European Commission

European Cluster Observatory

REPORT

Priority Sector Report: Health

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Internal Market, Industry, Entrepreneurship and SMEs

European Cluster Observatory in Brief

The European Cluster Observatory is a single access point for statistical information, analysis and mapping of clusters and cluster policy in Europe. It is primarily aimed at European, national, regional and local policy-makers and cluster managers and representatives of SME intermediaries. It is an initiative run by the 'Clusters, Social Economy and Entrepreneurship' unit of the European Commission's Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs and aims to promote the development of more world-class clusters in Europe, notably with a view to promoting competitiveness and entrepreneurship in emerging industries and facilitating SMEs' access to clusters and internationalisation activities through clusters.

The ultimate objective is to help Member States and regions to design smart specialisation and cluster strategies that will help companies to develop new, globally competitive advantages in emerging industries through clusters, and in this way to strengthen the role of cluster policies in boosting Europe's industry as part of the Europe 2020 Strategy.

In order to support evidence-based policy-making and partnering, the European Cluster Observatory provides an EU-wide comparative cluster mapping with sectoral and cross-sectoral statistical analysis of the geographical concentration of economic activities and performance. The European Cluster Observatory provides the following services:

- a biannual **'European Cluster Panorama' (cluster mapping)** providing an update of and extension to the statistical mapping of clusters in Europe, including for ten related sectors (i.e. cross-sectoral) and a correlation analysis with key competitiveness indicators;

- a **'European Cluster Trends' report** analysing cross-sectoral clustering trends, cluster internationalisation and global mega trends in industrial transformation; identifying common interaction spaces; and providing a forecast for industrial and cluster opportunities;

- a **'Regional Ecosystem Scoreboard'** setting out strengths and weaknesses of regional and national ecosystems for clusters, and identifying cluster-specific framework conditions for three cross-sectoral collaboration areas;

- a **'European Stress Test for Cluster Policy',** including a self-assessment tool accompanied by policy guidance for developing cluster policies in support of emerging industries;

- a **showcase of modern cluster policy practice, provided in the form of advisory support services to six selected model demonstrator regions**. The services offered include expert analysis, regional survey and benchmarking reports, peer review meetings and policy briefings in support of emerging industries. The policy advice also builds on the policy lessons from related initiatives in the area of emerging industries;

- the European Cluster Conferences 2014 and 2016, which bring together **Europe's cluster policy-makers and stakeholders** for a high-level cluster policy dialogue and policy learning, and facilitate exchange of information through, e.g. webpages, newsletters and videos.

More information about the European Cluster Observatory is available at the EU cluster portal at: http://ec.europa.eu/growth/smes/cluster/observatory/.

Internal Market, Industry, Entrepreneurship and SMEs

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1. Introduction

Health is one of the key aspects of high prosperity and social progress. Societies that are aging and achieving rising levels of GDP per capita have seen the demand for health-oriented products and services grow significantly. Health is thus a key and growing part of the modern economy. It provides significant opportunities for individuals, firms, and regions, with growing employment and relevance in regional GDP. It is also one of the key thematic orientations of applications and selected cluster projects for new industrial value chains (INNOSUP-1) under Horizon2020 and of the thematic priorities of regional smart specialisation strategies.

Health is also a sector where improvements in efficiency and effectiveness will be critical to be able to provide health care that remains affordable while meeting the expectations of society. Innovation is going to be a central part of the health sector going forward. Technical and science-driven innovation will have its role, and is already attracting a large part of European R&D activities. But new business models, value chains, and service concepts will be as important.

Health is an important factor in pretty much all European regions. This is a reflection of its nature as a largely local set of industries. There is limited direct competition of health care services across regions. The central aim, then, is to enhance the efficiency of health care provision across Europe by building on the dynamics and networks that exist locally. This can then also lead to service concepts and other offerings that can be 'exportable', with firms entering other regions to apply approaches that they have developed in their home market. This offers new economic opportunities alongside the more established markets for health tourism and health-related products and devices.

Since Health plays an important role in all regions, and the delivery of the services tends to require a physical presence of both the medical staff and the patient in the same location, the sector is rather evenly spread across Europe. In fact, the vast majority of Health employment is contained in the industries classified as local in the main cluster classification and would thus not be captured by the standard cluster categories. We have thus relied on the structure of the NACE classification to select all the relevant healthcare-delivery industries, and complemented this list with key related industries like pharmaceuticals and medical devices.
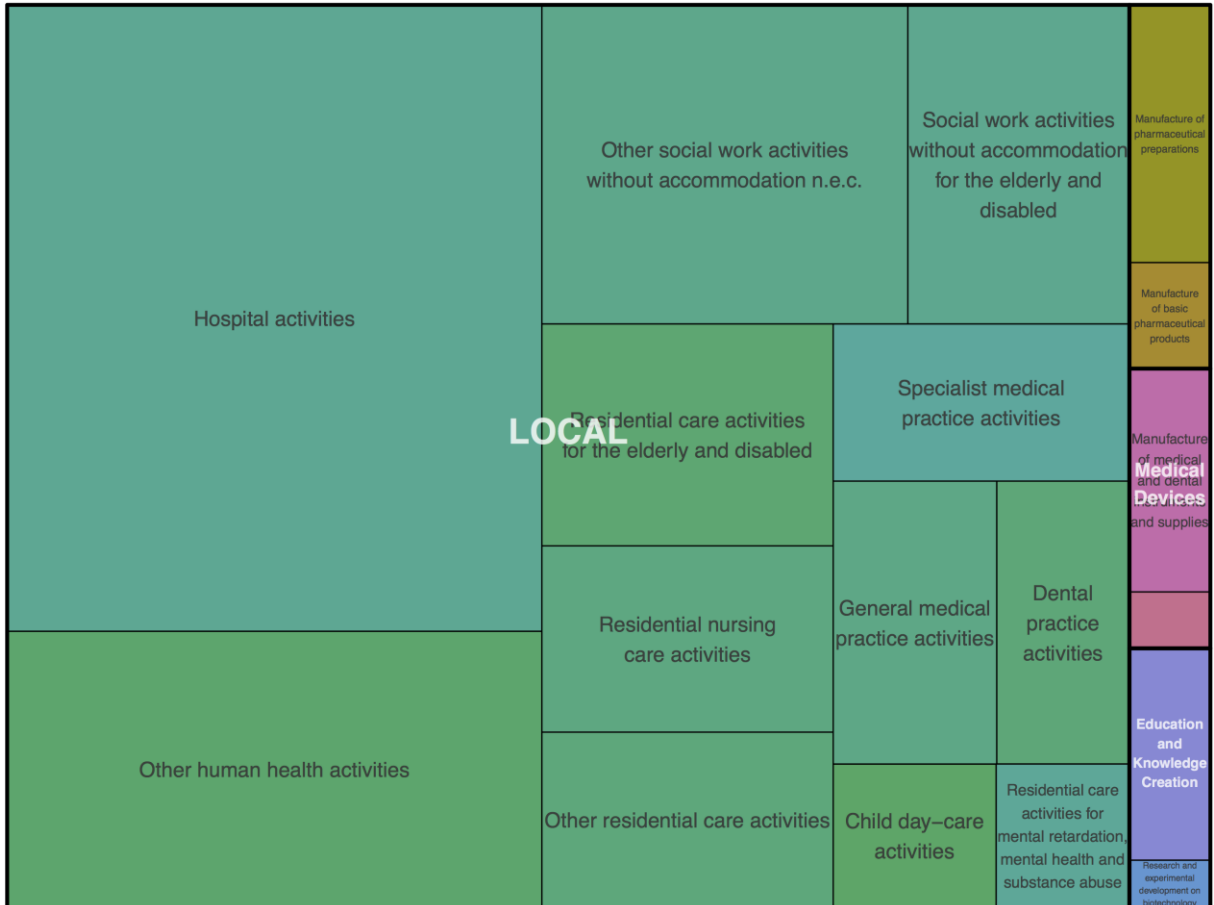
2. Overview

Table 1: Basic Facts on Health Industries

Indicator	Level in 2014	Change since 2008	Share of overall economy
Employment	27 884 509	18.96%	9.56%
Establishments	2 042 274	23.20%	3.63%
Average Wage	35 950	4.81%	111.85%
Gazelle Employment	272 426	N/A	6.48%

3. Composition

Figure 1: Health Industries industry composition[1]

Table 2: Occupational profile of employment in Health Industries

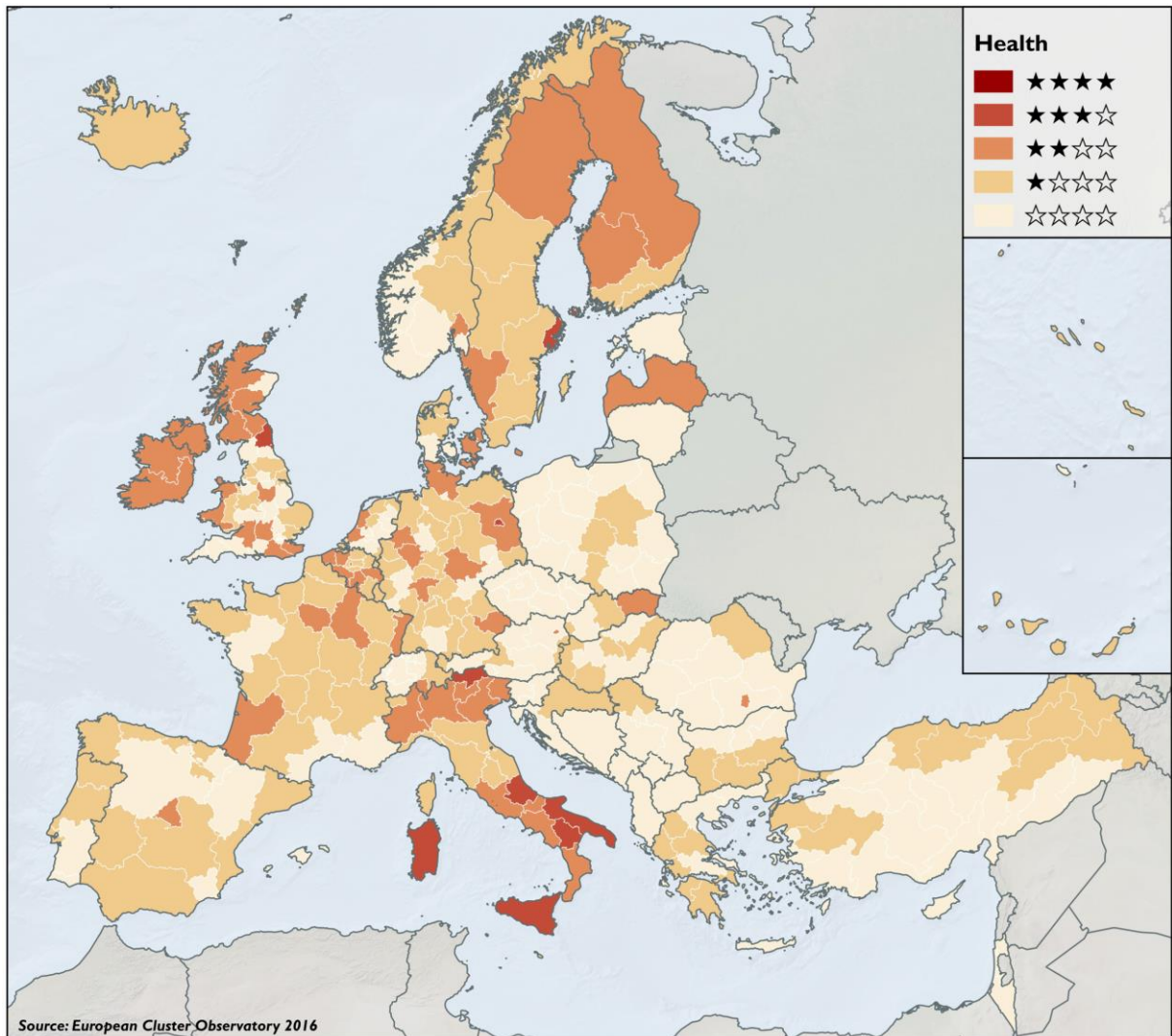| Occupation	Employment	Employment share	Overall employment share
Officials, Managers, Proffessionals, Technicians	15 665 200	64.7%	43.9%
Health Associate Professionals	5 056 000	20.9%	3.6%
Health Professionals	4 837 700	20.0%	3.5%
Other	5 771 600	23.8%	36.8%
Service, Sales, Elementary	6 370 600	26.3%	25.4%
Personal Care Workers	4 536 300	18.7%	3.8%
Other	1 834 300	7.6%	21.6%
Clerks	1 318 000	5.4%	9.0%
Craft, Trade, Operators, Assemblers	853 200	3.5%	21.7%

4. Current Patterns and Leading Regions

Table 3: Europe's top locations[2] in Health Industries

#	Region	Region Name	Largest City	Employment	LQ	Avg. Wage, PPP	Annual Growth	Gazelle Empl. Share	Stars
1	DE30	Berlin	Berlin	489 478	2.53	31 137	62.7%	0.4%	3
2	ITF5	Basilicata	Potenza	41 620	2.16	50 655	70.7%	0.3%	3
3	ITG2	Sardegna	Cagliari	108 419	2.05	52 789	28.2%	0.8%	3
4	ITH1	Bolzano	Bolzano	54 999	1.85	63 657	137.7%	0.0%	3
5	FI20	Åland	Mariehamn	10 148	1.79	50 449	926.1%	3.2%	3
6	UKC2	Northumb and Tyne and Wear	Newcastle	144 261	1.74	29 871	25.5%	1.1%	3
7	ITF4	Puglia	Bari	198 417	1.69	54 640	21.8%	0.7%	3
8	ITG1	Sicilia	Palermo	231 303	1.69	57 747	11.9%	0.7%	3
9	ITF1	Abruzzo	L'Aquila	83 328	1.67	55 228	64.3%	0.3%	3
10	SE11	Stockholm	Stockholm	146 370	0.98	50 581	12.8%	10.0%	3

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[2] *We sort locations here and in all following sections by the number of stars, followed by LQ*
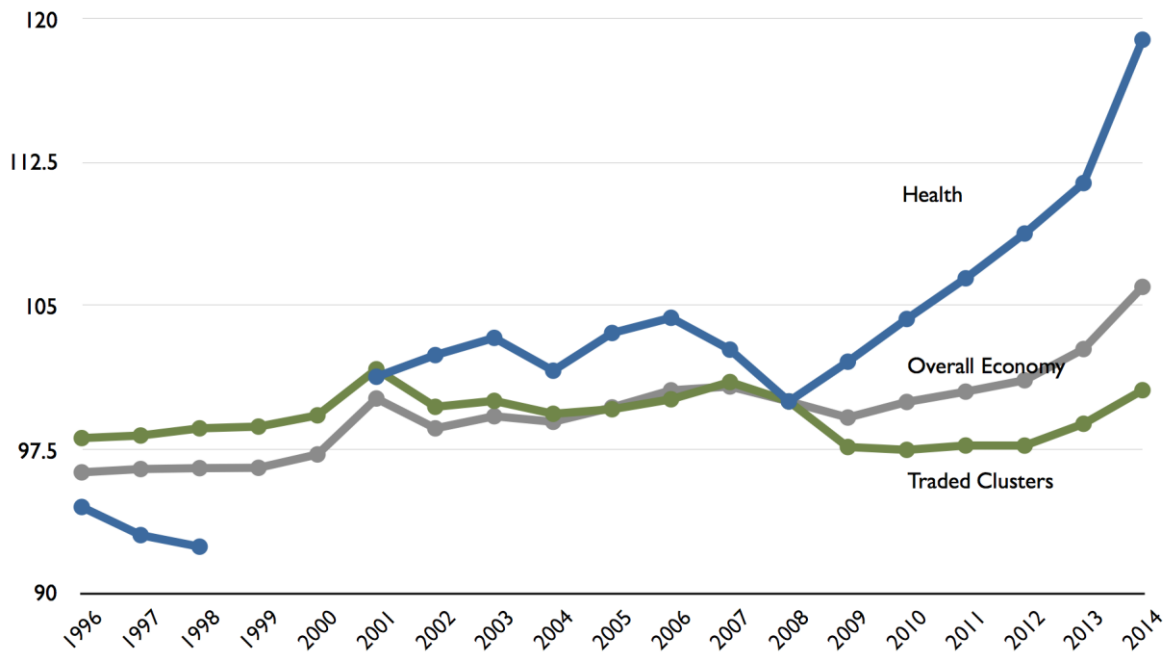
Figure 2: Leading regions in Health Industries

Source: European Cluster Observatory 2016

Table 4: Strategic profiles of top locations in Health Industries

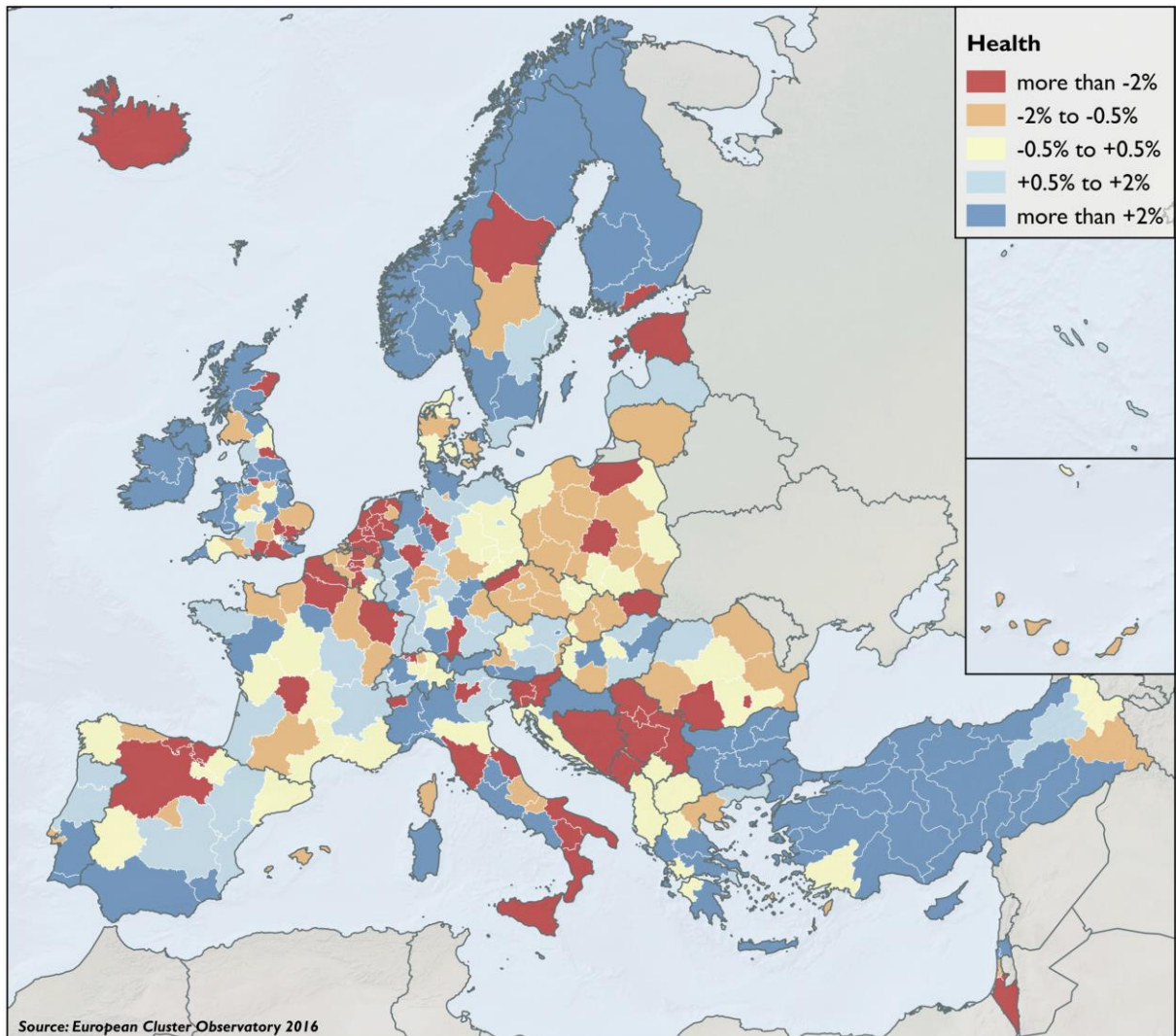| Region	Region Name	Largest City	Top 3 Occupations
DE30	Berlin	Berlin	32 Health Associate Professionals 26 Legal, Social and Cultural Professionals 22 Health Professionals
ITF5	Basilicata	Potenza	53 Personal Care Workers 83 Drivers and Mobile Plant Operators 34 Legal, Social, Cultural and Related Associate Professionals
ITG2	Sardegna	Cagliari	53 Personal Care Workers 32 Health Associate Professionals 34 Legal, Social, Cultural and Related Associate Professionals
ITH1	Bolzano	Bolzano	53 Personal Care Workers 32 Health Associate Professionals 41 General and Keyboard Clerks
FI20	Åland	Mariehamn	32 Health Associate Professionals 53 Personal Care Workers 22 Health Professionals
UKC2	Northumb and Tyne and Wear	Newcastle	53 Personal Care Workers 22 Health Professionals 34 Legal, Social, Cultural and Related Associate Professionals
ITF4	Puglia	Bari	32 Health Associate Professionals 53 Personal Care Workers 23 Teaching Professionals
ITG1	Sicilia	Palermo	53 Personal Care Workers 32 Health Associate Professionals 34 Legal, Social, Cultural and Related Associate Professionals
ITF1	Abruzzo	L'Aquila	32 Health Associate Professionals 53 Personal Care Workers 23 Teaching Professionals
SE11	Stockholm	Stockholm	53 Personal Care Workers 22 Health Professionals 26 Legal, Social and Cultural Professionals

5. Evolution

Figure 3: Employment over time, 1996-2014 (2008=100)
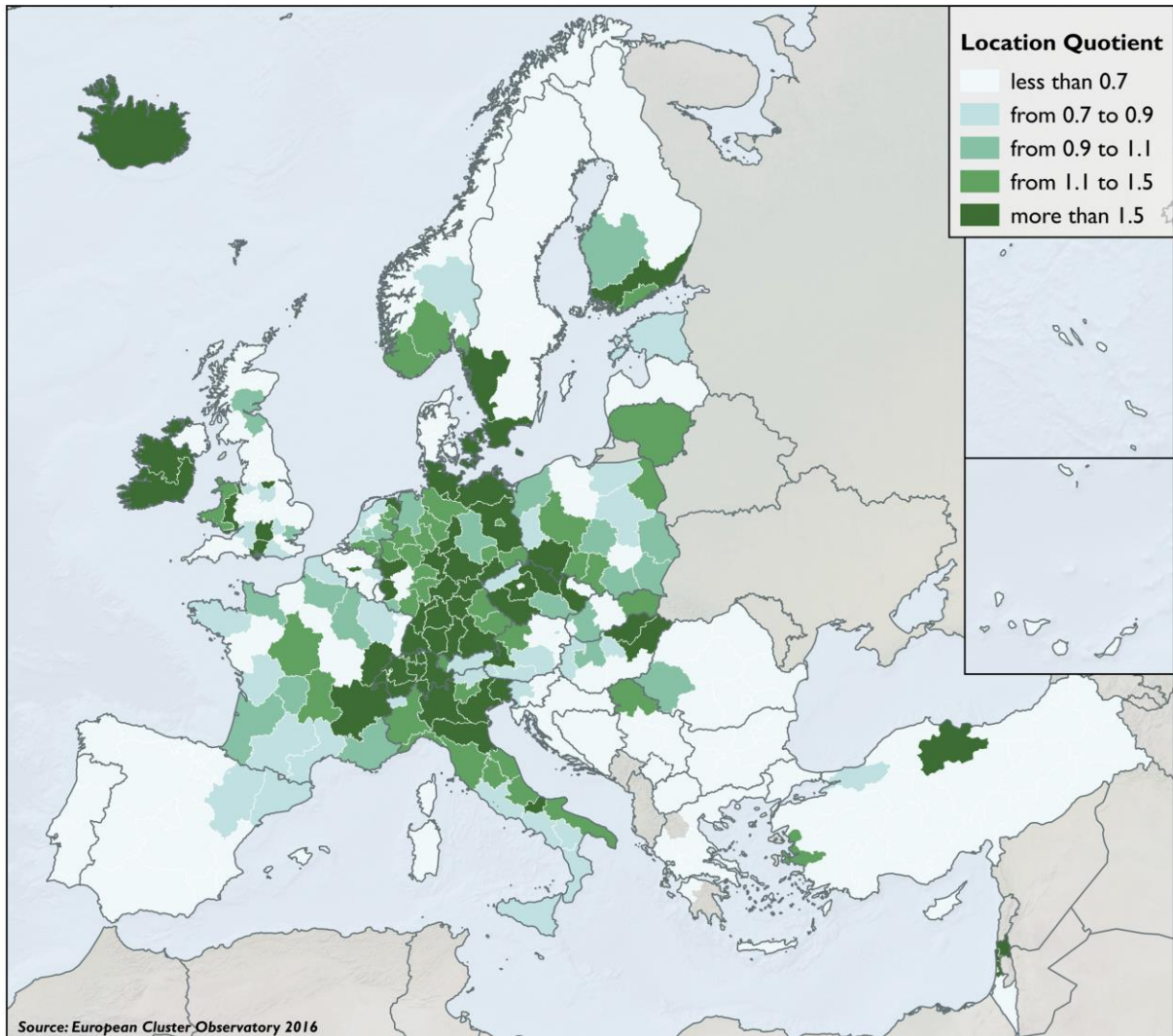

Note that there is a break in time series in 2008: all data prior to this date was sourced from the dataset in prior version of the European Cluster Observatory and adjusted to be compatible with the current dataset.

Figure 4: Annual Growth in Health (2008-14)

Source: European Cluster Observatory 2016

6. Sub-cluster Profile: Medical Devices

Figure 5: Regions most specialised in Medical Devices

Location Quotient

- less than 0.7
- from 0.7 to 0.9
- from 0.9 to 1.1
- from 1.1 to 1.5
- more than 1.5

Source: European Cluster Observatory 2016

Medical devices are one of the few elements of the health sector that are a 'traded' industry. It is significantly concentrated in a range of European regions, with firms that tend to serve European or even global markets. The geographic patterns of strengths in medical devices are largely uncorrelated to strengths in health services. This might reflect that the local needs medical device firms have in terms of skills, suppliers, and other types of inputs are very different from the rest of the sector. In this case it is still important for regions with significant health activities to identify European partners in medical devices for which they could be a counterpart in terms of test-beds and the development of application models.

7. Selected Cluster Initiatives in Health

Advanced cluster policies conducive to successfully implement regional innovation strategies do not only provide funding to cluster initiatives or cluster organisations but rather offer a broad set of policy choices to support the entire framework conditions of the actors in given regions. Such a policy approach aims to improve cluster-specific business environments that provide optimal conditions for companies in related industries to raise their productivity and innovation. Creating platforms for collective action within clusters through cluster organisations can help companies from different sectors to innovate better and exploit their business opportunities. Cluster organisations can in turn also be a major partner for the government to design and implement effective policies for upgrading cluster-specific business environments. However, strong cluster organisations are necessary, managing their cluster in an excellent manner and being able not only to take up but to proactively influence the regional social and economic development, fully integrated in all relevant communities, the policy making, the industrial, the academic, and other relevant ones.

Being awarded with a quality label of the European Cluster Excellence Initiative is a justification for strengths. In the following sector-related cluster initiatives are listed where the cluster organisation is holding such a label. Furthermore, two of the GOLD-labelled cluster initiatives are shortly described to give an idea of their set-up and interesting activities and their effects.

Cluster Management Excellence Label GOLD – Proven for Cluster Excellence

Name	Country	www
Alsace BioValley	France	http://www.alsace-biovalley.com
Biopeople - Denmark's Life Science Cluster	Denmark	http://www.biopeople.dk
bioPmed - Piemonte Healthcare Cluster	Italy	http://www.biopmed.eu
Life Science Nord	Germany	http://www.lifesciencenord.de
LYONBIOPOLE	France	http://www.lyonbiopole.com
Medicon Valley Alliance	Denmark	http://www.mva.org
Minalogic	France	http://www.minalogic.com/
Oslo MedTech	Norway	http://www.oslomedtech.no
TICBioMed	Spain	http://www.ticbiomed.net
Welfare Tech	Denmark	http://www.welfaretech.dk/

Cluster Management Excellence Label SILVER – Dedicated to Cluster Excellence

Name	Country	www
BIOIB Cluster biotecnològic i biomèdic	Spain	http://www.bioib.org
BioLAGO e. V.	Germany	http://www.biolago.org
Biopark Regensburg GmbH	Germany	http://biopark-regensburg.de/
BioRegioSTERN Management GmbH	Germany	http://www.bioregio-stern.de/
BTM Cluster Mazovia	Poland	http://btm-mazowsze.pl
Forum MedTech Pharma e.V.	Germany	http://www.medtech-pharma.de
Medical Valley EMN	Germany	http://www.medical-valley-emn.de/

TICBioMed – delivering eHealth business support

	Website	www.ticbiomed.org
	Established	2010
	Cluster participants (2017)	Industry 58, R&D 4, Others 3
	Region	Murcia, Spain
	Cluster Manager	Jorge Gonzalez

TICBioMed is a cluster of companies, universities, technological centres, healthcare providers and public institutions that work together to foster innovation in eHealth (ICT for Health). Its ultimate goal is to improve the life quality of patients and citizens through the adoption of digital technology by Health and Care organisations across Europe.

The cluster specialises in delivering business support to entrepreneurs, startups and SMEs, mainly through the coordination of projects such as "eHealth Hub", an EU funded initiative that offers free business support to eHealth companies. The aim is to help SMEs to improve their competitiveness by supporting them with their business model, commercialisation strategy and access for private investment, together with legal and regulatory guidance. Besides, some cluster staff provides business coaching to initiatives like SME Instrument.

The cluster on a yearly basis organises the "SME EU eHealth Competition", that gives recognition to the best European eHealth solutions developed by SMEs. The winners obtain visibility and marketing opportunities to attract customers, partners and external capital. The competition is organised with the support of several European clusters and associations that help to recruit and evaluate the best small companies in digital health.

Regarding actions to promote the demand side within the Health and Care market, TICBioMed organises the "eHealth Adoption Awards" that recognise the work of adopters and their technological suppliers in implementing eHealth solutions.

The cluster also participates in the H2020 project "ProEmpower" that will launch a public tender of € 3 million to procure a population management information system to support patients with diabetes type 2.

Finally, TICBioMed aims to bridge between pharma and digital health startups to set up a new relationship model based on the mutual exchange of value and geared to obtain economic returns, as these two very different type of organisations have a lot of potential synergies. In this framework, TICBioMed managed the "MSDInnovationfactory" initiative that challenged digital health companies to solve opportunities identified by MSD, a global pharmaceutical company.

Welfare Tech - Innovation Network for Health and Welfare Technology

WelfareTech Business Innovation	**Website**	www.welfaretech.dk
	Established	2010
	Cluster participants (2016)	Industry 137, R&D 18, Others 55
	Region	Denmark
	Cluster Manager	Christian Graversen

As a national cluster in Denmark, Welfare Tech operates as a hub for innovation and business development in healthcare, homecare and social services. The aim is to promote business opportunities and collaboration between members and business partners from the private industry, public organisations as well as research and education institutions. Welfare Tech concentrates on five focus areas related to healthtech and hometech. The relevant technologies and fields of innovation for these sectors are:

- Preventive Health Innovation

- Hospital & Health Innovation

- Rehab Innovation

- Social Services

- Healthy Ageing

The Welfare Tech cluster comprises innovative Danish companies and public institutions. The coherence between the members makes Welfare Tech a national entry point for companies who want to enter the Danish and European market. Welfare Tech matches new ideas and insights with demands and requirements from hospitals and municipalities to the benefit of companies and public institutions.

Danish products and services related to health and welfare are promoted to increase their commercialisation and export. The solutions are developed with knowledge and skills from academia and professionals working in hospitals and care facilities in municipalities.

An additional source of input for solution development is the growing demand for technologies and services capable of helping citizens with health and welfare needs to sustain the greatest possible independence. There is a particular focus on patients discharged from hospital with a need for continued supervision of their health or in need of rehabilitation and special care after a period of illness or decreased mobility.

The focus on independent living also supports development of new solutions for private citizens, meaning development and application of solutions for treatment and care with the aim to increase the quality of life for the individual person.

The cluster drives cooperation, knowledge-sharing and networking for its members and the broader ecosystem for healthtech. Activities within the cluster enhance the companies' ability to develop and market solutions based on the latest knowledge about national and international needs for technology.

Appendix: Industry Definition

Industry Code	Industry Name
21.10	Manufacture of basic pharmaceutical products
21.20	Manufacture of pharmaceutical preparations
26.60	Manufacture of irradiation, electromedical and electrotherapeutic equipment
32.50	Manufacture of medical and dental instruments and supplies
72.11	Research and experimental development on biotechnology
72.19	Other research and experimental development on natural sciences and engineering
86.10	Hospital activities
86.21	General medical practice activities
86.22	Specialist medical practice activities
86.23	Dental practice activities
86.90	Other human health activities
87.10	Residential nursing care activities
87.20	Residential care activities for mental retardation, mental health and substance abuse
87.30	Residential care activities for the elderly and disabled
87.90	Other residential care activities
88.10	Social work activities without accommodation for the elderly and disabled
88.91	Child day-care activities
88.99	Other social work activities without accommodation n.e.c.

For further information, please consult the European Cluster Observatory Website:

http://ec.europa.eu/growth/smes/cluster/observatory/

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