

HEALTH 2050

*Four scenarios
for human-driven health
and freedom of choice*



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Demos Helsinki employs co-creation and foresight for the success of societies, companies and communities in the long term. We generate ideas that breed change using broad-based expertise in future studies and first-class research.

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Praise for Health 2050

'In the Finnish government's current health and welfare reform, important policy decisions regarding freedom of choice are being made. As health services are largely funded by taxes, freedom of choice affects every citizen both as a taxpayer and as a user of services. Freedom of choice is a multi-faceted issue, and that's why presenting different views and public discussion about those various options is the key. Inequality between citizens is one of the most topical challenges facing us right now. With freedom of choice, individual responsibility for health will increase in the future, but it's important to remember that not everyone has the capability or the desire to take health into their own hands. From Tekes' point of view, it's important that freedom of choice provides opportunities and support for creating new service and product innovations.'

– RAIMO PAKKANEN
Social and Healthcare Services,
Programme Manager, Tekes

'Freedom of choice is seen as one of the driving forces of the Finnish government's health and welfare reform, which was started in 2015. Since the beginning of 2014, all citizens have been given the opportunity to choose public health centres and hospitals in Finland and within the EU and EEA areas. The National Institute for Health and Welfare and Demos Helsinki have researched how freedom of choice should be expanded to allow people to have real opportunities to make choices regarding their own health and wellbeing.'

In our research project with Demos Helsinki we search for solutions and present suggestions on how the Finnish service-driven healthcare system could shift 180 degrees and become a truly customer-centric system that promotes health, the role of the patient, and autonomy in decision-making.'

– MAIJALIISA JUNNILA
Researcher and Leading Advisor
at the National Institute for Health
and Welfare (THL)

Battling ageing with choice

LAST YEAR TAXI COMPANY UBER started delivering vaccines as a part of its offering. The savings from such new ways of delivering healthcare services are potentially huge. This particular services brings, for example, a flu-shot-wielding nurse directly to a customer's home. However, regardless of ease and other benefits, this solution does not solve the problem of those people who do not wish to be vaccinated. This is precisely the paradox that this report addresses: at the same time that we are being introduced to new (digital) ways of delivering health services, people's choices are what counts in health.

According to research, the power of choice has had mostly devastating effects on health. People do not always make the right choices when it comes to staying healthy, whether by choosing unhealthy foods or not optimizing available choices on offer to them in healthcare systems. However, there is no way of escaping the fact that people have and want to have more of a voice in determining their

health. It has become a prerequisite, even for publicly funded health services.

In this situation, we believe that looking at Finland in order to understand the future of health makes sense. Virtually all healthcare systems around the world are undergoing massive reforms, many of which are long overdue. In the midst of these global healthcare transformations Finland is taking a novel route. The drivers for this change are multiple. Digitalization, freedom of choice, and prevalence of lifestyle-related diseases are among the main reasons. However, the ageing population is the primary driver for the transformation.

Of course, Finland is not alone; much of the rest of the world follows the same trajectory. The UN estimates that the demographic share of the elderly grew from 9.2 per cent in 1990 to 11.7 per cent in 2013 and will continue to grow. In proportion to the world population, older people (65 years and older) will represent 21.1 per cent of the population by 2050. In many western countries as well as in China, one-

third of the population will be elderly by 2050. The shift is quick, unforeseen, and is leading to a new reality of an older global society. For demographic reasons, Finland is one of the first countries to experience this phenomenon.

The old-age support ratios (number of working-age adults per older people in the population) are already low in the more developed regions and in some developing countries, and are expected to continue to fall in the coming decades with ensuing fiscal pressures on support systems for older persons.

Finland's chosen path may be very different from 'the country that is even older' – Japan. Whereas Japan started focusing on making its current healthcare system digital, Finland is focusing on choice. This Nordic country is aiming to move away from curing the sick more efficiently to nurturing health, or even as we propose in this report, to a more holistic vision for health that we call 'capability nurturing' – naturally also with the help of digital technologies.

Whereas care is investment-heavy (hospitals, equipment, drugs, labour), digital solutions promise scale and behavioural change. The smartphone has already changed our behaviour tremendously. Studies suggest that the global average of peeking at your smartphone is every six minutes. Though the accuracy of this may be contested, the information provides tremendous possibilities for impacting choice. Imagine if even one-tenth or one-hundredth of those times you gaze at your smartphone would impact on your health.

We know there is a correlation between healthcare spending and health. However, it is far from simple. It is stronger in developed countries but ceases to exist when developing countries are taken into account. This means that there are countries where the same average life expectancy is reached with a fraction of the cost. For example, the US pays over five times more per year of life extension than Chile.

The conclusion from this is simple. It is the choices people make – not the particular way healthcare systems are or-

ganized – that count. Of course, Chileans have fewer choices than North Americans, however, we believe that it is possible both to have choices and live a healthy life.

This is our vision for the future: in a healthy society people are capable of living healthy lives. People’s healthy choices can be supported. Even if the main driver for this vision is increasing the capabilities of people in the age of choice, it also makes economic sense. A prevented illness is the cheapest option, and healthy people remain productive throughout their lives. In economic terms the value is created increasingly downstream and between people, not in the upstream system.

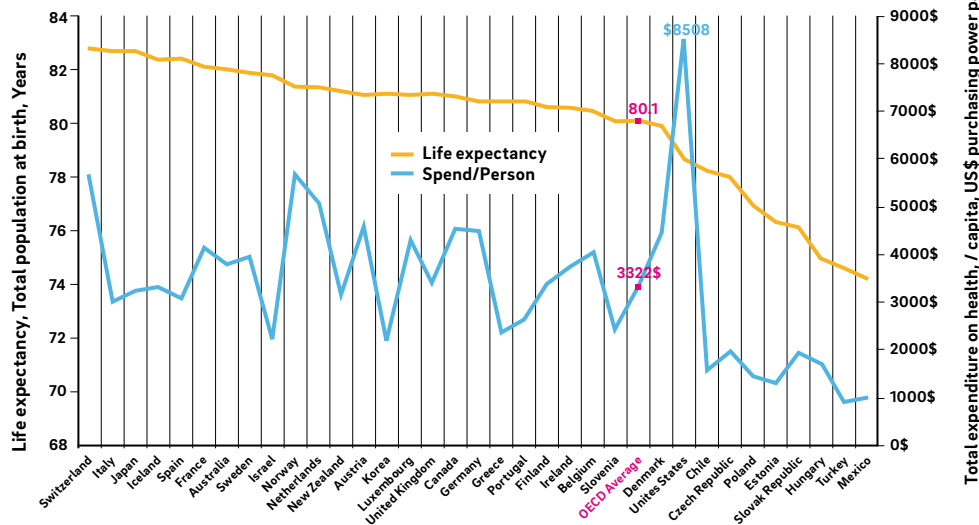
Therefore we propose a radical, new approach to providing health. We propose that in the future we will have not one, but two, health systems.

The first system is the legacy infrastructure of healthcare from the twentieth century that is run by capital-intensive institutions, hospitals, campaigns, and pharmaceuticals.

The second one is almost totally networked and based on choice. It is most vividly embodied by the new platforms and services that maintain and nurture healthy lifestyles and spring up around individuals and groups.

Figure: Life Expectancy vs. % of GDP Spent on Healthcare

Picture: OECD / <http://partnersinbpc.com/>



The second system has been 'hidden' from the health debate until now. And there is a good reason for that – there is neither a developed way to govern it nor an established business model for it. In the scenarios in this report we present four different ways in which the new system can be governed either independently or as a part of current public and private health industries. However hidden the second system may be, it is this system that has increasing significance in our choice-centric, wealthy, ageing, and digital societies.

Good examples of the emergence of networked and people-driven health solutions are scalable behavioural change interventions and applications, innovative ways of providing elder care in combination with student housing, and integrating health into popular youth leisure activities and sports. As well as, of course, running clubs and social sports communities.

The need for a new system is evident. It is not just the spiralling costs and what a preventative system can do to reduce costs; it is also about changing needs and the changing nature of our health problems. Today, the average office worker sits for about ten hours a day, a scenario associated with type 2 diabetes, cardiovascular disease, and increased risk of cancer incidence

and mortality respectively. How does one combat such illnesses with a traditional healthcare system?

The second system has always of course existed as people's voluntary activity and their 'lifeworld' – as described by Jurgen Habermas – as opposed to the world of structures. Now the big question is what can link these two digital technologies. Our bet is that many of the links are concerned with how data is owned, integrated and fed back to us. This opens tremendous opportunities for forming communities, for personalizing lifestyle recommendations, for strengthening healthy behaviours, and for driving efficiencies of face-to-face meetings between health professionals and patients.

Moving to a two-system approach is driven by necessity brought about by economic growth. As a nation's economy grows, two things happen to health:

First, the focus of looking for efficiencies moves from curing the sick to prevention, i.e. healthy lifestyles. In production terms, new investments are largely looking for a way to move from efficiency to effectiveness: in other words, from curing illness to nurturing health.

Second, another natural consequence of wealth is increased choice. The number

of choices we make on a daily basis is astonishing, and most of these have a consequence on our health. Not all choices are equal, however, and our capabilities as humans to make choices are extremely unevenly spread.

Choice is not simply about a better life, but also has tremendous impact on healthcare costs. Much of the burden of the most costly chronic diseases is linked to choices and lifestyles, particularly smoking, obesity and harmful use of alcohol. Social and environmental conditions drive lifestyle choices. This can be seen in the fact that most disadvantaged social groups bear a disproportionate burden of lifestyle-related diseases.

Finland is not alone in looking for a new system and disruptive health innovations. The growth of investments into the research and development of new ways to make people healthier is all in anticipation of a major systemic shift globally.

Health has bypassed all US non-defence research and development investments combined. Digital health services accounted for 7 per cent of total venture funding last year.

Our project is the largest scenario research project in the world to look at health from the point of view of choice.

More than 140 experts participated in the study, which was conducted using a combination of Delphi and backcasting methods. The vision for the research project was: 'Perceived health to double by 2050 without an increase in current costs.' The four scenarios beget different ways in which this could happen.

We found significant new opportunities for promoting health as well as increasing subjective wellbeing by focusing on choice.

We believe that looking at choice is important for very different reasons,

most importantly because there are more de facto health choices than ever before. For example, over the past 50 years, the selection of products offered in supermarkets has grown substantially. In the US in the 1940s, an average supermarket carried 3000 different items; by the late 1950s, that number had doubled. Now the very largest stores stock as many as 90,000 products in spaces of 50,000 square feet or larger. E-commerce makes this growth exponential, as almost all products and services can be ordered and delivered to the world's most metropolitan areas, which

will soon house 70 per cent of the world's population. Most of these choices have serious health consequences.

In this sense, increased choice is the prime reason for moving to a human-centric view. The importance of real freedom in the assessment of a person's advantage is at the core of this way of thinking. The quality of the healthcare system is related to real freedoms that people enjoy, not universal access to healthcare services. This is based on the view of health as an integral part of freedom and the freedom to achieve wellbeing. The consequences of such thinking are radical.

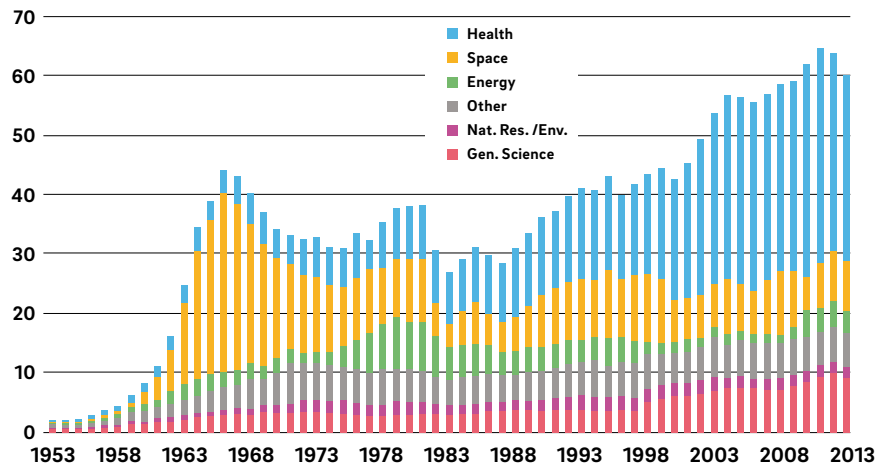
In the 21st century, health is about setting people free. Individual capabilities for achieving health are very different and, most importantly, our capabilities to choose wisely are very unevenly balanced, where the healthiest people are those most concerned with their health. As obvious as this is, it's not easy to see from the systems perspective. Yet the correlations between lifestyle diseases such as obesity and one's background are absolutely evident. In a just society, we need to put more effort into those who lack this capability.

ROOPE MOKKA

Founder, Demos Helsinki

Figure: Trends in Nondefence R&D by Function

Outlays for the conduct of R&D, billions of constant FY 2012 dollars



Picture: AAAS 2012, based on OMB Historical Tables in Budget of the United States Government FY 2013. FY 2013 is the President's request. Note: Some Energy programs shifted to General Science beginning in FY 1996.

Overview: The time for change is now

THIS SCENARIO REPORT examines how hidden resources in people and communities can be better utilized to tackle the toughest challenges of health and healthcare. The report looks at common problems ranging from lifestyle diseases to the widening health gap between different social groups. It presents four future scenarios that illustrate how overall perceived health in society can be doubled without increasing the total health costs.

Using the backcasting method, these scenarios were co-created with more than 140 professionals engaged in six different workshops and are based on extensive research from a previously published Demos Helsinki baseline report on health and freedom of choice.

Each of the four scenarios illustrates a different approach for the future.

The **Open Health** scenario shows how open data, apps and sensors can empower people to take better care of their own health. **Democracy of the Fittest** investigates the connection between citizens' active participation and wellbeing. The **New Nordic Model** displays the benefits of

health across all policies in society. Finally **Hero Doctors** reveals how professional skills and knowledge can be used to shape people's surroundings to support healthy behaviour.

NINE HUMAN-DRIVEN INSIGHTS arose from the four scenarios that we believe will produce better health in the future. (Each of these points is expanded upon in Solutions on p. 16.)

From service-driven to human-driven health

1. The role of people's own lifestyle choices on health is increasing.
2. We should look to health as a capability that enables people in all areas of their lives.
3. Health treatments are more cost-effective when people participate in their own care.

From healthcare specialists to a broader range of health actors

4. The most efficient way to maintain a healthy society is to improve people's opportunities for wellbeing and

enhance their capabilities.

5. New players – from app developers to care providers – across society should participate in solving our biggest health challenges.

New technologies and business models with a human-driven approach will revolutionize the health business

6. The future of health is all about the preventative care business.
7. Technology that enhances capabilities will become less expensive.

A new health culture and markets are the best tools for creating surroundings that support positive health choices

8. New markets and innovative approaches can help to establish a positive setting for facilitating better individual health choices.
9. Health can and should play an even more important role because healthy societies are better positioned to maximize their capabilities.

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For the reader: How to read these four scenarios

THESE FOUR FUTURE SCENARIOS for human-driven health and freedom of choice describe different options and opportunities for building a healthier society.

Each scenario proposes a vision for the future in which the perceived quality of health has doubled by the year 2050 without increasing current healthcare costs.

In addition, for each scenario we present health gatekeepers – that is, actors who play great roles in facilitating change. These scenarios illustrate that we currently have many options and resources for fostering better health. We believe that these scenarios provide better insight into how to build a stronger society that supports health and wellbeing in a changing world.



Research and background

THIS HEALTH FUTURES research project is part of Demos Helsinki's health and choice scenarios research work. The first study, The Futures of Health (published in 2014), was part of an extensive research project that examined freedom of choice in the formation of social and healthcare services.

The main question of The Futures of Health was:

How will future services support consumer choices relating to health?

Sub-study questions were:

1. How will society change by 2050 and how will those changes affect decision-making and freedom of choice in health and wellbeing services? How will people's preferences, age, level of education and knowledge, and living conditions, along with the economy, open data, and technological, environmental, legislative and organizational changes, affect the ability of individuals to access choice?
2. What services will promote wellbeing and health services in 2050? How will they support people's health and wellbeing? Who will be responsible for overseeing the services? Who will provide the services? How will they be procured? How will they be chosen and ranked?
3. How will options relating to health and wellbeing be put into practice for different consumer groups?

Partners

IN DEMOS HELSINKI'S health and freedom of choice future scenarios series, the main partner is the Finnish National Institute for Health and Welfare (THL). Other collaborators include Novartis, LähiTapiola, Validia Asuminen, Social Insurance Institution Kela, the Finnish Federation for Social Affairs and Health (SOSTE), the Helsinki Deaconess Institute, and Smartum. In addition, the consortium includes the cities of Oulu and Jyväskylä, Eksote (the South Karelia Social and Healthcare District), Kainuu's social and healthcare group and Sosiaalialan työnantajat, the Association of Social Service Employers. Project financing came from Tekes, the Finnish Funding Agency for Technology and Innovation's 'Innovation in Social and Healthcare Services' programme.

Founded in 1986, **Helsinki Deaconess Institute** (Helsingin Diakonissalaitos) is a public institute that has provided nationwide social services in Finland for almost

150 years. It specializes in child and youth welfare services, housing and employment support, substance abuse services, mental health programmes, and educational service. The Helsinki Deaconess Institute Foundation also supports scientific research in the fields it represents.

THL, the National Institute for Health and Welfare, is a large-scale health institute operating under the direct guidance and supervision of the Finnish Ministry of Social Affairs and Health. Currently the institute employs more than 1300 people. THL aims to promote welfare and health of the population, and to help prevent diseases and social problems as well as develop social and health services by means of research and development.

Novartis is one of the leading global healthcare companies. The company's three main divisions are pharmaceuticals, eye care, and generics. Novartis is based in Switzerland but has established offices around the world and is also currently involved in many beneficial research projects.

LocalTapiola (Lähitapiola) is a financial corporation group operating mostly in mainland Finland, offering banking and insurance services to 20 local companies and 260 regional offices from Lapland to Southern Finland.

Validia Housing has offered assisted housing for the disabled and aged in Finland for over 40 years. The company also provides home care and personal assistance for people in need and works towards the larger goal of societal wellbeing.

Kela, the Finnish Social Insurance Institution, is a government agency supervised by parliament and funded by taxpayers. Kela manages all the basic social security services of individuals and different groups such as students, families, unemployed, pensioners and disabled people.

SOSTE Finnish Federation for Social Affairs and Health is an umbrella organization formed of approximately 200 social and health NGOs. The 'wellbeing economy' is its fundamental goal, and SOSTE

aims to positively affect and make changes to health and wellbeing policies at both the national and international level. Its goal is to improve the wellbeing of individuals as well as to increase the impact of social and healthcare organizations.

Smartum Ltd is a market leader in its field, promoting employee motivation and wellbeing by offering employee and social benefits programmes using vouchers, electronic cards, and electronic vouchers.

Tekes, the Finnish Funding Agency for Technology and Innovation, funds innovative business research and development projects, and public research projects at universities, research institutes, and universities of applied sciences. The institution selects funded projects based on their long-term benefits for the economy and society. In 2015, Tekes had about 550 million euros available to help innovative and beneficial research and development projects in Finland.

Introduction: On the road to new conceptions of health

WE ARE AT a turning point. Right now, we need new innovative ideas that utilize the hidden resources in society and in people and build practical solutions for the most difficult problems such as lifestyle diseases and great health inequalities.

This scenario report has been written because Finland strongly needs new perspectives on the health and healthcare debate, which affects society as a whole and people as individuals. But unlike the mainstream definition of health and healthcare, which often refers largely to illnesses and sick leaves, we illustrate how this vision works in practice. **We see human health as a person's physical, psychological, social, and functional capacity potential. Health facilitates the relevant and important activities of daily life.** That's why promoting health will utilize previously hidden resources and thus foster economic growth.

Goal: Perceived health to double by 2050 with no increase in current costs.

The four scenarios that highlight potential future health trends in this report have been created in co-operation with a broad network of experts. More than 140 experts from different fields, including health, participated in six workshops in Finland in late 2014 with the goal of identifying new ways to support health and wellbeing throughout the population.

In the workshops, the backcasting method was used to brainstorm on various desirable futures and then to work backwards to identify policies and programmes that would connect the future to the present.

The workshops were directed by the following vision: Perceived health to double by 2050 with no increase in current costs. This vision was challenging. Health inequality among the citizens of Finland is

largely dependent on age, gender, education, place of residence, and income level. In addition as the population ages, health costs rise. We need concrete measures that not only facilitate the care for the sick, but also strengthen people's abilities to use their own potential (for example, by choosing healthy lifestyles) to prevent illness and injury.

For many people, 'health' means more than just the ability to function or live without illness – it also means the ability to be an active member of society and their local community.

For many people the value of health is not measured in monetary terms – rather, it's the ability to live a meaningful life. In administrative, governmental, and economic terms, health translates into hopes for an efficient workforce and healthy ageing, both of which equal lower expenditures.

Both points of view are important and complement each other. Health is a significant and broad field which includes the pharmaceutical industry and private healthcare. That's why a business perspective needs to be considered when we look at the future(s) of health and healthcare.

Cost-effectiveness has been taken into account in each of the four scenarios by contemplating what type of a society best supports healthy lifestyles. We have also considered various market forces and the economic changes that technology will bring.

Cost estimates relevant to longer life expectancy are one of the most reliable pillars for understanding the future. Nevertheless, it's important to acknowledge that future life expectancy also relates to uncertainties such as a potential decrease in people's performance and work ability owing to increased use of technology, and crises and disasters that can affect people's average life span, as well as changes in social norms and values.

When surveyed, the majority (75 per cent) of 80 health and wellness experts said they were of the opinion that health

promotion should focus on the quality, not quantity (length), of life.

It is also possible that the current estimates of life expectancy radically underestimate future average life expectancy. In earlier years, life expectancy estimates have always been overly conservative. A radical lengthening of life expectancy would significantly impact society and the ways we work, participate, take care of others, and are taken care of.

Currently (2016), health is largely spoken of as a resource for wellbeing. Yet it is also a social, physical, and psychological resource.

These four scenarios we have built illustrate that health is also an issue between municipalities and individuals, and its meaning can change in major ways depending on the structure of society and whether health is a central building block, such as in the New Nordic Model, or a less noticeable element in daily life, such as in the Hero Doctors scenario.

We view health in this report as a holistic state consisting of functional performance, social wellbeing, and the experiential. It's clear that simply removing or reducing illness is not enough to improve health.

The experience of health goes far beyond sick leaves and illnesses and relates to, for example, the environment, social circles, and perceived autonomy. Participation and autonomy concepts are related to freedom of choice. What, and how, do we choose? Freedom of choice relates to health in different areas of life, from place of residence to services available, and lifestyle choices.

Freedom of choice relates to health through different areas such as place of residence, services available, and lifestyle choices.

Solutions: A shift to human-driven health and healthcare

Human-driven health thinking will replace service-centric thinking.

THE IMPORTANCE of people's own choices will increase. To reduce the number of lifestyle diseases, the role of individual lifestyle choices in preventing illnesses needs to be emphasized. This doesn't mean that health is solely in an individual's hands. But it does mean that promoting health is increasingly about understanding human behaviour and cooperation between people with the aim of building environments of choice that support and promote health.

Health is capability. It's crucial to move from a one-sided discussion about physical health to a dialogue about individual, social, psychological, and physical capabilities as ways to think about health – and to design for services. In an ageing society this is crucial. Functional ability is more than physical capability. It is a person's physical, psychological, social, and functional capacity, all of which facilitate

the relevant activities of daily life.

Health is cost-effective when people participate. Participating can mean self-care using new information and tools such as e-health solutions that allow monitoring of medical conditions, or participating in social groups and the decision-making process related to the bigger health picture. Giving people more power and supporting participation does not happen simply by building new services.

These four scenarios illustrate that understanding health is subject to change. Each society and community determines health concepts on their own terms. The way that health is discussed directs people's beliefs, hopes, and resources towards their own relationship with health.

If health thinking focuses on the absence of disease and illness, then naturally the spotlight is on the treatment of disease and illness. When the definition of health expands to be understood as a holistic bio-psychosocial experience, the role of communities or groups starts to

play a bigger role in the way we look at and understand overall health.

How do we want to talk about health in the future?

THESE SCENARIOS ILLUSTRATE that health can be fostered in society by building functionalities. But health services and enlightenment are not enough: health promotion needs to extend into people's daily lives. In Finland, there are already communities solving future health problems by trying out new solutions and removing previous obstacles and barriers. These communities are providing space for people's own agency. As a result of digitalization, health information and peer support will be produced in global social arenas such as networks. In daily life, this can mean that those suffering from sinus problems, for example, can deal with such problems in a network community specializing in the topic.

Using people and group resources to benefit is key for a healthy society.

People and group resources can be better utilized to build a healthier society. It's key to involve as many people as possible if we want to solve the largest problems related to health, such as the growing cost of health, socioeconomic differences, health inequalities, and the sustainability gap.

In the future the biggest challenges in health will be solved by a group of new actors.

Preventative health measures can be increased by promoting capabilities and possibilities for wellbeing. In the future, individualized information, nurturing personal capabilities, good interpersonal practices, and habitat adaptation will be among the new preventative health techniques.

With MyData heart rate, stress level, weight, activity, and sleep quality will be even easier and more reliable to measure and follow up on in the future. This will help people to recognize changes in their

lifestyles and thus identify possible risks, hopefully before they contract an illness or injury. Furthermore, the potential to access data from smaller groups such as employees in companies or pupils in a local school will raise awareness about workplaces, schools, and cities as health promoters.

New players will solve the biggest health problems. Health is borne largely outside of traditional healthcare systems. Decision-making will happen across policies, and this type of thinking needs to be expanded to include companies and organizations.

Who are the future health and healthcare players? That is one of the central questions discussed in these four scenarios. Health is affected by a large group of actors, people, and services and extends far beyond traditional health.

The general view in the scenarios is that value-chain renewal and building of human-driven health markets is possible in many different fields. The current public and private healthcare system can take an active role as a change leader and its new partners can build the future together.

Health will be produced by all sectors of society, not just the health sector.

The central challenge is motivating a number of different actors to work together for a common goal. In the four scenarios, different means have been considered including the sharing economy, and tax breaks or other advantages for companies that provide wellbeing services for their employees and participate in developing new methods that contribute to health.

The human-driven approach will revolutionize health technology and create new business models.

The future of the health business is the prevention business. Through apps, sensors, and better information, the prevention business can transfer large amounts of value in novel new ways. For example, pharmaceutical companies can meet 'patients' before they get sick.

The new models of the preventative health business currently represent just

a fraction of pharmaceutical industry profits, and the field is largely composed of start-ups. In addition, because health industry regulations in many countries make business ideas related to health expensive to realize, a large number of start-ups focus on increasing people's functional performance.

The cost of wellbeing technology that increases functional performance will decrease. Measuring analysis will become part of everyday life because of ubiquitous sensors and data analysis. New technologies will also shift the moment that care starts and bring cost reductions to the public sector. However, technology related to treating illnesses won't necessarily become less expensive.

There's a lot of room for new players such as app developers, telecare makers, and those who provide health solutions with data companies. The market will offer more daily choices in an environment that promotes wellness.

Some of the most promising areas in the preventative health market include digital platforms and apps provided by companies advancing self-care. These encourage and assist people in undertaking healthier lifestyle habits, for example through monitoring and encouraging exercise. They also help people take better care of themselves by providing biomarkers or apps that give personalized information about genetic risks that an individual may be predisposed to and outline the risks therein.

The arrival of these new players raises several key questions:

1. How do we ensure that everyone is able to participate with these new methods and at the same time ensure that care is based on knowledge and equal access to wellbeing?
2. How do we ensure that the data collected about people helps them and that they also have the ability to manage it and the decisions that are made based on that information?

Traditional healthcare players will benefit from the new opportunities provided by a platform economy, digitalization, cloud computing, and the sensor revolution. In Finland, the government's current healthcare reform also provides new opportunities to create open systems and, indeed, a new type of health system. To what extent technology is used will also determine whether the health service system is open, decentralized, or centralized, and what the role of doctors, nurses, and caregivers will be. Will those professions become more important, and how will technology ease their workloads?

Health technology that reduces costs allows people to take their own health into their own hands – to a certain degree – and support doctors in their daily work. It can also encourage and guide people to make sensible decisions regarding their health.

Environments that support health and freedom of choice are being built with the help of new markets and a new health culture. The tools for developing new health markets are, for example, identifying co-benefits, creating shared value, and promoting impact investment. New types of markets mean that health sector needs to build new partnerships and take health experts into new environments.

Environments that support health can be built by changing the culture of health. Benefitting from the resources of people and groups is central to achieving the goal of a healthier society in the future. A healthy society maximizes its functional performance. To build healthy societies we need to admit that health is mainly promoted in everyday life. Exercise, nutrition, low stress levels, and pleasant social interactions are all crucial to maintaining a healthy and happy life. This aspect should be noted in health as well as in city planning, management, and education, and in designing schools or work environments.

When boosting health expands to new actors through a greater understanding of health issues, it spurs innovation that

helps solve massive challenges in the domestic health market. Those innovations can become excellent export products for the global market. Health and wellbeing can push people and policies into larger roles than the ones they currently have.

Health and wellness are humane and productive goals for society and its actors.

Background in figures

A picture of global change: 2015 vs 2050

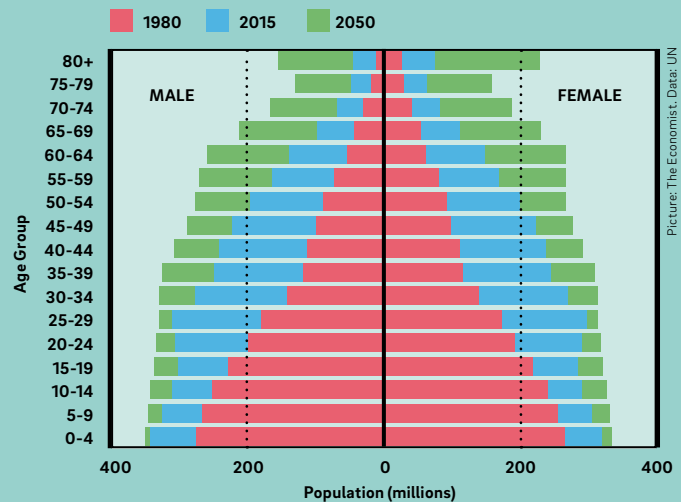
At present, the population is ageing, rapid urbanization is taking place, and the impacts of global climate change and the rapid pace of technological development are making a major impact. All of these issues will affect people's daily lives.

1. Changing demographics

AN AGEING POPULATION AND URBANIZATION will shape future societies. For example for Finland the percentage of over-65s will rise from 19,4 per cent of the population in 2015 to 26,9 per cent of the population by 2050. In Europe 34 per cent of the population is projected to be over 60 years old by 2050. The needs of an ageing population will greatly impact societies. Urbanization will shape concrete physical environments, infrastructures and communities. As population density grows, the role and significance of local communities will take on new forms.

THE CURRENT WORLD POPULATION of 7.2 billion is projected to increase by 1 billion over the next 12 years and reach 9.6 billion by 2050 (source: UN World Population Prospects: the 2012 Revision). Globally, the number of older persons (aged 60 years or over) is expected to more than double, from 841 million people in 2013 to more than 2 billion in 2050. Older persons are projected to exceed the number of children for the first time in 2047. Presently, about two-thirds of the world's older persons

Figure: Global Demographics:
From pyramid (1980) to bell (2015) to barrel (2050)

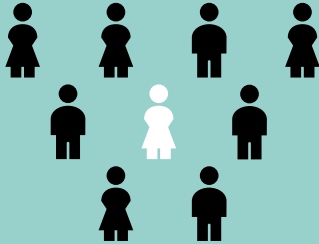


live in developing countries. Because the older population in less developed regions is growing faster than in the more developed regions, the projections show that older persons will be increasingly concentrated in the less developed regions of the world. By 2050, nearly 8 in 10 of the world's older population will live in the less developed regions.

(Source: UN World Population Ageing Report, 2013)

2. Changes in relationships between individuals and communities

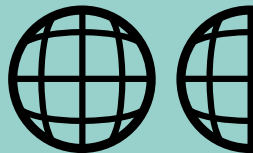
AS THE POPULATION and knowledge mobility grow, communities will diversify and the significance of peer communities will increase. The demand for individual choice will also rise.



3. Diminishing natural resources

THE WORLD'S POPULATION is currently using the equivalent of one-and-half Earths. Some countries are worse than others. If everyone were living like Americans, we would need four Earths – if like the French, 2.5 Earths would be needed. Moderate UN scenarios suggest that if current population and consumption trends continue, by the 2030s we will need the equivalent of two Earths to support us.

(Source: Global Footprint Network)



TO SUPPORT THE WAY WE CURRENTLY LIVE, WE WOULD NEED MORE THAN 1.5 EARTHS WORTH OF NATURAL RESOURCES TO SUSTAIN THESE DEMANDS.

4. Technological 'planetarism'

IN 2015, health apps are widespread, and self-care and e-health services are constantly being developed. By 2050, gathering information and analysing it will be greatly aided by mobile apps, sensors, biotechnology, robotics, and smart technology, which will have become even more widespread and a standard part of healthcare.

5. Global economy

VARIOUS STATES AND NATIONS will be even more interdependent and the lines of traditional power balances will be blurred. While the global economy will expand the available choices and options for work, at the same time its realities will strengthen inequality and insecurity.

The TOP 5 economies in 2015 and 2050



Picture: Hawksworth & Chan 2015

Four scenarios illustrate bold new possibilities for health and health care

THESE FOUR DIFFERENT FRAMEWORKS – the **Democracy of the Fittest**, **Open Health**, the **New Nordic Model**, and **Hero Doctors** – offer views into possible futures for 2050. Each scenario reveals a different world and offers a portrait of people’s daily lives – at home, school, work, and in the community. They also illustrate different health services that will be available and how individuals will be able to influence the decision-making process both at the political and grassroots level.

The main theme of **Open Health** is, as its name suggests, a transparent approach to health information in different sectors. **Democracy of the Fittest** sees a world in which participation and health are strongly linked to one another. The **New Nordic Model** represents a society where good health is the central goal. And in the **Hero Doctors** scenario, the role of health experts in planning surroundings that nudge for healthier behaviour is emphasized.

These four future society models vary in their interpretation of how health is

promoted and how power is distributed between citizens and institutions. **Open Health** and **Hero Doctors** both envision a future in which experts and individuals’ data are used to foster better health and minimize health risks based on lifestyle choices. **Democracy of the Fittest** and the **New Nordic Model** see a future where, instead of lowering risk, the focus is on encouraging wellbeing by offering new ways to participate and by influencing people to make health-conscious choices.

Democracy of the Fittest and **Open Health** share a view in which social responsibility has shifted power to personal responsibility, and power is in the hands of citizens, whereas in the **New Nordic Model** and **Hero Doctors**, experts and institutions exercise power.

All four scenarios envision a future in which we are healthier, live longer, and feel better – without increasing costs. We want to illustrate that it’s possible to reach our health goals in many different ways – it’s not a question of a ‘yes’ or ‘no’ answer.

Four scenarios by buzzwords

DEMOCRACY OF THE FITTEST

- Experimental culture
- Rise of localities
- A freelance society

OPEN HEALTH

- MyData
- Knowledge management
- Global village

THE NEW NORDIC MODEL

- Partnership society
- Sharing economy
- Wellbeing as a competitive edge

HERO DOCTORS

- Knowledge management
- Eco-health
- Nudge society

Democracy of the Fittest



Participation creates health

TALKING POINTS

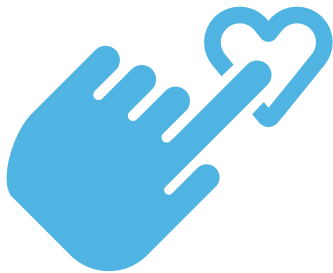
- Clear and concrete local policy makes participation easier.
- Residents are the best planners of their own living environments.
- The growing popularity of small business and entrepreneurship nurtures new solutions.
- Supporting new, agile ways of working boosts self-fulfilment and feelings of relevance.

KEY GOALS

- To direct more power at local areas
- To use new participation methods and tools, such as virtuality and participatory budgeting to increase people's ability to take part in decision-making
- To reduce bureaucracy for small business owners, entrepreneurs, and local actors, and encourage risk-taking

Democracy of the Fittest: Vision 2050

Democracy of the Fittest emphasizes participation and locality. In this scenario, there's room for people to be active participants. Different areas can experiment with different practices and learn from each other. This new type of reorganized health and social region produces better and ever-evolving health that is efficiently directed and administered by citizens.



IN THE YEAR 2050, Finland is divided into city- and expertise-concentrated areas, where power lies in the hands of residents. Active participation has greatly been advanced: through increased engagement, it's possible for everyone to create meaningful experiences and have a direct impact on local activities and policies, whether by starting up their own business or by being involved in their local community at other levels.

Virtual meetings, an open and up-to-date budget, and direct possibilities for residents to affect local policies and decision-making have made politics much more concrete for citizens. As a result, there are a greater number of active citizens, which is reflected in the growing number of people participating in political decision-making at the local level. Many people are much more active in their own area or neighbourhood and in designing its services and independently suggesting solutions to local challenges.

Many municipalities are smart cities.

Real-time information on traffic flows, accidents, and locations with the highest volumes of traffic is available. This data helps daily decision-making and also works as a basis for several projects. For example, citizens can decide whether a high-risk accident intersection requires the construction of a new crosswalk with traffic lights, or whether a hospital will be built in an area that has the highest density of older people.

National regulation has decreased. Local health problems are answered by whoever can sell their innovative solution and earn a living doing so. When it comes to health services, it's possible to receive certification from the state if the service fulfils national quality standards. Nevertheless, responsibility always lies with the buyer.

Owing to strong regionalism, health differences between areas are great. An increasing number of people are motivated to invest in their health, as they are aware of the real costs of health and are

able to clearly see where it's possible to save money by developing their environment in health-promoting ways. Strong participation in decision-making has led to discussion about poor lifestyle habits and their effects on society's functioning – unhealthy lifestyle choices are seen as a sign of indifference towards others. For this reason, in many areas individual rights (for example, the right to smoke) are limited according to rules agreed upon together. Making poor lifestyle choices can mean losing bonus points that can be used for discounts on certain items or services in municipalities or communities.

Health concepts and services differ from area to area, as each locality has its own specialized focus. It is, however, possible to seek services in other regions, whether for better care or specialized services. Sometimes it's necessary to cross over municipal or community lines. For example, in the small remote town of Ivari, a group of neighbours have raised a cancer-sniffing dog as an alternative to the other specialized cancer hospitals, which are far away. Local needs have resulted in solutions that have reduced the cost of public health.

Strong regionalism, digital platforms, and tax-free status for minimum income

earners and micro-businesses have led many to take advantage of local resources. As communities have become more closely knit, social networks have expanded and the need for similar services to be arranged by municipalities has decreased, resulting in cost savings.

Existing resources are being used much more efficiently as people have realized that new buildings are expensive. In homes that are vacant during the day, space can be used for co-operative flea markets, and office spaces can double as yoga studios in the evenings. Taking advantage of multi-use spaces has been increased by the creation of moveable smart spaces where walls and levels can easily be shifted using a smart console.

Digitalization and benefitting from shared resources means local meet-ups have increased. Neighbours can be invited over for dinner using the digital message board outside each door in a block of flats or a housing complex. With increased socialization and co-operation, face-to-face meetings by people of all ages have increased. For example, during a series of pop-up restaurant events in one apartment, an older neighbour is happy to babysit the young daughter of the restaurateur. In gratitude, the restaurateur and

her partner offer to clean the babysitter's apartment.

People have many different ways of earning an income in the future. The number of entrepreneurs and self-employed as well as co-operatives and regional guilds has grown significantly. Fragmentation of the traditional working world has led to significant changes in values. In the future, equal opportunities to influence – affecting change and services that support people's abilities – are more important than work. Instead of academic degrees, the ability to learn new skills and use them effectively is valued. People's desire for relevance and necessity has grown stronger.

The goal of education health policy is to emphasize to individuals that they are responsible for themselves and their health and wellbeing, as well as to give them the tools and knowledge about how to influence what happens in society.

The quality of education and its relevance are important, as are participation, innovativeness, and the ability to acquire topical information and develop new skills. At the elementary or grammar school level, skills taught include speech communication and solution-oriented thinking.

Open Health



Information produces health

TALKING POINTS

- Smart technology activates people to live more healthy lifestyles.
- Self-care saves money from basic health costs.
- Peer support helps the ill to cope.
- There should be more responsibility over individual health data.

KEY GOALS

- To develop cost-effective smart technology and development of analytics and genome technology
- To develop data protection
- To combine data registries
- To promote submergible health monitors in apartments and homes
- To create digital health communities

Open Health: Transparency 2050

What types of health possibilities will the digital revolution give birth to? How can access to better information and using that data more effectively lead to creating a better overall health system? What role do networks play in forming health?



THE IDEA OF SICKNESS has almost totally disappeared in the Open Health scenario, as various vital sign measurements have indicated that health and sickness are almost impossible to separate from one another. Through access to personalized health data, citizens have been motivated to take better care of themselves, their families, and those close to them. Although increased health data access has improved people's knowledge about their own capabilities and feelings, the dependence on technology has also grown. For example, recognizing harmful working habits in the 2050s is easy. Consumption of alcohol has decreased, but there are still people who choose not to acknowledge the effects of certain lifestyle choices on their health. As awareness grows, people have come to realize that their social surroundings and circles can have harmful influences on health.

Information and its movement are the new tools of power. Open data has

brought political decision-making into people's living rooms. Access to information means that new power centres have developed alongside the legislative, executive, and jurisdictional ones. The ease of access to information has helped people – both actively and passively – participate in decision-making processes.

Digitalization has also helped people form groups based on shared interests, goals, or specialisms. In Open Health, special interest groups formed around a specific topic play an increasingly important role in society. For example, 70-year-old Mikko found a local virtual skating group in which members go skating together virtually at a local community centre. This is just one example of how loneliness, isolation, or being left alone has become increasingly rare.

Virtual knowledge and peer-to-peer groups have increased through digitalization, open health platforms, and communities formed around specific health concerns. Patient organizations have also

taken on the task of managing Finnish virtual communities related to specific health conditions. These organizations are a significant resource for boosting wellbeing. Peer-to-peer groups have strengthened people's abilities to deal with difficult and even tragic issues by bringing them together with others who have gone through the same life experience. Peer support can also act as a motivator. For example, smoking cessation can be fun when it's done together with people who are also trying to quit. Various communities of caring people have succeeded in decreasing the number of seriously ill individuals who were previously alone.

Rating treatment procedures and the effectiveness of different service providers is easy when people can compare treatment outcomes with other patients. Thanks to science and technology, treatment methods have become more efficient, and the usage of certain medicines with strong side effects for people with certain predispositions can be avoided or stopped early.

In the traditional sense, doctors are no longer needed. A large number of

illnesses can be cared for at home using the information and guidance offered by smart technology meters. If a home's smart centre meter indicates something worrisome or suspect in a person's overall health, they will be alerted and can then go to various health service providers, where they can discuss various treatment options with professionals.

Simple personal health measurements are not enough. Technological aids are needed. That's why living is now smart in this scenario. Homes will be self-care centres, where technology throughout the apartment keeps residents informed about genetic risks and current levels of stress (and the potential connection therein).

Technology helps appraise symptoms and provides personal recommendations such as 'Reduce coffee drinking as it will weaken your ability to sleep' or 'Instead of medicine x, buy medicine y, as it will suit you better.' Health centres have all but disappeared from Finland and there are far fewer hospitals as the focus of care (preventative and otherwise) is so often found inside the home. Only the most expensive and demanding care is provided outside the home.

In the Open Health scenario, information regarding the health of a company's personnel can be presented on that firm's recruiting webpages. Not only does this indicate the general health and wellbeing of a particular workplace, but it also shifts workplaces into the role of being actors that monitor and encourage employee health.

Providing real-time wellbeing data on employees means that employers are under strong pressure to offer workplaces that support wellbeing. Typical company websites of the future highlight 'How we're doing' pages where the quality of sleep, heart rate, and physical activity development of employees are displayed while they're at work.

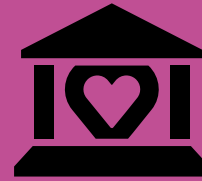
Prospering and feeling happy at work are developed in many ways: morning yoga, walking meetings, and management training that increases daily physical activity as a way of reducing insomnia owing to stress. Companies can use the information to help them with their competitiveness and indicate how they have fulfilled their social responsibility. In addition, anonymous health information is used internally and 'wellbeing workers' are seen as

a resource that spurs economic growth.

Schools compete with one another by developing each pupil's health. From the student body, it's possible to access open and anonymous health information, which increases an academic institution's attractiveness as an arena for positive health intervention.

Various indicators reveal how students' health develops from the first grade to the last grade. According to this data, schools can receive additional bonuses from the central administration. But that doesn't mean that only good health is rewarded. Owing to a supporting policy, many schools are interested in students who are in a poor state of health because their potential health development is far greater than that of those who are already in good shape. The potential bonuses for taking students from poor to good health are larger than merely maintaining good health in well students. For example, during primary school many children who have grown up with unhealthy lifestyles find sport as a hobby and learn to eat a balanced diet. With an efficient primary school system, the inequalities of health are reduced across the board.

The New Nordic Model



Health as a competitive advantage

TALKING POINTS

- Society supports social relationships by maintaining public meeting places.
- A sharing economy increases social contacts and encourages working together.
- New forms of working life and volunteering solutions foster connections between people.

KEY GOALS

- To involve companies and the unemployed in volunteering
- To pay special attention to co-operation and teamwork, and co-creation, within the education system; all strengthen ecosystem thinking
- Sharing economy solutions to support new communities
- To promote socialization (face-to-face and networking) in common areas – through urban planning

The New Nordic Model: Wellness 2050

The New Nordic Model has replaced current health policies with a culture in which health is society's central value. All state administrative areas and government policies exist to produce health.



PROBLEMS ARE SHARED and the aim is to solve them together in this scenario of the future. Wellbeing, health and participation, and competitiveness are the keys to a happy society, which is why promotion of those values is the primary goal of the New Nordic Model.

Ecosystem thinking has become the guideline for health policy. New shared economy models have been created into micro- and macroeconomic policy. To support the shared economy, decision-makers have maximized people's useable time and wealth resources in order to promote health and wellbeing and participation.

New meeting places have been created for citizens.

Maximizing individual resources and wellbeing shows in many ways. Just about everyone volunteers in some way, shape, or form. Helping others is supported in many ways. Students receive points for volunteer work in their field of study, and for the unemployed it's a way to earn so-

called citizens' pay, create contacts, and develop new skills. Those who are employed can also develop new skills and earn small compensation for helping others.

Participation opportunities for those in long-term institutional care have been developed in combination with multi-purpose housing units where it's possible for residents to help each other, thus reducing costs. For example, it's possible to rent a room for almost free in exchange for helping other residents. Many students and small income earners live with older people or developmentally challenged people, so they can cook meals for them and help with daily tasks.

Cosy social spaces are being built everywhere. The common goal is to get people to enjoy spending time together and participate in designing and decorating shared spaces. For example, in a community kitchen anyone can make food, and in many of the empty spaces, shared living rooms and shared working spaces have been created where residents can get

to know one another and keep their living costs down through sharing. In 2050 all publicly owned spaces are open to citizens for their use.

In health services, the goal is to offer empathy and supportive care, as technology takes care of routines. Doctors are mentors who discuss with customers (previously known as 'patients') their harmful lifestyle habits. Together, they consider what types of lifestyle changes or treatments should be utilized. Wellbeing coaches offer additional services. In many workplaces, instead of occupational doctors or nurses there are wellness coaches who – together with customers – look for problem-solving solutions that work in daily life.

Sharing economy operating models are evident everywhere. Some workplaces organize volunteer days, where employees participate with local charities or non-governmental organizations by visiting older people who live alone. This is not a financial burden on companies, as they receive state support for volunteer days.

Occupational health is aimed at promoting management and time management. The pillars of occupational well-

being are positive feedback, an open administration, and a pro-learning work culture.

Conflicts are resolved together. A major role of supervisor or management training is the ability to recognize human resources, working together through development and solving interaction problems.

The number of sick days and disability pensions that a company hands out are held as a failure of leadership and an under-utilization of human resources that leads to economic losses. Fast, efficient rehabilitation treatment is viewed as a more economical option. Employers pay for rehabilitation, even if workers go on disability pensions, burnout, or sick leave. For this reason, rehabilitation services are much more efficient than ever before. One's own coach – who directs, advises, and is constantly reachable – supports rehabilitation by hologram.

In schools, working together in groups and providing social support are key subjects. Peer learning is also a major goal of education. Classroom-specific grades motivate students to take others into consideration and encourage their fellow

classmates to do well. (It's a co-operation, not a competition.) It's not unusual for a class to be taught by someone other than the teacher. For example, a government minister may, on volunteer day, open up Finland's parliamentary and administrative workings to a classroom via distance learning. A wide range of contacts expands the network of students and gives them a better understanding of working life.

Hero Doctors



Expertise in supporting health choices by nudge

TALKING POINTS

- Adapting the habitat affects people's choices.
- Customized information is active information.
- Supporting good choices involves selecting key gatekeepers.

KEY GOALS

- To make efficient use of behavioural science research results
- To foster the ability to recognize a selection of potential health choices for an individual
- To ensure that gatekeepers – in the form of workplaces, schools, and cities – are all committed to supporting positive choices

Hero Doctors: Equality 2050



IN A CENTRALLY ADMINISTERED WORLD, experts use digitalization for user and experience data, and use behavioural research to shape the operating environment of daily life and develop better health services and policies.

One of the main goals of the Hero Doctors scenario is to create the same great possibilities for wellness for every member of society. Decision-makers have invested in supporting healthy choices by ensuring ergonomic workstations, urban environments that encourage daily physical activity, the availability of local food, and a clean environment. Meanwhile, choices for unhealthy and environmentally detrimental options have narrowed.

Fostering a healthy business environment has resulted in ecological values rising to the fore of health policy, as a polluted environment constitutes a major health risk. Citizens use guiding information and are supported in making better choices. For example, the garbage weight of a housing association or block of flats

is displayed on a public screen that also illustrates (and displays) each building's energy use per resident. On workplace cafeteria trays, the meal calorie count and fat percentage is displayed. A large number of companies share their carbon footprint data, which includes a calculation based on production methods and movement.

Such information's real-time display acts a control method as many health risks are fined. Living an unhealthy life may make it difficult to get affordable care as bank records can reveal regular cigarette purchases. Companies indifferent to emissions will have to pay nature endangerment fees, which will be coordinated globally.

Promoting health locally will be aided by providing local food and keeping the environment clean. The most important task for cities is to support active ecological habitat creation and maintenance.

Older people who are in poor shape will be offered an electric bike instead of a wheelchair. Rides for those with reduced

mobility will be optimized together with ride-sharing services so that many people can fit into one vehicle and the environment is not unnecessarily taxed with single-occupant vehicles.

Local food production will be supported by lower taxes and property tax discounts. Every person living in Finland will have the opportunity to buy fresh and healthy local food, regardless of income level. Restaurants that serve local food that is additive-free and organic will receive substantial tax breaks.

Services will be organized to be as efficient as possible. They will have a focus on screening and rehabilitation, as well as customer motivation. Because of genome technology, those with the most common illnesses and carriers of risk genes will receive invitations by public doctors to screenings. On the long-term care side, owing to technology many health workers will have been freed up from time-consuming tasks so that they have more time for listening and supportive work.

After receiving care, everyone can immediately rate the services they have received, which helps to continually develop better services. Feedback is visible and it's

used to actively improve health care.

Employers who keep their employees healthy will qualify for discounts on insurance. Employees who are physically active during the working day will be rewarded. Many workers will have an artificial mole (paid for by their employer) that measures activeness during the day; allowing for readings to be taken from it will bring bonuses. Adjustable levels in the forms of kinetic desks and chairs are mandatory in all workplaces to ensure ergonomic working positions. Smoking and drinking are illegal during working hours.

Encouraging people to work in pairs and instituting shorter working weeks – as automation has given people more free time – have decreased incidences of burn-out. In 2050, the majority of employers invest in occupational health questionnaires and a healthy work environment.

Sick leaves have decreased considerably as a result of healthier lifestyles.

In school, students learn a lot about themselves, where the main goal is to help individuals better understand themselves and society, so that optimal development and realization of potential is possible. For example, an entire study programme

is composed of memory and brain function modules and how they can best be positively affected. In addition, the role of schools is to teach students about society's rules and practices so that everyone who graduates has a clear understanding of how society works and the motivation to play by a common set of rules.

Worth noting in 2015

DESPITE ALL OF THE ADVANCES that we've made and the information available, not every member of society has the opportunity to choose a healthier lifestyle. A healthier lifestyle is borne from many aspects of life including community and interactions with other people. Yet, with common acts,

practices, and pricing policies it's possible to support positive development and enable choice. The real challenge is finding a way to alert decision-makers to research results and quickly sampling different types of operational models.

In all four scenarios, the big question is how to ensure that everyone has equal

opportunities to make healthy choices regardless of their background, education, life situation, or place of residence. When decision-making around health is easy, health moves to the background, as society is well and health is no longer the foremost topic.

Afterword

THIS HEALTH FUTURES RESEARCH PROJECT is part of Demos Helsinki's health and choice scenario research work. The first part of the study – Demos Helsinki's 'The Futures

of Health', published in 2014 – looked into the options for building a system of services that support choices people make relating to health. Understanding freedom of choice is important because

freedom of choice is central to personal health. The Futures of Health report revealed that a large number of modern illnesses are related to lifestyle choices and the health risks therein.

How the scenarios were built

U SING BACKGROUND RESEARCH MATERIAL such as Demos Helsinki's previous health research reports, a series of workshops (six in Finland during autumn 2014) were organized, involving more than 140 expert participants using the backcasting method.

The vision for the workshops was 'Per-

ceived health to double by 2050 with no increase in current costs.'

Backcasting is a method used to develop normative scenarios and explore their feasibility and implications. An important tool in the sustainability arena, it's used to connect desirable long-term future scenarios to the present by means of a participa-

tory process.

A list of the participants can be found in the report on the Demos website: <http://www.demoshelsinki.fi/julkaisut/terveys-2050-nelja-skenaariota-ihmislahtoista-terveydesta-ja-valinnanvapaudesta/>

