HEALTH CAN IMPROVE

Challenges of the Knowledge axis to contribute to local growth through Health Innovation

May 2014
INTRODUCTION

In this second 4D Cities bulletin we fully plunge into the matter, dissecting the role that knowledge plays in the field of Health Innovation oriented to the cities’ economic growth. We are going to closely look at universities and research, health education and training centres to detect how they interact with each other and with the agents in their area; and we are going to make a step further, determining how and with what other agents they should interact in order to improve their effectiveness and to contribute to local development.

A quite ambitious purpose, their results will be outlined as the project progresses. And, at the same time, a purpose that will also be applied to the other three dimensions of the 4D Cities: the health system, business and citizens, which we will also elaborate special reports to analyze them.

The contents displayed emerge from the meetings held at transnational level and with the different Local Support Groups. We also enjoy the experts’ contribution through the regular sections of the article and the interview.

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FROM KNOWLEDGE CAPITAL TO LOCAL SPECIALIZATION

12 IDEAS SO THAT CITIES CAN TAKE ADVANTAGE OF THEIR POTENTIAL LINKED TO KNOWLEDGE TO STRENGTHEN HEALTH AND SOCIOECONOMIC AREAS

What is the role that local authorities need to develop to promote Health Innovation by “knowledge”? Here, we try to give some clues.

First of all, we start from the belief that local government should provide adequate capital investment and harmonization of existing knowledge in the city to respond to the needs of profiles that provides its health policy. That is, it has to know thoroughly what is available (institutions, studies, professionals, students, etc.) as well as what is the context in which it is moved (legislation, skills, geographical location, interest in studies, deficiencies in the system, etc.), because only then will be able to undertake useful and realistic measures.

There are many actions that can be carried out and not all of them will be useful for all the cities (each of them has its own idiosyncrasies, even within the 4D Cities network), but it is a starting point to begin this
task that has a lot to contribute to the municipalities both in economic and social level.

We are going to find out 12 ideas to reach it:

1.- The municipalities can guide the process of collaboration between education institutions and centers of practical training to ensure a consistent health learning locally. University, secondary and lifelong education should be articulated within a system focused on excellence that meet their own needs.

2.- Knowledge related institutions should provide job opportunities to the citizens and also meet the requirements of the local health strategy, both public and private.

3.- Harmonizing education locally, which it means designing a local system of education, but with a much broader perspective. This system should include interdisciplinary studies and respond to an ongoing training, always incorporating pathways both between the highest and lowest levels of expertise, as well as between different disciplines.

4.- The cross-cutting policies of the various departments will provide a more coherent educational system that meets the needs of the health sector.

5.- It can also be undertaken a series of measures to attract students: providing information about the studies offered in the city or on accessing from one study to another, certifying and testing prior training, providing career opportunities in a specific discipline, etc.

6.- On the other hand, not all medium-sized cities have a university or studies related to health physically located in their territory. Those who seek a model focused on health development should invest in knowledge facilities that are suited to their strategy. Thus, the government will choose education appropriate to their situation and will try to implement them through agreements with the Education departments of other administration levels.

7.- Involve higher levels of public administration with the aim of supporting and qualifying an education and training model. Political support can come, for example, in the form of political decentralization and budget’s contribution.

8.- To meet the human resource needs of the health services are important all professions related to health and not just strictly medical. In addition, they will encourage business investment opportunities locally. In this sense, the types of health-related disciplines include:
   · Nursing, healthcare and healthcare management
   · Pharmacy
   · Technology and informatics
   · Community and social work
   · Business management and administration

9.- Secondary and vocational training could offer the studies mentioned in the previous point.

10.- Life-long learning programs allow reducing unemployment by retraining in Health sector needed skills.

11.- Dual training has proved to be a formula that increases employment rates, in particular for young people.

12.- Stakeholders related to knowledge may include a wide range of actors:
   · University with faculties of medical specialties, pharmacy, biomedical, nursing, health administration, etc.
   · University hospitals with medical students in practice
   · Research companies and biotech and science parks
   · Secondary and vocational education of health and social care
   · Life-long learning and retraining centres, including health or medical studies, but also ICT studies according to the health information and communication needs
   · Veterinary schools and faculties

The local Health Innovation project should promote interactions and collaborations among them, as well as create specific roles to develop.
KNOWLEDGE HELIX: ACTIONS AND INTERACTIONS

CITIZENS

- Inform students of available health studies and survey them on their interests in health areas
- Guide along the curriculum and professional competences accreditation process and open calls to officially certify people’s capacity and skills
- Promote engagement of patients with training institutions
- Involve multidisciplinary research teams in the new health system design
- Facilitate that training institutions adapt to the Health Innovation model
- Undertake education policies that promote a social component in Health
- Empower citizens and patients through quality, monitored and evaluated training in Health

HEALTH

- Identify present and future population health needs, estimate Health services requirements to meet them and anticipate the number and profile of professionals to meet these needs
- Consistently monitor number of students and curricula and evaluate the results
- Look for the support of higher levels of policy administration
- Promote study centres of applied sciences to open cooperation between Health and Knowledge centers
- Set public-private-people partnership models, open innovation ecosystem that integrate research and innovation processes
- Promote multidisciplinarity
- Ensure availability of professionals, not only in the medical branch but also in health management, public and business administration, etc.
- Promote the inclusion of simulation experiences and living labs in the official curricula
- Promote the inclusion of health care studies to qualify professionals in secondary and vocational training as well as life-long learning

BUSINESS

- Inform companies about curricula plans at local level, number of students in different disciplines and the existing labor force profile of the city
- Develop indicators to understand trends and estimate future requirements of professionals in the private health sector and industry
- Assess the availability of the actual trained workers to meet Health Services needs
- Implement policy measures involving different Municipal services and departments to attract young people and students to the near or local universities and training centers
- Facilitate interaction between companies – specially SMEs – and knowledge and research institutions to develop meaningful products
- Manage intellectual property through contacts with companies to protect their good work within an open source context
- Set local research agreements and incentives
- Design a local policy around patents and intellectual property
- Foster the entrepreneurship from the University and other training centres by means of providing expert advice, organizing business promotion activities for students, seminars, gatherings, etc.
- Promote students vocational training within the business sector to increase employment rates
- Invest in knowledge and business sectors to create Health science parks
- Promote new training centers and appropriate curricula in areas in which companies need work force
- Provide the right professional retraining and life-long learning through the educational offer to match the health sector needs in the city
The Briefing is a summary of the project and it is especially addressed to policy makers and managing authorities. The document demonstrates the importance of promoting innovation in health nowadays and the need to create the conditions that make it possible as it is an engine of economic growth. In fact, the European Commission has already identified Health Innovation in this sense.

Video “What is 4D Cities?”

This is the title of the project’s first video. The 8 minutes film introduces generally what the 4D Cities is about and what are the eight European cities that integrate it.

We are going to produce five more videos: four of them to delve into each of the thematic axes and, finally, a last one to pick in the conclusions. All of them can be found at Youtube and Vimeo project channels. On top that, this first video can also be seen on the homepage of our website.

In the first part of the video “What is 4D Cities?”, the Project Lead Àngels Chacón; the Thematic Expert Enric Macarulla; and the Lead Expert Mireia Sanàbria, explain the project as well as the methodology that it follows.

In the second part, a representative from each city responds briefly to the question “Why your city is involved in the 4D Cities?”. Thus, in addition to giving the voice to all members, we have the opportunity to know them better.

The left of this column contains a frame for each of the interventions.
The **Output** or **Thematic Reports** are a set of reports that collect the main data of interest extracted from the good practices exposed in the transnational meetings, work sessions groups, visits and other.

We are going to elaborate one for each dimension of the project. The first of them, focused on the Business sector, can already be found on the “Our Outputs” section on the web.

The **Mapping**, subtitled “Local policies and tools to promote citizens’ centred health innovation with an economic growth”, is shaped in the form of action areas where the local government can undertake activities to promote relations and collaboration among Health Innovation stakeholders, namely Health professionals, Citizens and patients, Business companies and Knowledge institutions.

A number of integrated policies and cross-sector interactions can be fostered with the aim of promoting a new Health system that boosts economic growth while at the same time improves quality of care services for the patients.

Many of the interactions proposed in this mapping exercise include best practices to illustrate them with practical examples.

The **Matrix of sector to sector engagement** is a collection of measures and tools to facilitate the implementation of actions. More specifically, it consists of a set of indicators that presents, in a grading exercise, the different specific measures actually contained in the Mapping but organized according to increasing levels of development and stakeholders’ involvement.
The general and digestive surgeon, head of the Research and Teaching Department of the Igualada General Hospital and University teacher, Enric Macarulla, analyzes the current training of health professionals and points out how to improve it to increase the efficiency and safety of their impact on reality. What are their lacks? How can be solved? Who can contribute?

Before going on, it is essential to specify what exactly means ‘knowledge in health sector’. In the health field, not only in relation to the professionals involved but also in the patients and their caregivers, we should talk about “competences” rather than “knowledge”. Within the concept of “competences” we can include those capabilities that enable all stakeholders, especially the professionals, carry out their work with the highest quality and efficiency. This fact is not possible only with the theory, but requires adequate skills and attitudes.

The integration between all the institutions that develop training of health professionals is scarce. Competences defined in each of the learning phases (degree or vocational training, master or specialization and, finally, life-long learning) are individual and, often, there are little appropriate contents, repetitive and contradictories.
A transversal coordination during the acquisition of professional skills would enable a better quality and, specifically, more security in the health area. In addition, it would also give rise to the involvement of patients and a training closer to day-to-day, identifying new content such as digital medical history and the ICT management (Information and Communication Technologies). On the other hand, it would offer a more significant involvement of non-technical skills such as teamwork, ethics and professionalism. This would lead to a lower impact of the human factor in a too technologic learning.

The strengths in the acquisition of professional skills are related to the attempt of a professionalization of the education and training from the very beginning. This is done through a definition of training plans that focus on the acquisition of these skills, instead of providing contents that are not relevant for the practice or not totally clear. Greater coordination between the training plans at different stages with an aim of a positive impact for the patient would allow for a more efficient training and, in turn, increase the learner’s involvement.

The participation of all health sector stakeholders, and not just some of them, would generate better tracking of professionals from a training standpoint. The low contribution of the real environment where these professionals carry out their work, such as the various health facilities (hospitals, primary care, community care, home care, outpatient), implies a very biased assessment of the performance of these professionals. The real implication of the institutions and, especially, of the people (professionals and patients) in the health field, would allow a definition that is more efficient, safe and close to the real needs of professionals.

4D Cities project can be very useful in the sense of, precisely, provide the conditions so that those involved in the health day-to-day meet and work in the improvement of management of this area. Formed in Local Support Groups, they analyze the impact that the sector currently has on people with the roles of patients, caregivers, professionals and citizens. Strategies agreed between all stakeholders will help to better identify training deficiencies of individuals and institutions closely related. Thus, proposals will be more integrative designed and the team, now composed and competent, will be more involved.

### 4D CITIES LOCAL SUPPORT GROUPS

Each project’s city member has a different drawing of the key players in the field of Health Innovation. For this reason, the members’ selection for each Local Support Group responds to the intrinsic characteristics of its territory. However, in general terms, we identify the following collectives grouped into the 4D Cities four dimensions:

#### Knowledge
- Universities
- Research centres
- Vocational training centres

#### Health system
- Hospitals
- Primary care centres
- Residential and elderly centres
- Red Cross and other civic associations
- Health Professional Associations

#### Citizens
- Patients
- Associations of patients
- Relatives, caregivers and volunteers
- Users of health facilities

#### Business
- Business associations
- Chambers of commerce
- ICT companies
- Research & Innovation companies
- Health Insurances
- Social enterprises
The doctor and expert in the fields of university education and research, Josep Ribas, reflects on the skills that health professionals should acquire to ensure their best possible preparation. It also puts on the table the future challenges of the sector institutions.

What are the criteria of university policy to adapt training to the professional needs of health sector?

All higher education institutions are concerned about students acquiring knowledge and skills during the training period that are essential for their professional praxis, when they graduate and access the workplace. This statement applies to all disciplinary areas, although it is also true that in health curricula this concern has been, and still is, more evident and for longer. Among other reasons, because health studies are very professionalizing, ie they are identified with very specific professions of
high social impact while, actually, the majority of graduates want to exercise them vocationally.

In Catalonia, this was not the traditional fact in University studies and, certainly, the need to adapt them to the European Higher Education Area in the mid 2000s represented a real and theoretical change of the training and learning model. Since then, it is common to speak of ‘competences’ instead of ‘knowledge’, defined as a dynamic combination of attributes in relation to the attainment of knowledge, skills, attitudes and responsibilities that have to show the learning outcomes of an educational program toward the ability to carry out activities in a profession or job. And all this, focused on the efficient learning of the students and not in the teacher figure.

"Since mid 2000s, there is a change in the training and learning model. It is common to speak of competences instead of knowledge"

Can you detail the most required needs in the training of future health professionals?

Undoubtedly, one of the main concerns of those responsible for the training of future health professionals should be training them making them assume and internalize that medical and health knowledge double every 5-10 years and, consequently, their initial training received has a date of expiry. It extends to all areas, but in health it is essential the paper that conducts life-long learning and the need for periodic accreditation based on current adapted skills.

Answering the question, I think it is growing in all stakeholders and, therefore, also in education, the concern for the safety of the patient in the hospital and outpatient setting. In my opinion, this question concerns the efficiency of the initial university studies, especially the practical training of students, and if it is sufficiently preparing the graduates who will have to face the health profession. Secondly (although we are slowly improving digital skills of our society, particularly among the youth), it also concerns the adaptability of health professionals in ICT and the intensive use of these tools in practice.

In this sense, the simulation is an emerging tool which, besides ensuring an efficient and continued form of training, protects patient safety. In Catalonia, we suffer a certain delay in the integration of these techniques in the training of health professionals. However, it is true that it requires technologically advanced facilities and innovative educational methodologies that have proven to be efficient without jeopardizing the patient. Speaking of learning through simulation, I mean a self-review of all actions taken (and, therefore, the essential knowledge and skills to carry them out) during a clinical experience conducted by a professional that gives the opportunity to learn by correcting the own and all kinds of mistakes in the daily clinical praxis.

"In health, life-long learning and periodic accreditation based on skills are essential"

"The concern for the patient safety questioned the efficiency of training"

"It also concerns the adaptability of health professionals in ICT and their intensive use in practice"

On what principles should be inspired the upcoming reform of the educational processes on health?

I think that many people who work in this field have the aim to generate learning programs with a higher quality of the received education, most comparable to the international standards of the leader education systems and further based on future professional competences. Through the imaginative use of ICT, we want to enable new flexible and creative professionals, while at the same time to overcome the health professions’ configuration that enormously limited the work in multidisciplinary teams in certain professional settings.

We have to better adapt to the local needs and problems and also take more advantage of the global resources, knowledge and experiences, from the international arena, which are indispensable in the initial stages of the formative cycles. It is essential to move in the world (also for University students) and personally know how others – probably in a better and more efficient way– solve the same problems that we have in our institutions.

We need to be more persistent in values education too. It goes beyond knowledge of ethical codes and good praxis, as they have to incorporate the development of value judgments for their contextualized application. And, obviously, we need to continue putting emphasis on those essential non-technical skills such as teamwork, leadership, communication between professionals and patients and their relatives...
Our main challenge is the development of our teachers, who should be able to evolve towards more flexible and internationalized structures, more adaptable to the changing needs, with better quality and with teaching and research profiles more suited to international standards.

What should be the fit of the different centres involved in health education?

As the question implies, it is unthinkable to imagine a learning process suitable for health professions that do not deem and involve institutions with different purposes.

Universities (faculties and health sciences schools), hospitals and health institutions are indispensable for mastering. It has been acknowledged the need to make the learning processes available all along the professional live, involving representative institutions of care professionals and associations in the education path. However, more recently, it has gained importance the need to build and strengthen structures that provide more value to the collaboration and coordination in the building and knowledge transfer.

Surely, this involves the centres of fundamental research applied in the life sciences and health, public and private organizations working to enable a greater transfer of technologies and knowledge and, also crucial, an involvement with all the schools, public and private, that are innovating in processes, both training and applied to research and development. This type of diverse and institutional centres that create knowledge have been increasingly relevant. Also the networks that have woven all these institutions and their teams.

What is your assessment about the Catalan health training institutions and R&D in the international context?

There are several scientific areas in which Catalonia plays an important role in the European context. Science of life and health is one of them, where we have University faculties, healthcare institutions, public and business R&D centres, teaching and research human resources, as well as some learning programs and R&D projects highly competitive internationally. This is guaranteed for the results accrued throughout this network of people and organizations in various competitive calls for projects, the impact factor of scientific publications of certain research teams, and the success by attracting talented highly qualified researchers and staff with training abroad through international calls. The very positive assessment of some of these research centres (CERCA centres) with unique characteristics in the R&D system have enabled them to achieve outstanding levels of excellence. Their flexible governance, an attractive environment and a commitment to scientific excellence, strengthened by international scientific advisory committees and regular assessments, are some of these features.

To continue improving in the majority of public health schools and centres we should transform their governance as much as possible. This will make the qualitative leap reached by research centres and facilitate the achievement of better verifiable results.

““It is unthinkable to imagine a learning process that does not involve institutions with different purposes”

JOSEP RIBAS i SEIX, biography

Josep Ribas is formed in medicine and is specialist in digestive system. After some years of hospital clinical practice in Barcelona, he combines this task participating in the first structures of the Government of Catalonia to articulate an own Research policy through the Institute of Catalan Studies (Research White Paper) and, later, from the Department of Education and the CIRIT.

In 1993 he joins the General Direction of Universities as Deputy Director and assumes responsibilities in the areas of university programming and its adaptation to the European Higher Education Area, university funding, universities quality academic improvement and the transparency of results (program contracts), the definition of an own model of university professors (Serra Hunter Plan) and the internationalization of universities. He is appointed General Director of Universities between 2009 and 2011.

Currently he is returned to the position of Deputy Director of Universities in the Secretary of Universities and Research. He is a member of several boards and governing bodies of universities and research of Catalonia.
Last meetings

5th Transnational meeting #LocalActionPlan
Novara, 17-18 February 2014

After four thematic meetings, this one has allowed to identify the strengths and weaknesses of each city Local Action Plan and enrich them with contributions from everyone. In addition, it helped to highlight some of the issues that partners would need to go more in depth in order to have more tools to design their collection of actions.

Agenda

6th Transnational meeting
Plunge, 26-27 May 2014
Meeting to deepen in specific aspects

7th Transnational meeting
Tartu, 16-17 September 2014
Local Action Plans review

Last Transnational meeting
Igualada, 2015 (dates to be specified)
Last project meeting in the Lead Partner city

April, on URBACT home

Each month, URBACT highlights one of the program’s projects on the www.urbact.eu website main page. The promotional campaign began in April with the 4D Cities. In the second slide of the slideshow, it could be seen the name, slogan and image of the project linked to the mini-site.

Back to the origins...

Among the Jena’ visits, we went to the Ernst Abbe Fachhochschule, the University of Applied Sciences. The presentation of training programs in the health sector was held in the Auditorium and gave images like this, in which the partners sat down again in the stalls reserved for students.
Subscribe for the 4D Cities Newsletter: send an email to communication@4dcities.eu

More information:
www.urbact.eu/4dcities

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URBACT is a European exchange and learning programme promoting sustainable urban development. It enables cities to work together to develop solutions to major urban challenges, reaffirming the key role they play in facing increasingly complex societal challenges. It helps them to develop pragmatic solutions that are new and sustainable, and that integrate economic, social and environmental dimensions. It enables cities to share good practices and lessons learned with all professionals involved in urban policy throughout Europe. URBACT is 500 cities, 29 countries, and 7,000 active participants.

4D Cities is an URBACT project that aims to develop cities through the interaction of the actors which operate in the fields of Health and Innovation such as the knowledge, the healthcare system, the business and the citizens. It involves 8 European cities that would like to create a new productive sector which contributes to the diversification and enhancement of the economic activities and social cohesion of their territories. The partners are Igualada (Catalonia, Spain) as a leader, Leeds (United Kingdom), Novara (Italy), Tartu (Estonia), Plunge (Lithuania), Brainport Eindhoven Region (Netherlands), Business Development Corporation of Jena (Germany) and Baia Sprie (Romania).

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