of healthcare and eHealth governance and policy implementation, healthcare organisations and hospitals, and competence centres combining technical and clinical skills.

The NATHCARE project partners are:
- Lombardy Region: General Directorate for Health (Italy), lead partner
- INSIEL s.p.a, RDT European Projects (Italy)
- Autonomous Province of Trento, Local Ministry of Health and Healthcare Policies, Department of Health Policies (Italy)
- Garmisch-Partenkirchen Hospital (Germany)
- Healthcare Cooperating Group, Rhône-Alpes Information System for Healthcare (France)
- Rhône-Alps Regional Oncology Network (France)
- Healthcare Cooperating Group, EMOSIST, FC (France)
- INSA, LIRIS, IT Department (France)
- Villach Regional Hospital (Austria)
- Golnik University Clinic of Pulmonary and Allergic Diseases (Slovenia)
- Geneva University Hospitals (Switzerland)

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# The HELPS project pilot activity: An info point for housing solutions for seniors (Ljubljana, Slovenia)

**The HELPS project in brief**

HELPS (Housing and home care for the elderly and vulnerable people and local partnership strategies in Central European cities) is a project carried out by twelve joint project partners from eight central European countries between October 2011 and December 2014 and implemented through the EU Territorial Cooperation Central Europe Programme co-financed by the European Regional Development Fund.

The general objectives of the HELPS project are to promote development strategies and practices to improve the quality of life of vulnerable groups with a strategic focus on the elderly and people with disabilities in urban areas in central Europe. Its specific objectives are to develop and consolidate innovative housing and care solutions by supporting models of integrated local governance–orientated policies, products and services.

Within the HELPS project, health, social innovation and housing issues are addressed by combining research studies with practical pilot activity. The research activities comprised a transnational review and evaluation of innovative practices in housing and care solutions for the elderly and vulnerable people in central European cities, developing recommendations for national policies and transnational programmes, and implementing individual pilot activities. A unified methodology for de-scribing and assessing current practices allowed comparability and made the policy implications reliable. The pilot activities were structured according to a common methodology and were adjusted to the main findings from the project's research activities.

The HELPS pilot activities contributed to strengthening independent and active living by the elderly and disabled by focusing on community-based development, creating local governance platforms and paving the way for local action plans. Altogether, twelve partners took part in the project, tested twelve pilot activities and collected primary experience. The outputs of the HELPS projects are available online at http://www.helps-project.eu.

**Pilot activity in Slovenia: An info point for housing solutions for seniors**

The Slovenian HELPS partner that developed and implemented the pilot activity was the Slovenian Federation of Pensioners' Organisations (ZDUS). The ZDUS is an umbrella NGO that brings together 503 local organisations and pensioners' clubs, with a total of 233,000 members. Given this large potential, ZDUS has an excellent opportunity to involve members of the organisation as potential users and to disseminate information on the services offered by the info point.

**Background for selecting the pilot activity**

Like most of the developed world, Slovenia is ageing rapidly. Although the proportion of the population over sixty-five in 2011 was still below the EU-27 average, it is projected that it will be above the EU average in the future (e.g., in 2050 32.6% vs. 30.0%). The cause of the faster ageing rate is a low birth rate that is not outweighed by immigration. The population's median age (41.7) already exceeded the EU-27 average of 41.3 in 2011 (VID, 2012). This steady growth in the population of older people in Slovenia (Černič et al., 2009) has brought to the fore issues of care for the elderly, including housing issues. There are two facts that require a strong policy orientation on housing for the elderly: with Slovenia being a nation of homeowners (Sendi, 2009; Statistical Office of the Republic of Slovenia, SORS, 2014) the homeownership rate among the elderly is one of the highest in the EU, whereas other forms of housing between having one's own home and living in an institution are relatively rare (Mandič & Filipovič Hrast, 2011). Furthermore, as revealed by a recent survey conducted with the support of local pensioners' associations among nearly 6,000 elderly individuals, owner-occupied status (84%) prevails among the elderly (Cibic et al., 2006). Second, more than a quarter of those over sixty-five lived alone in 2002 (Vertot, 2011) and the proportion of these single households is growing. Living

alone means higher economic vulnerability. Several studies (Cibic, 2006; Černič, 2009; Sendi et al., 2009) report difficulties faced by the elderly that live in their own dwellings, such as maintenance and other housing costs. The situation is even less favourable in the city of Ljubljana, where the ageing index is higher than the national one (113.5 vs. 96.3; SORS, 2002) and where some city districts' concentration of the elderly and/or single elderly households greatly exceeds the average (Černič et al., 2009). These facts necessitated a pilot activity orientated towards establishing and promoting new forms of housing solutions for the elderly in Ljubljana.

The decision to develop this particular pilot activity also builds on the advantage of the rather strong role of the civil sector. According to a 2006 survey (Gril, 2006), NGOs play an important role in Slovenia, especially in the central part of the country. The state is the prevalent owner and financer, and is a dominant actor in providing social services. However, the government increasingly recognises that civil society organisations play an important role in providing services to the elderly and to persons with disabilities. This is reflected in the Slovenian pilot activity: 33% of the population in Slovenia are members of at least one NGO, which indicates the importance of civil society organisations.

### Description of pilot activity

At its headquarters in Ljubljana, the ZDUS established an info point for the elderly with the specific objective of providing up-to-date information and advice to the elderly about various housing and care options, such as availability of places in sheltered houses and retirement homes, homecare assistance, cohousing, advice by experts to adapt houses in an age-appropriate manner, legal support on estate/housing options, reverse mortgages, opportunities

to move from current housing units to age-appropriate ones and so on. The pilot activity included promotion of more flexible thinking about housing options by means of awareness-raising media campaign, publications, lectures, roundtables and other promotional events.

Two specific goals were followed. The first goal is to assist seniors and their families in finding the best solution for where and how to live in the third age, considering their personal needs and preferences. The second goal of the info point is to develop the idea of alternative housing options for seniors in shared households (i.e., cohousing) and to carry out a study on the interest in Slovenia in such a housing option, and also about financial aspects (a feasibility study) and legal requirements for establishing these kinds of senior-friendly housing units.

Within the specific objectives of the pilot activity, the Slovenian partner carried out activities connected to the info point and its direct users. This included giving out information and counselling. During the first year of operation, help and advice was given to 240 users with various problems. The major topics included senior cohousing (various forms; 52%), sheltered housing (15%), availability of retirement homes (10%), homecare assistance (8%), refurbishment and adaptations of dwellings (6%) and legal advice on estate/housing issues (6%).

### Target groups

Even though the primary beneficiaries of the pilot activity are the elderly themselves, their families were also involved because they are often the ones that offer support to the elderly and are involved in selecting adequate housing solutions and/or adapting the living environment of the elderly. The second group of beneficiaries is the general public because the pilot activity also aims

to raise awareness of the possibilities for spending one's old age and some alternative forms of housing.

### Description of the implementation process

The implementation process was carried out in accordance with the plan. It included counselling as a tool to provide advice and information for users (beneficiaries) and family members at one point at the front info desk during opening hours, by scheduling meetings or through telephone calls. The process of solving users' problems or addressing their specific housing problems followed the logic of case management, highlighting the design of well-thought-out and comprehensive help or care plans designed in cooperation with users. Such a plan includes:

- Users' problems, needs and desires, as determined from the findings of the user assessment;
- Strategies, such as treatments and interventions, to be determined to address users' problems and needs;
- Goals to be achieved and the timeframe(s) for achieving them, the resources available and the client's desires/motivation that may impact the plan.

During the implementation phase, the ZDUS team recognised two major topics considered particularly important and that therefore needed to be developed further: senior cohousing and adaptations of homes (accessibility and safety) in order to enable older people to stay at home safely and independently.

The ZDUS responded to these needs with two publications on these topics: *Together It's Easier to Be Alone* (*Da je skupaj lažje biti sam*; Boljka & Ogrin, 2013) and *Adapting the Living Environment and Use of Assistive Devices for the Elderly* (*Prilagoditev opreme in uporaba pripomočkov za starejše*; Slovenian Federation of Pensioners' Organisations,

**Figure 1:** Counselling at the info point (photo: ZDUS team).



**Figure 2:** HELPS senior cohousing booklet (photo: ZDUS team).

2013). Special attention was given by the ZDUS to promoting the info point and disseminating information. When designing promotional activities, special attention was given to selecting "user friendly" channels and media for the given age group for disseminating information. Publishing was thus accompanied by public presentations, workshops and other promotional activities.

Altogether ZDUS has published thirty-two articles on this topic, given five interviews and promoted the pilot activity and its activities through several presentations and lectures, including interviews and articles in the local and national media. The media also took part in the promotion with six radio programmes, three TV programmes and five commercials.

**Innovative component of the results**
This model contributes to optimising cooperation between the government and civil sector in order to improve the social sphere. The info point improved the usage of other social services pro-

vided by the state and by the NGO sector because it shared information about housing and care services. Therefore the pilot activity maximised the efficiency of housing services as well as its own functioning. By promoting cooperation between professionals, clients could access personalised information on issues affecting housing for the elderly. Through the pilot activities, experts in the field worked effectively and cooperated while getting closer to clients. Considering the success of the pilot activity, the partner wishes to extend it to other cities in the future.

Although the period of pilot activity is over, the info point was still open for clients in 2014 because the Slovenian partner managed to obtain local funds to cover basic costs; they are searching for additional funds to continue the activities in the future (see Internet 1).

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