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Executive Summary

One of the aims of the CONNECTINGHEALTH project is to explore the opportunities for the digital health industry in Europe and beyond. While the D2.2 looks into the future of digital health, this paper explores the opportunities across the five domains of health: public, urban, environmental, occupational and mental health.

The paper combines the knowledge collected by partners by analysing the five domains of health, and the survey with the stakeholders representing the various domains of health.

The goal is to provide a concise and practical overview that informs about the variety of opportunities and areas that provide chances for growth. The recommendations in this paper aim to help policymakers, and both public and private stakeholders to better understand and benefit from the opportunities presented by digital health in the future. The findings and recommendations will also be used to inform the activities of the international consortium and the national/regional digital health initiatives, future co-operations, future projects and fundings.

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List of Acronyms

ECHA	European Connected Health Alliance
SCOTENT	Scottish Enterprise
PBN	Pannon Business Network Association
SeAMK	Seinajoki University of Applied Sciences
CONNECTINGHEALTH	Connecting the dots within digital health innovation ecosystems project
EU	European Union
UK	United Kingdom
HU	Hungary
WP	Work Package
AI	Artificial Intelligence
VR	Virtual Reality
GDPR	General Data Protection Regulation (Regulation (EU) 2016/679)

1. Project information

1.1 CONNECTINGHEALTH Project Overview

The COVID-19 pandemic changed the world and healthcare, demonstrating the potential of new solutions (e.g., the use of digital technologies and data) and the ability of health and care systems to adopt them quickly. While the crisis increased the uptake of digital solutions, it also highlighted disparities and disconnects in the implementation and design of available technologies across Europe, while emphasising the need to further develop supporting innovation ecosystems. In addition, European countries (EU, UK and others) face stiff global competition to develop and adopt new healthcare technologies, developed mostly in the US and China to the detriment of the European market and citizens[1]. Therefore, there is a need for collaboration, innovation and investment that capitalizes on the strengths of the European continent. In the above context, the CONNECTINGHEALTH project has the overall objective of fostering interconnected and inclusive innovation ecosystems across Europe and maximizing the value of innovation in the digital health sector, with a long-term and sustainable vision.

CONNECTINGHEALTH Objectives

1. **Objective 1:** To map the landscape of the digital health ecosystems in Europe and beyond including their stakeholders, resources, initiatives, projects and political frameworks.
2. **Objective 2:** To explore the current and future opportunities for growth of the digital health sector, and its competitiveness.
3. **Objective 3:** To engage a wide range of stakeholders from governments, industry, academia and society in the development of the multi-year action plan for the sustainable and thriving digital health sector in Europe.
4. **Objective 4:** To connect and interconnect the existing regional and thematic digital health ecosystems for better cooperation, learning, exchange of best practices and wider impact.

[1] CONNECTINGHEALTH Application form

1.2 Deliverable Introduction

The objectives of the activities of the WP2 can be summarised as the following three tasks: (1) To undertake a thorough mapping of the digital health ecosystems in Europe and beyond, (2) to conduct the strategic foresight exercise with a wide range of the stakeholders in order to identify the key uncertainties as well as possible, probable and preferable futures in the domain of digital health till 2030, and (3), to identify the opportunities for action and mobilize the stakeholders.

The aim of this deliverable is to have a clear picture of a comparative analysis and identify the opportunities in the specified domains of the health sector (see below). For the purpose of this report, the focus areas of health included are:

1. Urban Health
2. Environmental Health
3. Occupational Health
4. Public Health
5. Mental Health

These focus areas have been considered in the proposal phase as interesting to explore from the perspective of digital health, as their importance is rising together with the urban developments, climate change, strains related to the workplaces, COVID-19 and others.

1.3 Methodology

This practical paper collected the information from the analysis of the chosen five domains of health and the survey carried out with the experts representing the different areas.

The consortium prepared a deep analysis survey (which can be found in the appendix section) and involved eleven experts and stakeholders within 5 different countries (Greece, Denmark, Finland, Hungary and the United Kingdom) amongst 12 disciplines. The stakeholders reached were a result of an internal curation of project stakeholders and members of project partner networks deemed relevant to this initiative. Project partner social media networks were also utilised for further promotion. by collecting

information from reports, case studies, statistics, published literature and interviews. All of the findings from this process were combined for a clear picture to emerge. Through these steps, the consortium identified potential opportunities in the five domains, while subsequently identifying various challenges and potential solutions in the digitalisation of the health sector and for the implementation of smart solutions in the sector which could be implemented in the future.

At the beginning of the circulation of the survey, the CONNECTINGHEALTH consortium faced difficulties in finding the right tools to access the interest groups. The consortium realized that the use of classic social media platforms (e.g., LinkedIn and Facebook) are not enough to access the necessary interest groups. After realizing this issue, the consortium implemented a different approach and agreed that the use of personal connection outreach was needed.

This strategy proved to be successful, as experts and stakeholders showed more commitment when asked personally and provided more answers than the online platforms. In the end, the project group managed to gain eleven answers. The experts and stakeholders all shared one common problem, they were too busy to fill out the surveys on the online platforms, but once they were asked personally to participate, they prepared for the meeting, similar to an interview, and showed much more commitment and interest for involvement.

2. The five domains of the health sector

The health sector plays a critical role in society, providing essential services that promote and maintain the health and well-being of individuals and communities. As such, in the CONNECTINGHEALTH project, the aim was to explore the different aspects of this overall sector.

In this particular deliverable, the consortium explored the opportunities for digital health in five domains of health (public health, occupational health, mental health, urban health, and environmental health). These were selected due to the existing body of literature and subsequent relevance to this project's goal and to digital health at large .

For each health domain, each partner prepared the overview with the goal of establishing a deeper understanding of the importance of the health sector in society and the opportunities and challenges it faces in fulfilling the mission in securing the health and well-being of the people. See below for the responsible partners for each:

1. Public Health: PBN
2. Occupational Health: SCOTENT
3. Mental Health: SeAMK
4. Urban Health: PBN
5. Environmental Health: ECHA

The health sector can be broadly defined as the collection of institutions, organisations, and individuals involved in the provision of healthcare services and the promotion of public health.[2] This includes healthcare organisations and providers, such as doctors, nurses, and allied health professionals, as well as policymakers, researchers, and patients themselves. Within this group, healthcare providers, such as doctors, nurses, and pharmacists, are considered as the "frontline workers" in the health sector. These individuals work together to ensure that people have access to quality healthcare services. The health sector is critical to society as it ensures that individuals can lead healthy and productive lives through the promotion of health

[2] The Role of Public Health Institutions in Global Health System Strengthening Efforts: The US CDC's Perspective - PMC

equity amongst different populations, which, in turn, contributes to economic growth and social development.[3]

2.1 Public health

Public health aims to improve the health of populations by keeping people healthy, improving their health and by preventing disease.[4] This work is achieved by promoting healthy lifestyles, researching disease and injury prevention, and detecting, preventing and responding to infectious diseases. Overall, public health is concerned with protecting the health of entire populations.[5] [6]

Within the CONNECTINGHEALTH project, the consortium aimed to expand the understanding of this particular domain of health, and additionally explored the factors affecting public health, the consequences of healthy lifestyle, diseases and the behavior of citizens in the public health.

Typical public health activities include surveillance of population health, the response to health hazards and emergencies (as seen with the COVID-19 pandemic), health protection (e.g,. through addressing environmental or occupational risk factors), health promotion (including action to address social determinants and health inequities) and disease prevention (including through early detection).[7]

There are three core domains to public health:[8] [9]

- **Health improvement,** which draws heavily on the local government roots of the profession, socio-economic influences and health promotion, tackling the underlying determinants of health.

[3] ECONOMIC AND SOCIAL IMPACTS AND BENEFITS OF HEALTH SYSTEMS

[4] What is Public Health? | CDC Foundation

[5] What is Public Health?

[6] What is Public Health? | CDC Foundation

[7] World Health Organization. (2011). Public Health Functions: Frameworks for their Application in the European Union

[8] Three domains of public health.

[9] The three domains of public health: An internationally relevant basis for public health education? - PMC

- **Health Protection**, which incorporates communicable disease control; environmental, chemical, radiation and nuclear threats; and occupational health.
- **Health Service Quality Improvement**, which incorporates healthcare systems, service quality, evidence-based practice, clinical effectiveness, and health economics.

While the emerging discipline of public health in the 18th and 19th centuries was mainly concerned with environmental causes of ill health, such as poor housing conditions or lack of clean water, in the second half of the 19th century the focus began shifting towards the development of personal preventive services.[10] During this time, maternal and child health services began to be established and mass vaccination was introduced. Already by the early 20th century, there was a recognition that public health would also be required to tackle chronic diseases whilst, in recent decades, there has been a realisation that public health will too be required to address the social, political and commercial determinants of health, including actions conducted outside the general health system framework.[11]

2.1.1 COVID-19 Crisis in Public Health

As one example, the COVID-19 pandemic is a stark reminder of the need to be better prepared to deal with public health challenges, including public health emergencies.

Over the past two decades, the European Observatory on Health Systems and Policies has been leading a wide range of activities that aim to guide policymakers to more effective public health action.[12] These included work on health policies, intersectoral governance tools, the organisation and financing of public health services, establishing the role of public health organisations in addressing public health problems, the organisation and delivery of vaccination services, contemporary public health practice, the impact of health policies on population health in Europe, and policies to tackle antimicrobial resistance.[13] Public health professionals and

[10] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7170188/

[11] Public health | Definition, History, & Facts | Britannica

[12] Public health

[13] The role of public health organizations in addressing public health problems in Europe

organisations alike aim to prevent problems from happening or recurring through implementing educational programs, recommending policies, administering services and conducting research—in contrast to clinical professionals like doctors and nurses, who focus primarily on treating individuals after they become sick or injured. Public health also works to limit health disparities; a large part of public health is promoting health care equity, quality and accessibility.[14]

2.2. Occupational Health

Occupational health is an area of work in public health which aims to promote and maintain highest degree of physical, mental, and social well-being of workers in all occupations.[15]

Within the CONNECTINGHEALTH project, the consortium aimed to expand the understanding of this particular domain of health, and additionally explored the factors affecting occupational health, the consequences of opportunities in this topic, including digitalisation, stress, work-life balance.

Digital technology has changed the way employers and employees work. It has led to flexible working environments, the possibility to work remotely, and constructed a more mobile workforce. As a result, it has enabled instant messaging, video conferencing and tools for collaboration between employees and teams – now considered a norm. Digital technology has changed and further evolved occupational health since the onset of COVID-19.[16]

Flexible working arrangements, on one hand, have allowed employers to offer better work-life balance, reduce the stress of commuting, reduce the carbon footprint, and provided opportunities for individuals with disabilities to take part in the workforce.[17] However, a number of health conditions reported from working remotely have been

[14] Public health

[15] https://www.who.int/health-topics/occupational-health#:~:text=Occupational%20health%20is%20an%20area,of%20workers%20in%20all%20occupations.

[16] Brassey Jacqueline et al, 2021. Poor mental health takes a heavy toll on individuals and businesses. New digital solutions can help employers provide personalized support and make well-being a strategic focus for their organization. McKinsey & Company, July.

[17] RSPH | Survey reveals the mental and physical health impacts of home working during Covid-19

worsening such as: the mental health of some employees due to the isolation of working from home, ergonomic or musculoskeletal disorders, eye strain, and health risks caused by sedentary behaviors.[18]

There is growing interest among employers and policymakers on how work can affect health and wellbeing and how increased effort by organizations, and public policy can assist in reducing health risks and promote workers safety. Workplaces can be key drivers of health and wellbeing for the individual and the community.[19] Employers need to gauge the risk based on the industry and whether it chooses to be proactive or reactive in its approach. With this, digital technology could be applied to ensure safety, to reduce risk and increase the health and wellbeing of employees. For example, digital health technology can be applied to ensure safety in factories, monitor air quality in workplaces, gauge mental health, and ergonomic issues of employees. [20]

2.2.1 Opportunities in digital health and occupational health

Wearables and sensors can help employees monitor their health metrics such as blood pressure, heart rhythm, hydration level, fitness levels and access resources for stress reduction and mental well-being.[21] The data collected from these devices can further inform employers when the team is undergoing high levels of stress or alert employees when they need a break. Some examples of digital technologies and their plausible impact on society are seen below:

- Wearable technologies can help to deal with issues relating to ergonomic or musculoskeletal disorders.[22]
- "Smart cities" can help to evolve the environments in which technologies are used and increase the wellbeing of citizens who live (and work) in the cities.[23]

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[18] RSPH | Survey reveals the mental and physical health impacts of home working during Covid-19

[19] :Work and worker health in the post-pandemic world: a public health perspective - The Lancet Public Health

[20] (PDF) Smart digital monitoring systems for occupational safety and health: workplace resources for design, implementation and use. European Agency for Safety and Health at Work - EU-OSHA

[21] New Uses for Wearable Devices in the Workplace

[22] New Uses for Wearable Devices in the Workplace

[23] Smart cities: Digital solutions for a more livable future

- Drones or unmanned aerial vehicles can be used to monitor health and safety of employees at offshore wind farms.
- Digital health technology such as mental health apps, time management apps to help employees with long COVID.

However, it is important to note that there are several privacy concerns on the use of individual health data which is sensitive at the workplace. There are concerns of data privacy and data security, and questions arise by employees on how the data will be used. [24] [25]

2.3 Mental health

Mental health refers to a "state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community." [26] It includes one's emotional, psychological and social well-being, influences the way individuals think, feel and act, and helps determine how people handle stress, relate to others and make healthy choices.[27] Mental health is more than the absence of mental disorders, and can be considered as a basic human right.

Within the CONNECTINGHEALTH project, the consortium aimed to expand the understanding of this particular domain of health, and additionally explored the factors affecting mental health, the consequences of healthy choices and mental disorders in this topic.

Similar to other aspects of health, mental health is influenced by a variety of individual, social and structural determinants that can either contribute to positive mental wellbeing or add to mental health challenges, thereby shifting our position on the

[24] Is wearable technology good for health and safety?

[25] https://blogs.coventry.ac.uk/researchblog/a-button-that-tells-your-boss-youre-unhappy-why-mental-health-wearables-could-be-bad-news-at-work/

[26] World Health Organization (WHO). (2021a). Comprehensive Mental Health Action Plan 2013–2030. Geneva: World Health Organization. ISBN 978-92-4-003102-9.

[27] Centers for Disease Control and Prevention (CDC). (n.d.). Learn About Mental Health. Retrieved 25.5.2023 from

mental health continuum.[28] This means that the efforts to promote mental health should go beyond simply treating mental disorders, and also focus on creating environments that foster wellbeing, resilience and empowerment. Recent data from 2019 showed that approximately 125 million people in Europe dealt with mental health conditions, equivalent to 13% of the overall continental population.[29] With the increasing prevalence of mental health challenges in modern populations, more information and action is needed to promote mental health.

Given the advanced state of digitalisation in societies, digital solutions such as mental health apps, online support groups, teletherapy tools, online courses and other digital resources can be seen as an opportune approach to address this issue.[30] [31]

2.4 Urban health

Urban health reflects the outcomes of the physical and the social environment that impact residents' and communities' well-being and quality of life, within an urban setting.[32] Urban health is a critical issue facing cities around the world. With rapid urbanization, the health of urban populations is increasingly threatened by a range of factors, including environmental, lifestyle, and socioeconomic factors[33].

Within the CONNECTINGHEALTH project, the consortium aimed to expand the understanding of this particular domain of health, and additionally explored the factors affecting urban health, the consequences of poor urban health, and some strategies for improving urban health.

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[28] Mental health

[29] World Health Organization (WHO) (2022b). European framework for action on mental health 2021-2025. Copenhagen: WHO Regional Office for Europe; 2022. Licence: CC BY-NC-SA 3.0 IGO. ISBN: 978-92-890-5781-3.

[30] Wright, M., Reitegger, F., Cela, H. *et al.* Interventions with Digital Tools for Mental Health Promotion among 11–18 Year Olds: A Systematic Review and Meta-Analysis. J Youth Adolescence 52, 754–779 (2023).

[31] Li J. (2023). Digital technologies for mental health improvements in the COVID-19 pandemic: a scoping review. *BMC public health, 23*(1), 413.

[32] Urban health https://link.springer.com/referenceworkentry/10.1007/978-94-007-0753-5_3127

[33] The Effect of Urbanization on Health Care Expenditure: Evidence From China

Urban areas are characterised by high population density, industrialisation, and urbanisation, which can have a significant impact on the health of urban populations. Environmental factors such as air and water pollution, noise pollution, and poor sanitation are major contributors to poor urban health.[34] [35] For example, air pollution from traffic and industry has been linked to respiratory and cardiovascular diseases (e.g., asthma, lung cancer and heart diseases), while poor sanitation can lead to the spread of infectious diseases such as cholera and typhoid fever. Water pollution can also have serious health consequences, including gastrointestinal illnesses and infections. In addition to these, noise pollution can lead to hearing loss, sleep disturbances, and stress-related disorders.[36]

Lifestyle factors such as physical inactivity, unhealthy diets, and substance abuse are also major contributors to poor urban health. For example, sedentary lifestyles and unhealthy diets have been linked to a range of chronic diseases such as diabetes and heart disease.

2.4.1 Urban health for the silver generation

As age increases, so does the number of people who have difficulty in carrying out everyday activities. The prevalence of sensory and, in particular, visual problems is also important to consider because they are often associated with falls and hip fractures, which can have serious complications. Hearing problems lead to loss of social contact, loneliness and depression, whereas walking difficulties, in addition to the greater risk and prevalence of accidents, can also increase social isolation and make it more difficult to access social health services[37]. This can lead to a greater need for care sooner.

The prevalence of chronic diseases also increases with age. According to Eurostat data for 2021, the proportion of the population aged 65+ with chronic diseases in

[34] Urbanisation and health in China - PMC

[35] Urban health

[36] Air pollution and chronic airway diseases: what should people know and do? - PMC

[37] Eurostat online data code: HLTH_EHIS_PL1E

Hungary is also very high by international standards: 76.7%, and 84.8% for the very old age group.[38]

More and more older people in the European Union are also living alone. Most recent data from 2021 estimating that approximately 35% of the age group were expected to live alone, according to Eurostat EU-SILC data. It can be expected that these rates have worsened since then. The vast majority of people, who are living alone, are women, i.e. 42% of women in the age group live alone, compared to 22.5% of men[39]. This group is considered as a particularly vulnerable group in society, as they are at increased risk of poverty, social exclusion, requiring a need for care.

2.4.2 Urban health and COVID-19

As an example, the COVID-19 pandemic has shown that cities often bear the brunt of emergencies. Citizens residing in urban settings have frequently had high exposure to the virus and have had little to no space (or the means) to protect themselves in these environments[40]. Overcrowding and lack of clean sanitation services increase the risk of contagion, limit residents' ability to adhere to public health measures and increase the likelihood of interpersonal violence. COVID-19 cases and deaths in deprived areas are double those of more advantaged areas.[41]

2.5 Environmental health

In the traditional understanding, environmental health encompasses the study of how environmental factors impact human health and well-being. According to the World Health Organization (WHO), environmental health refers to "those aspects of human health determined by physical, chemical, biological, social, and psychosocial factors in the environment."[42] Recently however, the understanding of the concept has been expanded to also cover the impact of the healthcare industry on environment and health.

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[38] Eurostat data code: Eurostat, HLTH_SILC_04

[39] https://ec.europa.eu/eurostat/databrowser/view/ILC_LVPS30__custom_4681976/default/bar?lang=en

[40] https://www.who.int/news-room/fact-sheets/detail/urban-health

[41] Urban health

[42] World Health Organization Environmental health

Within the CONNECTINGHEALTH project, the consortium aimed to expand the understanding of this particular domain of health, and additionally explored the factors affecting environmental health, the consequences of digitalisation, green health in this topic.

This is often referred to as decarbonising healthcare or "Green Health".[43] In recent years, the integration of digital health technologies has opened up new avenues to address environmental health challenges and improve outcomes. Some of the opportunities for digital health in environmental health include:

1. **Monitoring environmental quality:** Digital health technologies enable real-time monitoring of environmental parameters, including air and water quality, noise levels, and radiation levels. Sensor-based devices and wearable technologies can collect and transmit data to centralized platforms for analysis. This data can help identify potential health risks and guide preventive measures.[44] [45] [46]
2. **Disease surveillance and early warning systems:** Digital health platforms can facilitate disease surveillance and early warning systems by collecting and analyzing environmental and health data. This approach helps identify patterns and correlations between environmental exposures and health outcomes.[47]
3. **Personalized health recommendations:** Digital health tools can provide personalized recommendations to individuals based on their environmental exposures and health profiles. By integrating environmental data, such as pollution levels and allergen concentrations, with individual health data, these tools can offer tailored advice on preventive measures and lifestyle modifications. [48]
4. **Collaboration and data sharing:** Digital health platforms facilitate collaboration among researchers, public health agencies, and policymakers.

[43] Global Health Connector Partnership. Green Health

[44] Greenbiz. (2022). The internet of things is breathing fresh air into environmental health.

[45] Brainteaser project

[46] K-HealthInAir project

[47] World Bank (2019) From Big Data to Better Health: A Guidebook.

[48] The Promise of Digital Health: Then, Now, and the Future (2022), Abernethy A. et al., National Academy of Medicine.

Online databases and platforms allow for the sharing of environmental health data, research findings, and best practices.[49]

The integration of digital health technologies presents numerous opportunities within the field of environmental health. Real-time monitoring, disease surveillance, personalised recommendations, health education, and collaboration are among the areas where digital health can contribute to improving environmental health outcomes. As environmental health is becoming a more and more prominent branch of health due to climate change and its effects, it's expected that digital technologies will play a bigger role in this sector.

[49] Ibid

3. Benefits of smart-solutions in the digital era for the healthcare system

The summary below is based on the questionnaire responses the consortium received by a multitude of participants in 4 countries (Greece, Denmark, Finland, Hungary and the United Kingdom) amongst 12 disciplines (see in Appendix Chart 2) regarding the benefits of smart-solutions in the digital era for the healthcare system. More information on the respondents can be found in the appendix. The key summary points from the collected questionnaires are as follows:

- **Digitalisation and smart solutions are key points** in the future towards a connected healthcare environment that provides the necessary links between patients, clinicians and the data.
- **Faster evidence-based intelligence** to reach healthcare providers, so that they can make faster and more informed decisions in the treatment of patients. This kind of connected healthcare environment also helps to share healthcare data across the entire healthcare chain, from patients to clinicians to researchers.
- **Enabling faster solutions** to medical challenges, as data can be easily shared and analyzed to develop more effective treatments.
- A **connected healthcare environment** can enable patient-empowerment, as patients have access to a wealth of information that can help them to make informed decisions about their health, as well as the ability to monitor and manage their own health remotely.
- **Creating new jobs** in the healthcare field can help provide additional resources to support healthcare professionals and ensure quality patient care. These new jobs can include roles such as patient advocates, medical technologists, and health informaticians. By investing in these resources, healthcare professionals can be better equipped to provide high-quality care to their patients, while also helping to create more jobs in the field.

4. What can we expect for 2030?[50]

The survey used for the study and the detailed analysis of the domains led to the following knowledge and conclusions, which we would like to recommend to decision-makers and policy makers for future trends, proposals and targeting of resources and funding:

- It is clear that digital health technology has revolutionized the healthcare industry, providing innovative solutions to improve patient outcomes and workforce development. Emerging trends in digital health technology, such as artificial intelligence (AI), virtual reality (VR), gamification, and phenotypic approaches, have the potential to further transform healthcare delivery.

- In healthcare, AI has the potential to improve patient outcomes and workforce development by providing accurate and timely diagnosis, personalized treatment plans, and real-time monitoring. For instance, AI-powered chatbots can provide mental health support to patients, while AI algorithms can analyze workforce data to identify areas for improvement. Many examples of how AI has already been successfully implemented in digital health technology.

- Prevention and early treatment are crucial to achieving better patient outcomes as prevention is the first line of defense against many diseases. Vaccines, for example, are a highly effective way to prevent infectious diseases. By prioritising these measures, society can begin to reduce the burden of disease, improve quality of life, and ultimately save lives. However, there are challenges to implementing these strategies, including limited access to healthcare and financial barriers. In this report, various topics were explored as a result of the findings and key takeaway messages from the completed questionnaire (which individual answers cannot be shared due to GDPR); these encapsulated, the importance of prevention and early treatment, the benefits

[50] Reference for the chapter: https://docs.google.com/forms/d/e/1FAIpQLSep-5hcP2DsWz4ckBlSnvQI02Is3EsOHFrU87uo2rtj_zEtxg/viewform (Full questionnaire is available in appendix)

that preventative and early treatments offer, and the obstacles that must be overcomed to prioritize them.

- To make prevention and early treatment a priority, society needs to ensure that healthcare systems are equipped with the necessary resources and capacity to diagnose and treat illnesses quickly and effectively. Governments must also create incentives for people to access preventive care, such as lower copayments and coverage for the cost of preventive services.
- Finally, society needs to increase public awareness about the importance of preventive care, by providing education and resources to help people make healthier choices.

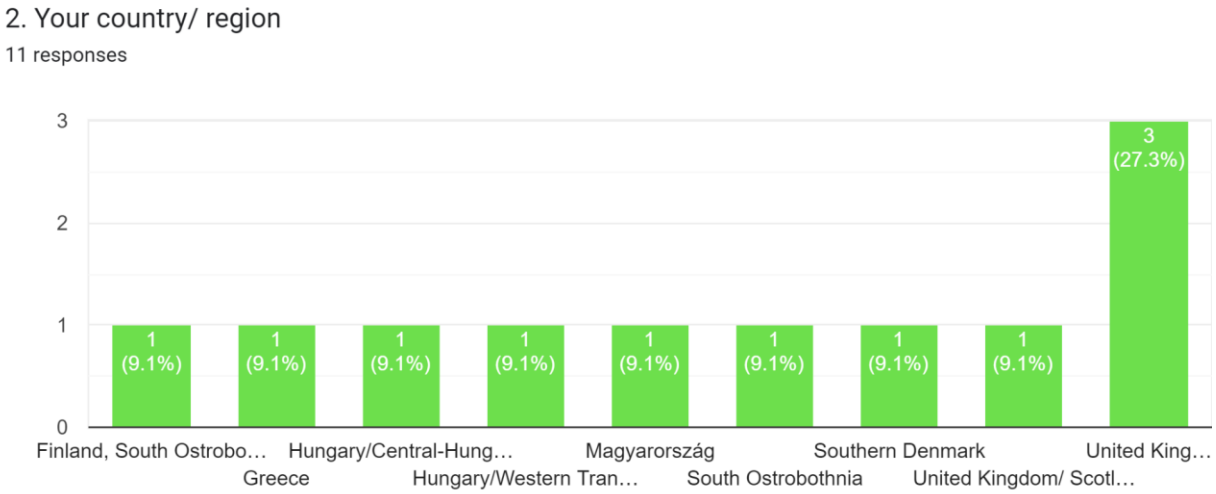
Appendix

Interview/Survey questionnaire

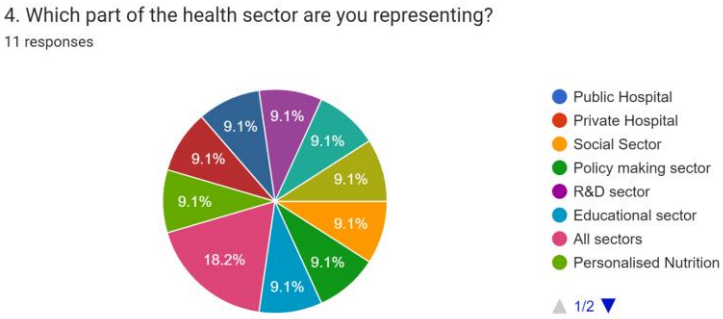
Link to the survey

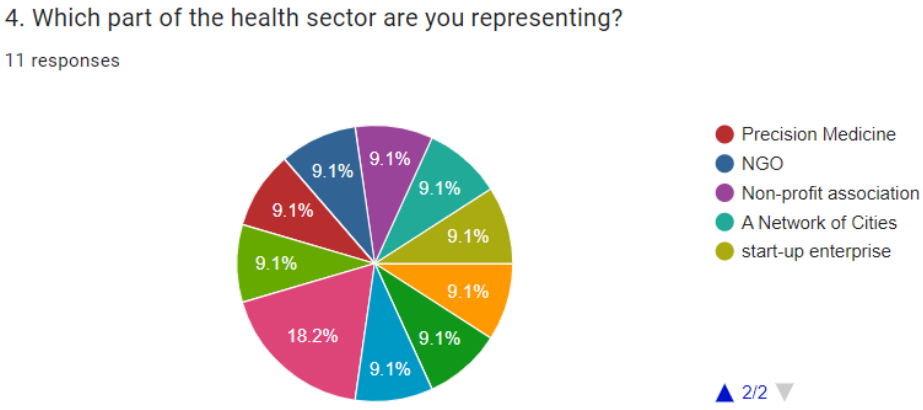
1. Your name/Country (Region)/Organization
2. Which part of the health sector are you representing? (e.g., public hospital, private hospital, social sector, policy making sector etc.)
3. What type of digital solutions are in your selected category?
4. What could be beneficial for the specific area?
5. What is currently the situation in the health sector in your country? Please share your opinion!
6. Does your country/region/city have any action plan to improve the digitalisation in the health sector?
    a. If yes, please share with us.
7. How does digitalization influence your domain of the health sector?
8. What are your suggestions to improve the digitalization in the health sector?
9. What are the beneficial factors of the smart solutions in the health sector?
10. What is the most important domain of the health sector in your opinion?
11. Which category in the health system should be improved in your country?
12. Your view about how the sector(s) should be improved. What can we expect for 2030?

Graphics and info-statistics from the survey:

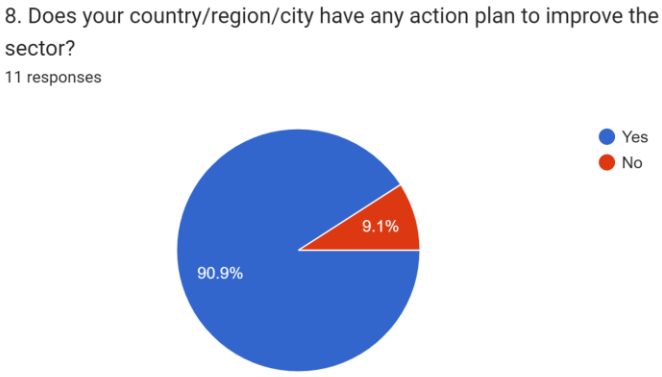


1. Chart: 11 responses came from Europe: Finland (2),Hungary (3), Denmark (1), United Kingdom (4)

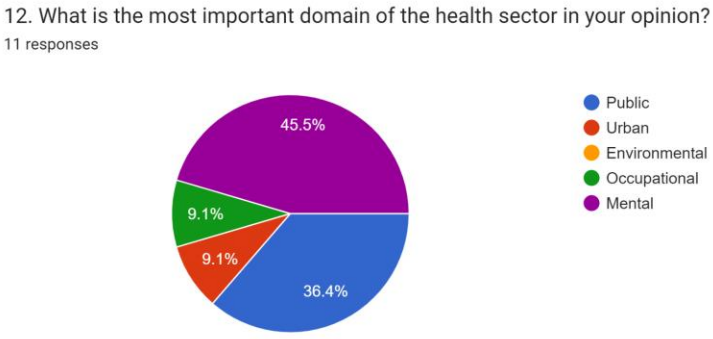




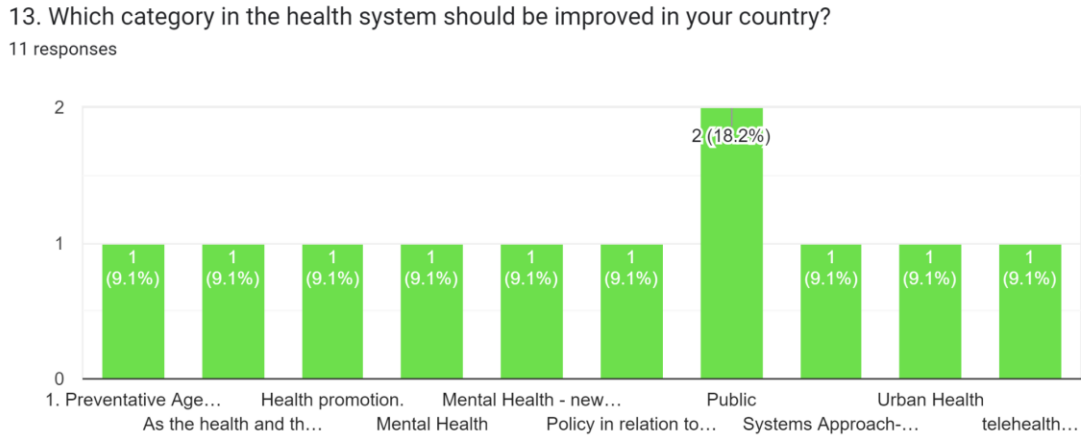
2. Chart: The statistics show how wide range of networks represented themselves from different part of the health-sector.



3. Chart:Each country or region declares the digitalisation of the health sector as an important factor (90,9%)



4. Chart: Important domains of the health sector represented in the survey



5. Chart: Which category in the health system should be improved in your country?