eHealth in the WHO European Region in 2015

Country experiences, trends and best practices

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World Health Organization
REGIONAL OFFICE FOR Europe

Organisation mondiale de la Santé
BUREAU RÉGIONAL DE L' Europe

Weltgesundheitsorganisation
REGIONALBÜRO FÜR Europa

Всемирная организация здравоохранения
Европейское региональное бюро

Agenda

- A brief look at WHO's work in eHealth and Health Information
- eHealth strategy development – from theory to practice. What makes a strategy successful and how can it become a tool for achieving real, tangible progress in the national context?
- A look at some examples of National eHealth Strategies from other countries. Are there commonalities?
- A look at some current trends in the development of National eHealth environments.
- Some observations of the current Portuguese eHealth environment and moving forward into the discussion on developing a future eHealth Vision for Portugal to 2020.

Fundamental views of eHealth

Improved/Integrated healthcare delivery

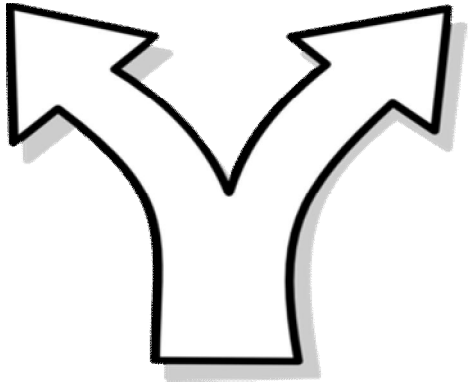
Personalized/Patient centric care models

Increased clinical efficiency

Improved treatment outcomes

Reaching a broader population base

Health systems strengthening



Universal patient & provider access to health records

Clinical registers

Semantic Interoperability

Public/Population health

Data analytics/mining

Procurement/Billing

Research/Policy

Health information quality, accessibility & use

An individual's life course perspective of the health system…

…Technology features *implicitly* and *explicitly* in their ideal delivery of integrated care.

My ideal health system:
a people-centred perspective from Portugal[1]

"In my ideal health system, I am healthy from my safe and peaceful birth to my dignified death, late in life, surrounded by my family."

> "Safety is a priority at my school and general legal requirements help keep me safe and healthy – such as fences around pools, mandatory child car seats, helmets for sports and no smoking in public places. When I go to school, the lunchroom serves healthy meals and junk food is not a part of my life."

"I have had all the vaccines currently available. My parents get texts reminding them when to take me in."

"When I have a specific question about my health, I text the cell phone of my health manager (or send an email in case of something needing a longer explanation) and they get back to me that day. They might ask me to send more diagnostic information from my cell phone. Then they either give me an answer that solves my problem or they schedule an appointment with them or the person best able to resolve my issue within the next week."

> "In the case of an appointment, I arrive on time at the government funded ... Wellness Centre, which has parking, public transport access and is wheelchair accessible. This facility, which is in my community, resolves all my ambulatory issues: vaccines, screening procedures, prenatal care and diagnostic exams, including imaging exams."

"In the case of an emergency, ... the hospital has access to my health records and my health manager. ... If my problem can be resolved at that time (stitches, cast), I'll expect to be discharged that day and to have a follow-up care appointment already booked with my health manager back at my Wellness Centre. If I need emergency surgery, I would expect to be admitted."

> "If I do [get a chronic illness], I would like to be an active partner in my care and to do as much as possible on an outpatient basis and to perform the bulk of my care via self-management. My health manager would need to be an expert in my condition and so, though I would remain connected to my primary Wellness Centre, most of my interaction would be with and via my new chronic/serious disease coordinator."

Excerpt from *The future for Health – Everyone has a role to play Calouste Gulbenkian Foundation, 2014, Appendix 2.*

Source: http://www.gulbenkian.pt/mediaRep/gulbenkian/files/institucional/FTP_files/pdfs/FuturodaSaude2014/ReportFutureforHealth_FCG2014/files/assets/basic-html/page203.html

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Geography of the WHO European Region

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53 Member States
900 million population

How does WHO deliver for eHealth?

In Europe, WHO delivers on its eHealth mandate in 3 ways:

- As a **knowledge-broker and facilitator** between nations and the International Community at large.
- By **developing and sharing best practices and standards** precipitated from successful eHealth implementations.
- By **working directly with Ministries of Health** to address their technical and strategic needs for eHealth & Health Information.

Universal Health Coverage

"In 2005, all WHO Member States made the commitment to achieve Universal Health Coverage (UHC).

The commitment was a collective expression of the belief that all people should have access to the health services they need without risk of financial ruin or impoverishment.

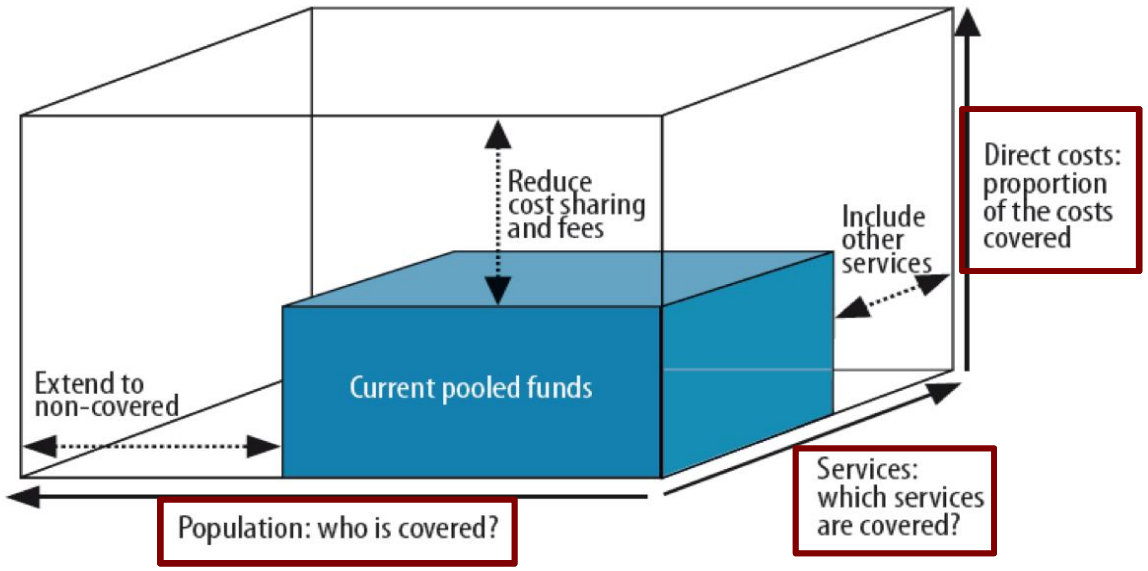
Working towards universal health coverage is a powerful mechanism for achieving better health and well-being, and for promoting human development."

World Health Report, Research for Universal Health Coverage, 2013

Universal Health Coverage

eHealth is seen as a major contributor of the "**How**" in attaining Universal Health Coverage

Three dimensions to consider when moving towards universal coverage



"How much"

"Who"

"What"

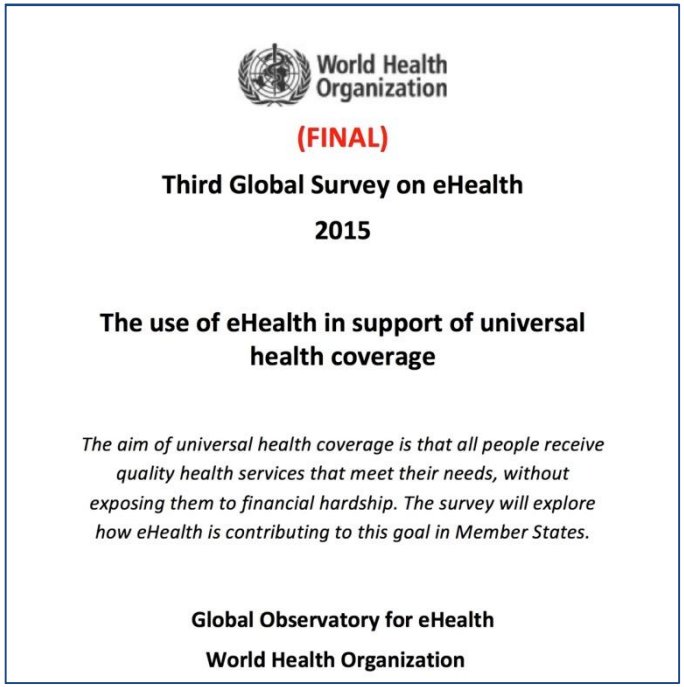
European Health Information Initiative

*The **European Health Information Initiative** is a multimember WHO network that is committed to answering the range of questions policy makers typically have in terms of the effectiveness of their policies, best available options, value-for-money, cost and implementation and to enhance the information on which policy development is based.*

European Health Information Initiative

1. Development of information for health and well-being with a focus on indicators.
2. Improved access to and dissemination of health information.
3. Capacity building.
4. Strengthening of Health Information Networks such as the Central Asian Republics Information Networks (CARINFONET).
5. Support for Health Information Strategy Development.
6. Communications and Advocacy.

WHO Global eHealth Survey 2015



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(FINAL)

Third Global Survey on eHealth

2015

The use of eHealth in support of universal health coverage

The aim of universal health coverage is that all people receive quality health services that meet their needs, without exposing them to financial hardship. The survey will explore how eHealth is contributing to this goal in Member States.

Global Observatory for eHealth

World Health Organization

Issued in March, running through to July, the Global eHealth Survey addresses the areas of:

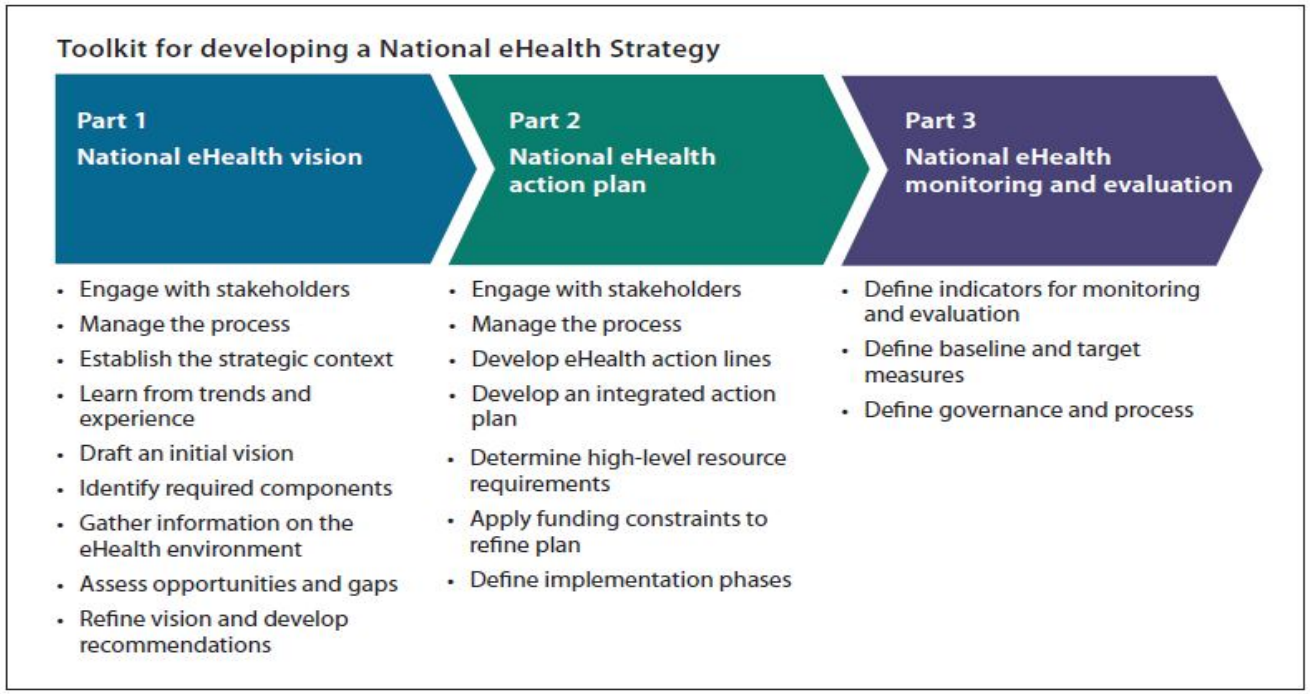
1. eHealth Foundations
2. mHealth
3. Telehealth
4. eLearning in health sciences
5. Electronic Health Records
6. Legal frameworks for eHealth
7. Social Media
8. Big Data
9. eHealth Networks

WHO-ITU National eHealth Strategy Toolkit

- A resource for developing or renewing a country's eHealth strategy
- From countries just setting out to those that have already invested in eHealth
- A framework and method for the development of a vision, action plan and monitoring framework

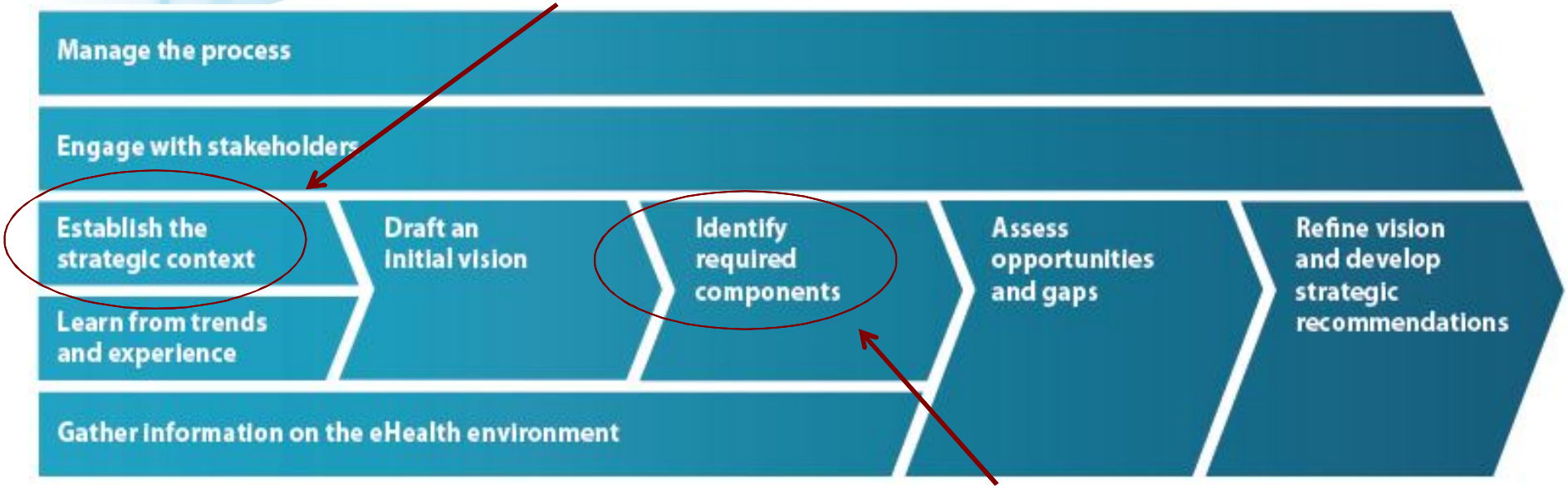
Source: Dr. Ramesh Krishnamurthy, WHO/HQ

WHO-ITU National eHealth Strategy Toolkit – High level structure



Overview of the vision development process

What contribution eHealth can have in your national context



What action/change is required and where

Establishing the strategic context for eHealth

Area	Sample questions
Population health	▪ What are the strategic goals for improving the health outcomes of the population? ▪ What challenges will be created by current and expected changes in population health?
Equity and accessibility	▪ What are the challenges impacting the delivery of equitable and accessible health services across the population?
Health workforce supply and distribution	▪ What are the challenges facing the supply of the nation's health workforce and its ability to support effective and efficient healthcare delivery at all levels of care? ▪ What are the challenges related to the distribution of a nation's health workforce and its ability to support effective and efficient healthcare delivery in metropolitan, regional, rural and remote parts of the nation?
Health system structure and organization	▪ What are the challenges caused by the existing structural, funding, governance and leadership arrangements of the nation's health system?
Effectiveness and efficiency of healthcare delivery	▪ What are the challenges that affect the quality and safety of health services delivered to the population? ▪ What are the challenges affecting the effort, time and cost associated with delivering health services to the population?
Emergence of advanced medical treatment regimes	▪ What are the opportunities and challenges associated with the emergence of advanced medical treatment regimes and the demand for these by the population and healthcare providers?
Funding	▪ What are the challenges regarding funding of national healthcare, such as the growth in public and private spending, sustainability of the health system, projected funding and its impact on future health services?

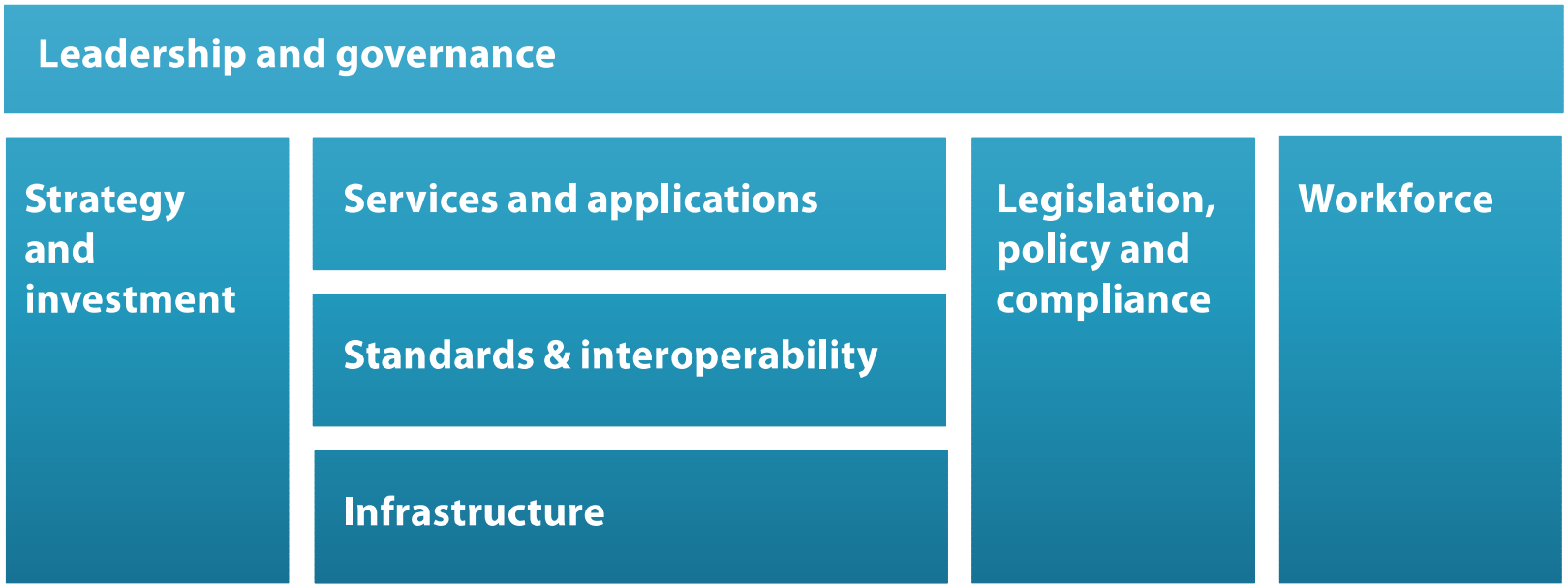
How can the application of eHealth contribute to the improvement of…

Constructing an initial vision – linked to health goals

Linking the eHealth outcome to the health goal (or challenge)

Health system goal or challenge Health workforce shortages primarily affect rural and remote communities, due to the concentration of highly trained professionals in urban areas.	
eHealth outcome Enable electronic access to appropriate health care services for patients in rural and remote communities	**Rationale** Enabling individuals to access services through electronic means will partly compensate for health workforce shortages.
Health system goal or challenge To have halted by 2015 and begun to reverse the spread of HIV/AIDS in our country.	
eHealth outcome Provide individuals with electronic access to the information they need about preventing HIV/AIDS and other diseases.	**Rationale** Access to education and awareness information about HIV/AIDs and other sexually transmitted diseases is an effective way to combat the spread of these diseases.
eHealth outcome Facilitate improved monitoring and surveillance of population health through more effective data collection, reporting and exchange.	**Rationale** Surveillance and reporting on HIV/AIDS is essential to the planning and implementation of programs aimed at halting and reversing the spread of the disease.

eHealth strategy components

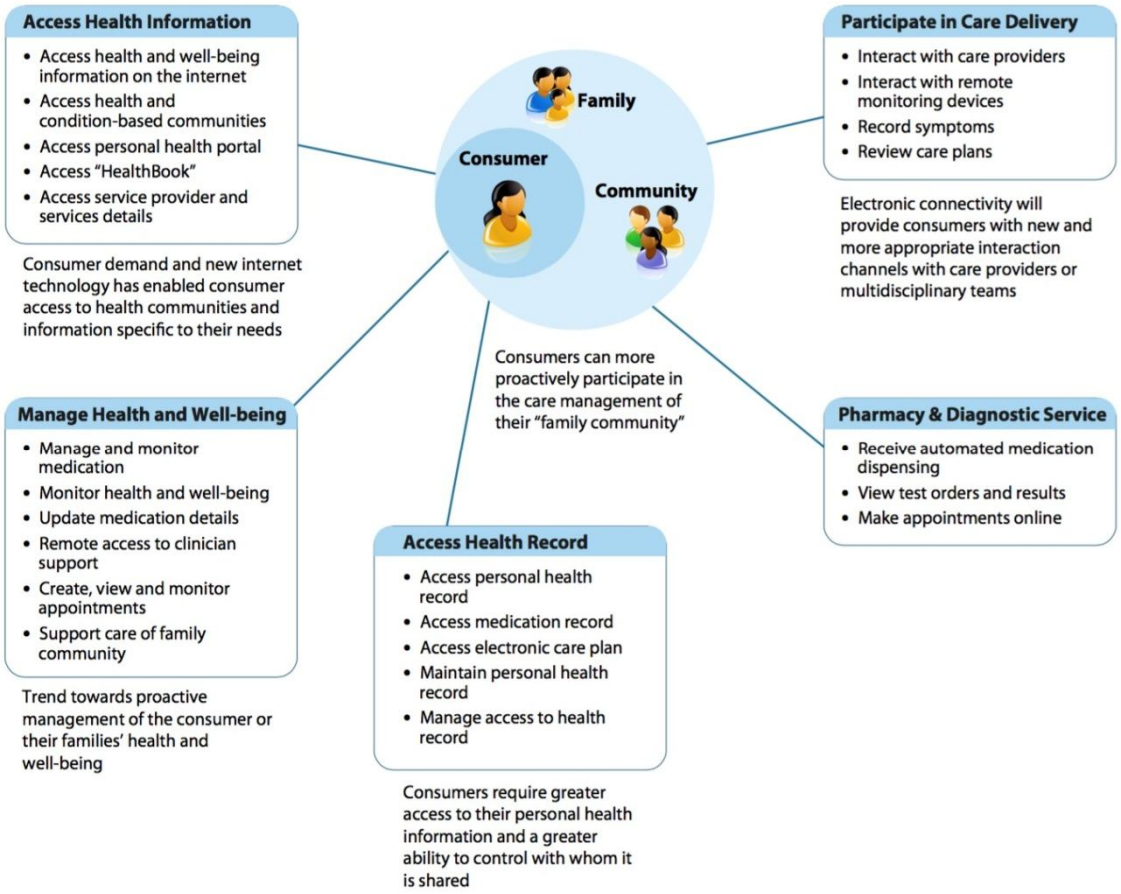


Linking between components and desired outcomes

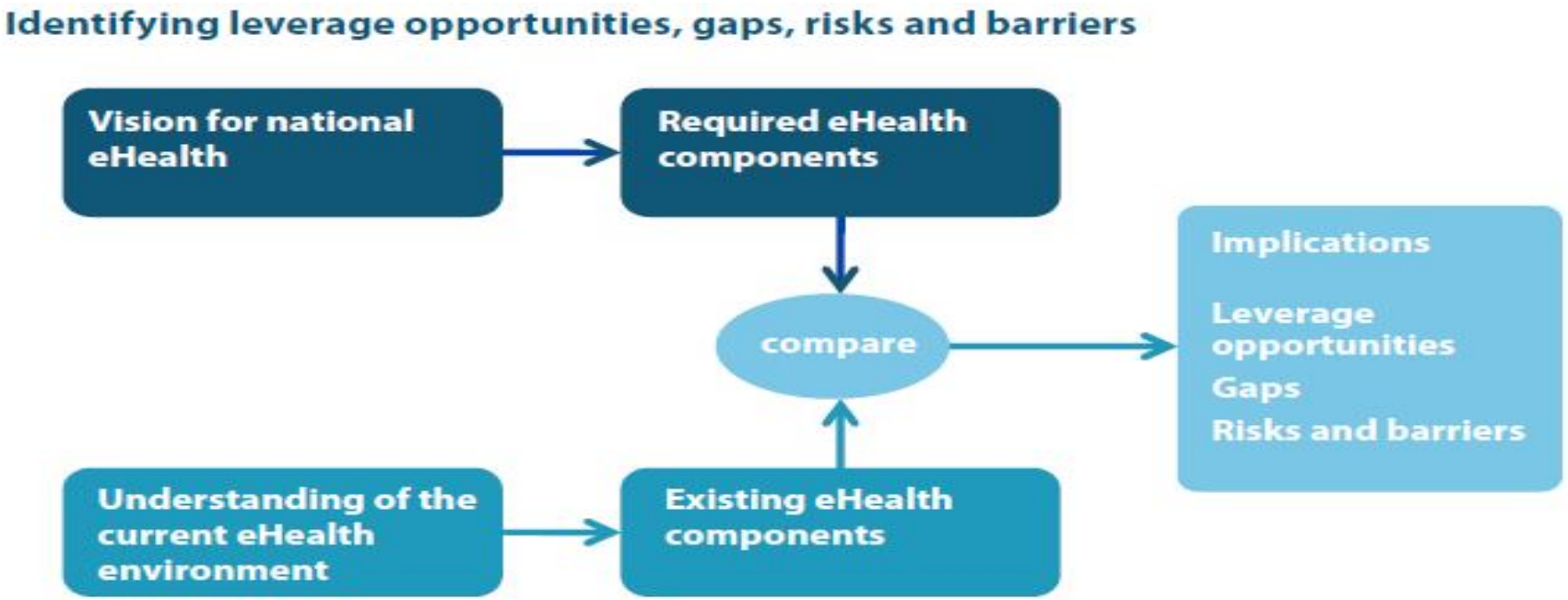
Health system goal or challenge	
Health workforce shortages primarily affect rural and remote areas and communities due to the concentration of many highly trained professionals in urban and metropolitan areas.	
eHealth outcome	**Rationale**
Enable electronic access to appropriate health care services for citizens in rural and remote communities.	Enabling individuals to access healthcare services remotely through electronic means will partly address challenges of health workforce shortages.
Required eHealth service and application components	
Service delivery channels (Telehealth)	Telehealth services for electronic consultations support delivery of quality care to individuals living in rural and remote communities affected by workforce shortages. These systems provide remote access to clinical and co-consultations in which a local care provider jointly consults with the patient.

Linking a service and application component (initiative) to an eHealth outcome

Expressing outcomes in terms of benefits for stakeholders



Applying an understanding of the existing environment & components



Methodology for developing the action plan

The process involves translating the strategic recommendations from the vision into concrete action lines (activities) within a well-structured and integrated plan, mapping out high-level resource requirements and applying funding constraints. From this, a plan broken down into several implementation phases will emerge.

Methodology for developing the M&E Framework

Involves the development of a number of indicators, their respective baselines and targets and a supporting governance process. Costs and resource allocation for monitoring and evaluation are proposed to be included as a part of the planning and costing of the national eHealth programme.

Some practical considerations on development of an eHealth vision

- Linkage to National Health Goals and priorities is recommended and provides credibility to the proposed strategic recommendation.
- Maximum of 5-7 key strategic objectives/focus areas is optimal.
- Choice of language and technical complexity should be carefully considered. As a test: Will you be able to explain the strategic objectives to an individual in your organization not involved in the development process?
- Intersectoral engagement (health, ICT, Social care, private sector, representative groups etc.) should be involved as part of the development.
- A monitoring an evaluation framework should be implemented as an integral part of the development (not as an add-on).
- Patient engagement is a crucial factor for success (arguably the most important).
- Strategic (re)alignment needs to be supported by a clear change management process (and people dedicated to managing the change).

eHealth Strategies - National examples

South Africa

health
Department:
Health
REPUBLIC OF SOUTH AFRICA

South Africa

- Good example illustrating that an eHealth Strategy doesn't need to be highly sophisticated or overly technical.
- Clear and simple statement of 10 priority areas for eHealth implementation.
- Candid assessment of their current level of eHealth maturity, where they want to be and how to get there.
- Clear linkage of eHealth's contribution to achieving 4 priority National Health Objectives.

South Africa

1.2 The 10 Strategic Priorities

Ten strategic priorities that must be addressed in order to leverage eHealth to strengthen healthcare transformation in South Africa are:

1. Strategy and Leadership
2. Stakeholder Engagement
3. Standards and Interoperability
4. Governance and Regulation
5. Investment, Affordability and Sustainability
6. Benefits Realisation
7. Capacity and Workforce
8. eHealth Foundations
9. Applications and Tools to support Healthcare Delivery
10. Monitoring and Evaluation of the eHealth Strategy

4.4 eHealth Maturity

The landscape analysis of HIS in developing countries funded by the Bill and Melinda Gates Foundation[22] provides a categorisation of five stages of eHealth maturity as countries move toward systems of greater scope, scale, and sophistication in HIS. These stages are based on data flow and collection, data utilisation and integration, resources and capacity, scope, and scale.

Stage 1 - paper-based systems for collecting district health indicators,
Stage 2 - optimisation of paper systems through simplifying indicators and reducing duplication,
Stage 3 - migration of traditional district health information systems to electronic storage and reporting,
Stage 4 - introduction of operational ICT systems as a source of data for HIS,
Stage 5 - a fully comprehensive and integrated national HIS.

This report places South Africa at Stage 3. However, eHealth maturity is linked to resource availability and as a result some provinces are at Stage 2, others at Stage 4, while some may have various regions or districts at Stages 1, 2 and 3.

In order for South Africa to move to Stages 4 and 5 it needs to:

- Implement patient-based information systems at all facilities where healthcare is delivered.
- Link all these systems to a national electronic health record system.
- Derive all indicator data from patient data captured electronically at the point of care.
- Establish a unique identifier for each South African.
- Ensure effective registration of births and death.
- Support access from all facilities to all records in other facilities.

South Africa

To address this, the National Department of Health has developed a five-year macro plan for the health sector, detailed in Outcome 2 of the Negotiated Service Delivery Agreement 2010-2014 (NSDA), which will harness the efforts of the country towards the vision of: *"A long and healthy life for all South Africans"*. The NSDA requires the health sector to achieve four outputs namely:

(i) Increasing life expectancy.
(ii) Decreasing maternal and child mortality.
(iii) Combating HIV and AIDS and decreasing the burden of disease from tuberculosis.
(iv) Strengthening health system effectiveness.

South Africa

National Health Goal

Sub-Goals

Actions

Contribution eHealth is expected to make

5.3.1 Strengthening Health System effectiveness[40, 41]

Service Delivery Interventions	Opportunity for eHealth to enable and support intervention
Strengthening Health Information Systems	
Strengthen the District Health Information System (DHIS).	• Improve ICT infrastructure and connectivity so that DHIS software can be implemented at clinics and move to a web-based, centralised platform. • Implement a national Master Facility Register.
Develop framework for a monitoring and evaluation function with Health Management Information System (HMIS).	• Improve ICT infrastructure and connectivity so that related software can be used more effectively.
Enforce common standards, norms and system across the country.	• Establish a national standards body and ISO TC 215 mirror committee. • Facilitate training in eHealth standards. • Provision of on-line training and testing on service delivery norms and standards.
Progressively design and implement a national EHR.	• Develop a national Enterprise Architecture for Health. • Implement the foundations of the EHR.
Re-engineering the PHC approach[42]	
Implement the re-engineered Primary Healthcare approach to aggressively reduce avoidable morbidity and mortality.	• Use ICT to strengthen the referral system. • Identify at-risk patients early on and refer timeously and appropriately. • Community health workers to communicate via cell-phones, send and receive data via cell-phones. • School nurses to screen children in mobile clinics and refer timeously

Actions

5.3.2 Increasing Life Expectancy

Service Delivery Interventions	Opportunity for eHealth to enable and support intervention
Prevent non-communicable diseases through education on benefits of health lifestyles.	• Communications infrastructure used for educational information channels for the public in clinics (videos) TV, satellite broadcasting, via cell-phones, community radio, web sites.
Reduce communicable diseases such as malaria.	• ICT support for data collection and reporting for intervention programmes, including the Epidemic Preparedness Response (EPR) programme for malaria.
Mobilise community through community health workers and extend care into the community using community health workers.[50]	• Community health workers communicate via cell-phones, send and receive data via cell-phones.
Establish innovative methods of early detection of non-communicable and chronic diseases.	• Communications infrastructure used for educational information channels for the public in clinics (videos) TV, satellite broadcasting, via cell-phones, community radio, web sites. • ICT support for mobile PHC facilities.
Conduct routine assessment and screening.	• Communications infrastructure used for reminders to citizens/ patients. • ICT support for data collection and reporting for assessment and screening programmes.

Contribution eHealth is expected to make

5.3.3 Decreasing Maternal and Child Mortality

Service Delivery Interventions	Opportunity for eHealth to enable and support intervention
Provide high quality antenatal and post natal services timeously.	• Use of ICT to strengthen the referral system. • Identify at-risk patients early on and refer timeously and appropriately. • Use of telemedicine to make decisions to move patients to bigger facilities. • Pregnancy and Neonatal EMR system to record clinical details – linked to EHR.
Provide accessible high quality infant and child care services.	• Mobile clinics for immunisations, post-natal care linked to EHR. • Referral system. Pick up at-risk infants and refer.


THE DANISH
GOVERNMENT
LOCAL GOVERNMENT
DENMARK
DANISH REGIONS
MAKING
eHEALTH WORK
NATIONAL STRATEGY FOR DIGITALISATION
OF THE DANISH HEALTHCARE SECTOR 2013-2017

Denmark

Denmark

- Highly polished public communications and advocacy tool.
- Clear structure with 5 high-level “focus areas”, a list of initiatives within each area and case examples.
- Usage and sharing of data are emphasized.
- Patient-centric focus

FOCUS AREA 1

HEALTHCARE SERVICES DELIVERED IN NEW WAYS

We shoul
change th
delivered.
to involve
preventio
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to release
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TELEMEI
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FOCUS AREA 2

DIGITAL WORKFLOWS AND PROCESSES

Digitalising the healthcare system will ultimately render patient pathways paperless at hospitals, in municipal healthcare services, and at the general practitioner, including practising medical specialists. Therefore, the use of paper-based health records, forms, notes, etc. should be phased out to the widest possible extent. This requires that the paper-based exchange of patient data internally at hospitals is abandoned, for example when patients are transferred from one department to another for examinations and tests.

Safety for patients will be increased if there is only one, current and up-to-date version of a patient's health record (i.e. the electronic version). Furthermore, the staff will have a better general overview of a patient's data. At the same time, the possibility for staff to record data directly in the system will streamline procedures and make the work processes more effective.

This will not only ensure real-time data; it will also ensure a greater use of data and digitalisation to support workflows, planning and documentation.

The full benefits of digital workflows
cesses across the healthcare system
be harnessed if everyone involved ta
Therefore, full use and consolidation
the healthcare sector is a challenge t
needs to be dealt with during the str
period. Central, regional and local go
ments will be launching fewer projec
and we will focus on reaping the ben
of planned and already launched proj

At regional level digital solutions will
to be found which underpin the hosp
structure and the establishment of '
acute admissions'. This requires that
emphasis is placed on fast diagnosti
evaluation, standardised workflows
patient pathways, as well as improve
resource and capacity utilisation, pla
and logistics.

Similarly, the municipalities will adva
digitally, because the new hospital st
requires strengthening of the primar
healthcare system and requires that
communication with hospitals takes place
electronically.

FOCUS AREA 3

COHERENT PATIENT PATHWAYS

Patient pathways
with many differe
healthcare system

Good digital soluti
nication, collabora
are vital for coher
patient planning.

Increased coheren
processes means
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Fast and secure a
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the data that is re
for follow-up and
in overall efforts.

The challenge is t
solutions and mor
coherent exchang

FOCUS AREA 4

BETTER USE OF DATA

We must use data to improve the quality of care for citizens and patients and to assist employees in their daily work routines. For example through efficient access to national clinical guidelines and support for decisions in daily planning and treatment. Similarly, in the future, data will be used to improve quality, in administration and for research activities.

Danish health data and registries are world class. The high quality and relevance of Danish registries are closely linked to the fact that much of the data is acquired as a part of daily routines in the healthcare sector. If Denmark is to maintain its position in this field, we have to develop the way we submit, store, share and use data, to the benefit of patients, health professionals, researchers and businesses.

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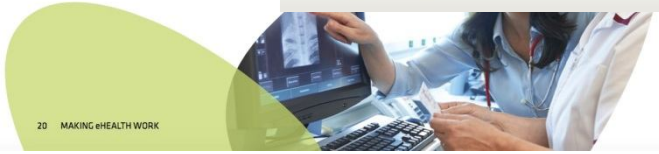

FOCUS AREA 5

GOVERNANCE

Large and rapid digital changes need to be implemented in the healthcare system in the coming years. This requires clear goals and a clear division of responsibilities, along with actual capacity to implement the changes and transparency about progress and results.

The parties behind the strategy have agreed to retain the division of responsibilities that was decided between the Danish government and Danish Regions in the 2010 eHealth agreement and which was also recommended in the evaluation of the municipal structural reform. This division of responsibilities means that the regions will be responsible for ensuring efficient and effective eHealth at all Danish hospitals, including responsibility for procurement, development and operation of ICT solutions as well as for optimal ICT solutions in support of workflows and patient treatment. Central government will be responsible for determining the legal framework and standards for use of the ICT, for ensuring that relevant data is shared across the healthcare sector, as well as for realising cross-sectoral ICT projects and national infrastructure.

In this *National Strategy for Digitalisation of the Danish Healthcare Sector 2013-2017*, the municipalities will be included in the same governance and will follow the same basic principles as the regions and central government.

The course agreed in the regional 2011 budget agreement will be strengthened and expanded, so that the development across local, regional and central governments is coordinated from a shared perspective. The primary challenges include:

- Ensuring that the National Board of eHealth to a greater extent constitutes the framework for binding collaboration on overall coordination of eHealth in Denmark.
- Successful implementation of joint projects requires coordination between regions, municipalities and general practitioners.
- Work to establish a national public sector ICT infrastructure must be strengthened and made clearer. The de-centralised projects lack sufficient coordination with the development of a national ICT infrastructure.
- There is no overview of the most important digitalisation projects in the healthcare area, and this makes it difficult to follow up and adjust projects in time.
- The development of common eHealth solutions is made difficult by the fact that ICT systems in the healthcare sector use different standards. New solutions must be implemented via five regional system environments, three municipal electronic care record systems and about ten general practice systems, while suppliers have to receive order entries from five regions, 98 municipalities and 3600 general practitioners. This challenges the rate of introduction and cost-effectiveness of eHealth development.
- There is a growing need for a uniform implementation effort because the introduction of more eHealth solutions will bind the healthcare sector closer together, and because the benefits will not be achieved until the solutions have been taken into use by all parties.

A stronger digitalisation effort requires closer and more binding coordination and priority-setting. Projects and initiatives that affect all parts of the healthcare system must be planned and coordinated across the public sector to take account of the challenges linked to having to work closely together across sectors.

research and therefore contribute to ensuring promotion of the correct and most efficient and effective choices in daily patient treatment and care.

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THE DANISH GOVERNMENT
LOCAL GOVERNMENT DENMARK
DANISH REGIONS
AUGUST 2012

NATIONAL ACTION PLAN FOR
DISSEMINATION OF TELEMEDICINE
– IN BRIEF

TELEMEDICINE – A KEY TO HEALTH SERVICES OF THE FUTURE

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INITIATIVE 1

CLINICALLY INTEGRATED **HOME MONITORING**

INITIATIVE 2

HOME MONITORING FOR **COPD PATIENTS** IN THE NORTH DENMARK REGION

Over the next two years 1,440 patients from northern Jutland with severe or very severe COPD are to be treated through telemedicine. In doing so, the North Denmark region, for the first time in Denmark, is introducing home monitoring in daily operations throughout the region. This means that 11 municipalities, all general practitioners and all relevant patients are included. Important new knowledge will be obtained about large-scale home monitoring operations making it possible to disseminate the solution to the entire country and to other groups of patients suffering from a chronic disease.

KNOWLEDGE ABOUT HEALTH INVOLVES THE PATIENT

Patients with severe or very severe COPD have many contacts with the health service and the municipal home care system in relation to treatment, check-ups and rehabilitation. In general, they are hospitalised many times during the course of a year but it is difficult for them to participate in the subsequent rehabilitation. This makes it hard for the patients to manage their illness, maintain their physical level of functioning and notice deterioration of their health in time.

COPD patients in Northern Jutland will recieve IT equipment in their homes to support care, treatment and active patient involvement. The patients will carry out daily or weekly health measurements – for example of their lung capacity and blood oxygen levels. This will give both the patients themselves and health professionals knowledge about the development of the disease. The information will be collected in a joint database that all relevant health professionals in hospitals, at the general practitioners and in the municipality have access to through their local IT systems (for example electronic medical records etc.).

Generally, it is the responsibility of the municipality to monitor the data received and involve the hospital when necessary. Both patients and their relatives can access the patient's data via sundhed.dk.

REUSE AND NEW DEVELOPMENT OF IT SOLUTIONS

The project makes use of the same technical infrastructure and assessment concepts as the project 'Clinically integrated home monitoring' (see page 10). This will provide more experience with the technical solution (existing national dataset, infrastructure

INITIATIVE 3

DEMONSTRATION AND DISSEMINATION OF **TELEPSYCHIATRY**

INITIATIVE 4

DEMONSTRATION OF **INTERNET PSYCHIATRY**

From autumn 2012, the Regi
Denmark will test whether p
treatment through an online
can help patients suffering f
It is estimated that approxi
Danes suffer from depressio
of whom do not receive any
The regions' expenditure on
patients with mild to moder
has significantly increased ir
Simultaneously, there is a la
in psychiatry, which is expect
in the years to come.

Early treatment for depressi
the patients and the econon
the chances of recovery and
a higher quality of life. At th
it reduces expenditure on sic
retention on the labour mar
that the patient's mental illr
to excessive use of other he

INITIATIVE 5

DISSEMINATION OF TELEMEDICAL **ASSESSMENT OF ULCERS** TO ALL REGIONS AND MUNICIPALITIES

35-40,000 people in Denmark are estimated to have ulcers on their feet or legs as a consequence of diabetes or reduced vein function. The ulcers heal slowly and there is a risk of grave complications that in the worst case can lead to amputation. Ulcers often need several treatments before healing, among other things because the patient's underlying disease does not disappear.

On 1 September 2012, Denmark' first nation-wide telemedicine project ever will start: telemedical assesment of ulcers. By using telemedicine, the municipal home care system together with the doctors at the hospital will be able to treat patients' ulcers more efficiently and with greater patient satisfaction.

TELEMEDICINE BENEFITS THE PATIENT AND SAVES RESOURCES

When the home care nurse visits the patient, she takes a photo of the ulcer with her mobile phone. She forwards the image to a web-based ulcer record, and then enters all her observations on the ulcer on her tablet PC – size, infection etc. – into the record.

A doctor or specialised nurse at the hospital will examine the image and the notes in the record and write a reply, for example with new instructions for treatment or new medication. The patient can also access his or her own record and monitor development in the treatment – and, moreover, will not have to interrupt everyday life to attend the hospital for treatment.

With telemedicine the home nurse gets to confer with an ulcer expert – and she gradually becomes more skilled. The ulcers heal faster when the quality of treatment improves. This means fewer visits from the municipal nurses and less expenditure on transporting fragile patients to and from the hospital. Specialists at the hospitals save time when they only have to attend to patients with the most complicated ulcers.

NEW ROLES ACROSS THE SECTORS

The technology supports and improves cross-sector cooperation between municipal nursing and regional ulcer treatment at the hospitals. The treatment does not change, only the way it is delivered.

The roles are new and competence has been shifted. The project exemplifies that if providing better treatment for fewer resources is to succeed, the parties involved – as in this case – must agree on new work procedures and ways of cooperating.

>>>>>
The solution will be fully implemented throughout the country in 2017 – i.e. in all regions and municipalities and for all relevant patients. Preliminary assessments show that the health service will save more than DKK 300 million (EUR 40 million) a year by using telemedical assesment of ulcers. In terms of these assessments, the municipalities can look forward to saving an annual total of DKK 250 million (EUR 34 million), while the regions will save DKK 45 million (EUR 6 million) a year.


eHealth
Strategy
for Ireland
Tús Áite do Shábháilteacht Othar
Patient Safety First
An Roinn Sláinte
DEPARTMENT OF HEALTH

Ireland

Ireland

- Describes clearly how the strategy development process has taken place
- Proposes 7 actions to realise eHealth strategy objectives (including potential priority projects)
- Focus on outcomes for the different stakeholder groups
- Places emphasize on governance as a key enabler
- Recognizes the need to reengineer work practices/processes
- Places a lot of emphasis on “what” but not “how”
- Enhanced by a supporting website http://www.ehealthireland.ie

eHealth (Electronic Health) involves the integration of all information and knowledge sources involved in the delivery of healthcare via information technology-based systems. This includes patients and their records, caregivers and their systems, monitoring devices and sensors, management and administrative functions. It is a fully integrated digital 'supply chain' and involves high levels of automation and information sharing.

Actions to Realise eHealth Strategy objectives

1 Ensure that eHealth is utilised to place the patient firmly at the centre of the new healthcare environment as outlined by the EU's eHealth Action Plan 2012-2020. This will include developing programmes to encourage and strengthen engagement, facilitate informed participation in the care process and increase health literacy.

2 Establish over time a dedicated, focused and strongly branded entity *'eHealth Ireland'* to oversee Ireland's eHealth journey and ensure maximum return for Ireland's population wellbeing and economy as a whole.

3 Potential priority projects:

- National Health Identifier Infrastructure.
- ePrescribing Systems.
- Online Referrals and Scheduling.
- Telehealthcare - particularly relating to the management of chronic diseases.
- Development of Patient Summary Records.
- Online Access to Health Information.
- National Patient Portal.

4 Establish specific functional workstreams involving all appropriate stakeholders to address the major deployment enablers including;

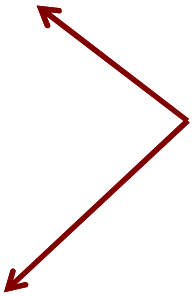
- Appropriate funding models for programs.
- Change management and adoption processes
- Healthcare informatics resources and the development of appropriate health informatics skills.
- A standards-based, multi-layered information and technical infrastructure to provide a common platform for eHealth deployments.
- Appropriate legislation around trust, privacy, security and data protection
- Public engagement, awareness and uptake.

5 Establish an eHealth Ecosystem involving the Departments of Health, Jobs Enterprise and Innovation, Education and Skills, Environment, the Healthcare Delivery system, Industry, Academia, the Research and Development communities and the voluntary sector.

6 Each government department and agency with a role in exploiting the potentiality of eHealth must develop strategies for actions to realise the economic benefits of eHealth.

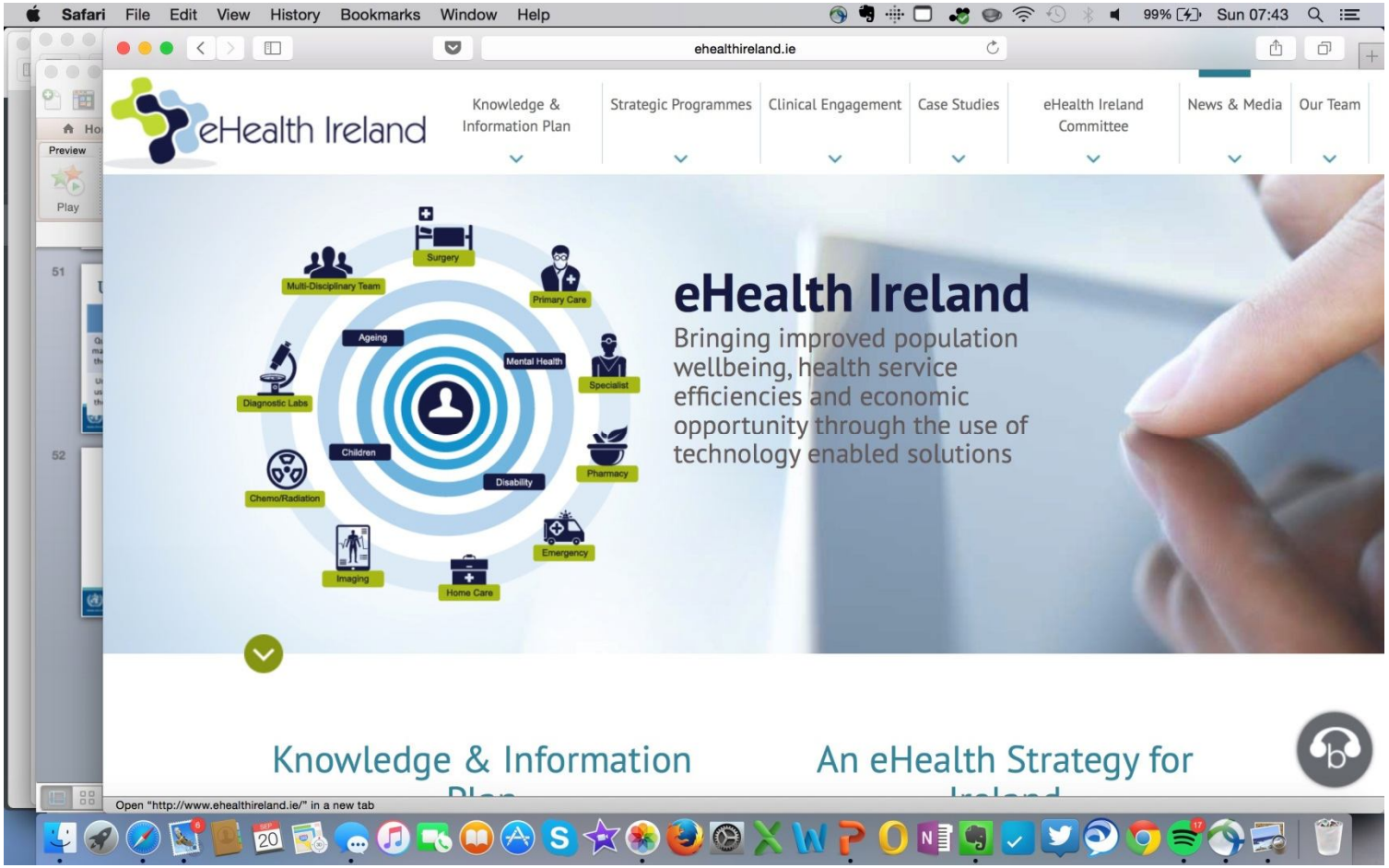
7 A new IT strategy for the health system as a whole will be published in early 2014 by *eHealth Ireland* working closely with the SRG, the Department of Health and other relevant Departments and organisations.

Healthcare Management	» National healthcare ICT spend re-aligned to the EU average of between 2-3% (from 0.85%). » Cost and performance information for healthcare systems is transparent and easily accessible supporting the reform process. » Accurate quality data is now available for forecasting, budget management and service planning and development. » Institutions are making patient data available securely as needed to better plan care pathways. » High quality data sets are available to indicate public health trends and inform regional and national policy. » The information and process management infrastructure has been developed and implemented to provide for integration of the information access and management requirements of the acute, primary and social care systems.
Business and Economic	» The eHealth Ecosystem has been established. » Relevant government departments and agencies have developed and implemented strategies to realise the potential of eHealth. » Ireland is internationally recognised as a proactive developer of eHealth systems and services. » The support for entrepreneurship in eHealth is embedded throughout the relevant government departments, state agencies, industry and academia. » eHealth start-ups are acknowledged as a key element in the Enterprise Ireland High Potential Start Ups (HPSUs) initiatives. » Specialised and focused eHealth start-up supports and incubators have been established by the relevant state agencies. » Specialised funds (VC and others) are now available in Ireland. » eHealth services markets are very active and are demonstrating strong export returns. » More multinationals have based their eHealth R&D and product development in Ireland. » Strong engagement with the EU in its Horizon 2020 program. » Jobs related to eHealth have been created. » Courses to develop and support the eHealth skills base are available in many third level institutions.



Stakeholder benefits

Ireland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Clinical Engagement
Case Studies
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Primary Care
Ageing
Mental Health
Specialist
Diagnostic Labs
Children
Pharmacy
Disability
Chemo/Radiation
Emergency
Imaging
Home Care
eHealth Ireland
Bringing improved population wellbeing, health service efficiencies and economic opportunity through the use of technology enabled solutions
Knowledge & Information
An eHealth Strategy for
Open "http://www.ehealthireland.ie/" in a new tab

Ireland

Knowledge & Information Plan

The knowledge & Information strategy builds upon the eHealth Vision for Ireland, and outlines how integrated information and enabling technology will support the delivery of innovative, safe and high quality patient care to meet the needs of our population across all patient pathways and care settings. This strategy also outlines how we transform our organisation to meet the delivery challenge ahead.

Read the Plan Online

Download the Plan (PDF 10.2MB)

An eHealth Strategy for Ireland

eHealth (Electronic Health) involves the integration of all information and knowledge sources involved in the delivery of healthcare via information technology-based systems. This includes patients and their records, caregivers and their systems, monitoring devices and sensors, management and administrative functions. It is a fully integrated digital 'supply chain' and involves high levels of automation and information sharing.

Download the eHealth Strategy (PDF 3.2 MB)

Ireland


Five eHealth Ireland focus areas
Identified in engagement with HSE Leadership & Clinicians
Care Delivery Enablement
Electronic Health Records
Cross Setting Information Integration
Health Service Insights
National Support Systems

Capability	Patient	Care Providers	Health System
Care Delivery Enablement	**Better quality of care and a seamless patient experience** › Greater coverage of electronically supported care delivery (instead of paper based) – allowing the information generated in specific care delivery situations to be used in the future (underpins the electronic health record and patient-centric view of care history) › Better diagnosis capability with decision support › Improved specific care outcomes through use of enhanced capabilities › Less risk of errors **More flexible care experience and ability to self service** › Ability to schedule appointments based on patient choice over provider services › More transparency over own care	**Greater clinical efficiency and quality** › Increased use of information, decision support & automation (e.g. radiology and laboratory alerts based on abnormal results) › Improved consistency of care within the hospital as systems are integrated **More efficient management of clinical and other resources** › Facilitates an automated flow from appointment booking through to rostering across the entire patient journey › Helps balancing patient demand with capacity across facilities (e.g. across a hospital group)	**More clinical and administrational data, to allow better planning and management** › Improves quality and quantity of data captured electronically › Patient safety and outcomes improved through stronger clinical capabilities **Enabling system-level efficiencies** › Efficiency gains through automation at all stages of care delivery and greater levels of patient self service

Strategic Focus area

Beneficiaries

Expected benefits - The “how”!

Key eHealth User Experiences				
Patient 	***"I don't have to provide all of my information again and again"*** - Electronic Health Records	***"I don't have to go to the doctor as much as I used to. Now I just do the tests at home"*** - Care Delivery Enablement	***"I can check my medical records online to check how something was treated before"*** - Cross Setting Information Integration	***"I can request prescription, appointments and check results from home"*** - Cross Setting Information Integration
Hospital Doctor 	***"I can see my patients medical history, regardless of where treatment took place"*** - Electronic Health Records	***"I can consult support tools to help me make a decision"*** - Electronic Health Records	***"I can request tests and issue prescriptions electronically, saving critical time"*** - Electronic Health Records	***"Funding for my service is responsive to the number of patients needing my help"*** - National Support Systems
Community Nurse 	***"I can see my patients medical history, regardless of where treatment took place"*** - Electronic Health Records	***"Collaborating with my colleagues is now easier as we can share and update care plans"*** - Electronic Health Records	***"I have my tools available on my mobile when out visiting patients"*** - Care Delivery Enablement	***"I can submit test requests and referrals to others electronically"*** - Electronic Health Records
Physiotherapist 	***"My time is well utilised as referrals and bookings happen electronically"*** - Care Delivery Enablement	***"I can capture my patient notes as I go on my tablet in the treatment room"*** - Care Delivery Enablement	***"I can check how my patients are doing as they log their progress on the portal"*** - Cross Setting Information Integration	***"I can update my colleagues who are also treating my patients"*** - Electronic Health Records
Hospital Group Manager	***"I can manage my beds more effectively as I can predict how many***	***"I can see resource availability across my hospital group and***	***"I can manage patient safety closely with detailed reports on***	***"I can review performance across all of my hospitals to see***

Vision expressed as "future state testimonials" by individuals engaged in different ways with the health sector


INFORMATION TO SUPPORT
WELL-BEING AND
SERVICE RENEWAL
eHEALTH AND eSOCIAL STRATEGY
2020

Finland

Finland

- Clear statement of social context of eHealth
- Patient-centric focus as a healthcare partner
- International, as well as national focus

Finland

The social welfare and health care service must be client-centred. The services must be effective and equally accessible to everyone. A precondition for this is that the exchange of information and multiprofessional cooperation between different actors in the social welfare and health care sector is functional, safe and based on the patient's preferences.

Citizen's mobility and increasing freedom of choice also require cross-border exchange of information and closer EU level cooperation in information management. Better utilisation of information also plays a key part in research and innovation activities. To this end, it is necessary to develop legislation and interoperability, both nationally and internationally.

Finland


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INFOSTRUCTURE
– ENSURING A SOLID FOUNDATION
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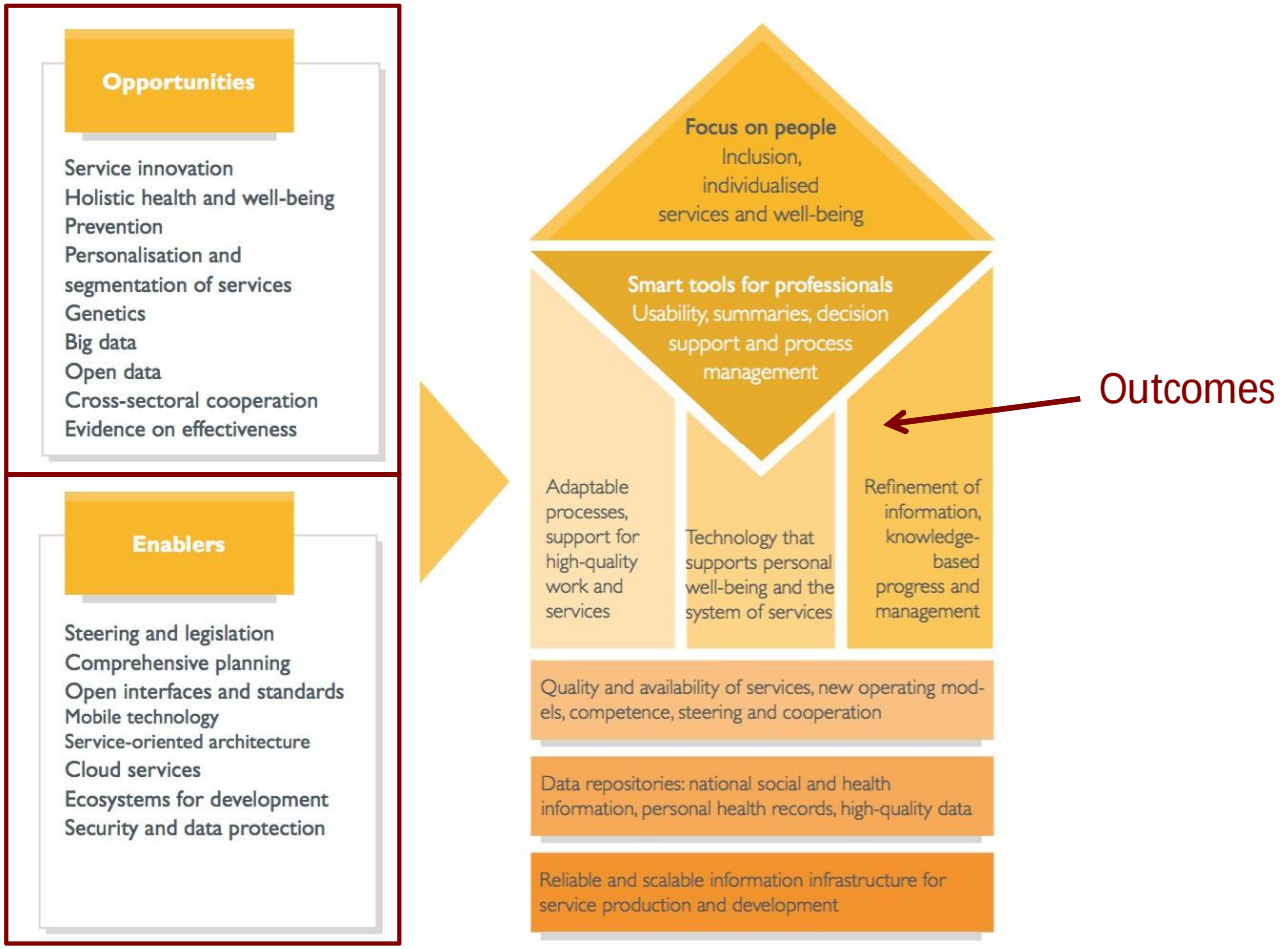
Responsibility fo
Infostructure includes ICT services, platforms, and standards and definitions regarding both content and technology that support the dissemination of information and interoperability. Strategic objectives associated with the activation of citizens, increasing the effectiveness of the service system, and the secondary use of information require that IT solutions are built on an open and scalable platform using jointly agreed-upon operating methods. The entity must be modular, open and developed in a controlled manner, and it must allow for the renewal of services, structures and technological solutions. This also requires a cooperative and networking method of developing solutions that encourages experimentation with different types of solutions and compiling evidence of solutions that produce the desired effect. Solutions that have proved effective will be effectively mainstreamed in broad-based use, and new services and products will be developed based on them.
Strategic objectives
Interoperable and modular architecture
Structured information will be consistent at the national level, and national definitions of information architecture will be in use by the sector as a whole. Open interfaces and international standards will enable interoperability. A national service architecture will be used in the development of social welfare and health care services. Efforts will be made to harmonise information system solutions in social welfare and health care regions based on a jointly agreed-upon architecture. Information systems for the social welfare and health care sector will be designed and implemented in a modular fashion, so that, utilising expertise available on the market, information system services can be developed, procured and adjusted to the changing needs of the sector. An entity consisting of interoperable systems allows for an open development path and effective competitive tendering processes that are based on user needs.
Information security i.e. the accessibility, integrity and protection of data
will be ensured in all national and regional information system solutions
Sufficient data connections will be ensured.
Cooperation in development and procurement
New solutions will be developed through close and broad-based cooperation between users and suppliers. National dissemination of new solutions will be ensured.
Procurement procedures used will befit the goods and services to be purchased and be carried out in close cooperation between buyers and suppliers.

VISUAL SUMMARY



Trends in national eHealth environments

Estonia

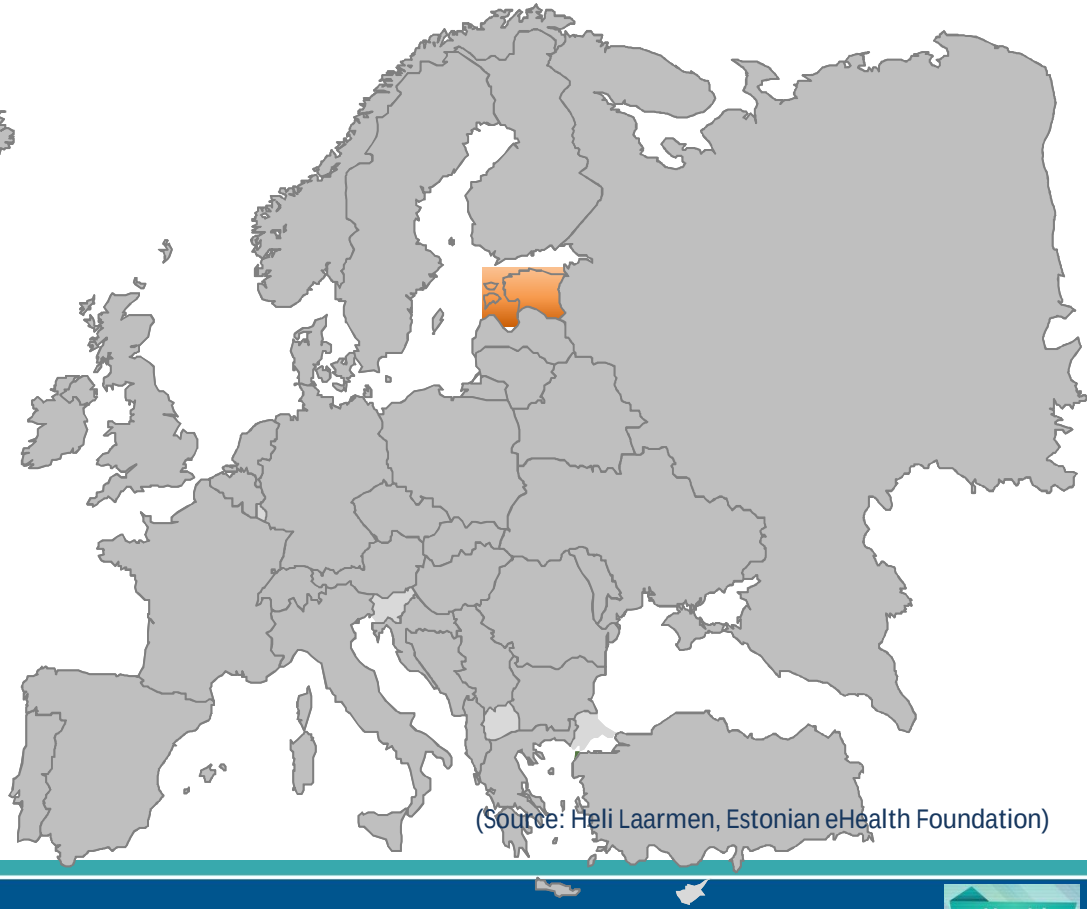
Estonia

45 227 km²	area of Estonia
1.3 mio	inhabitants
70	hospitals
779	GPs

Funding of healthcare

Solidarity-based mandatory health insurance contributions in the form of earmarked social payroll tax (about 2/3 of total health care expenditures).

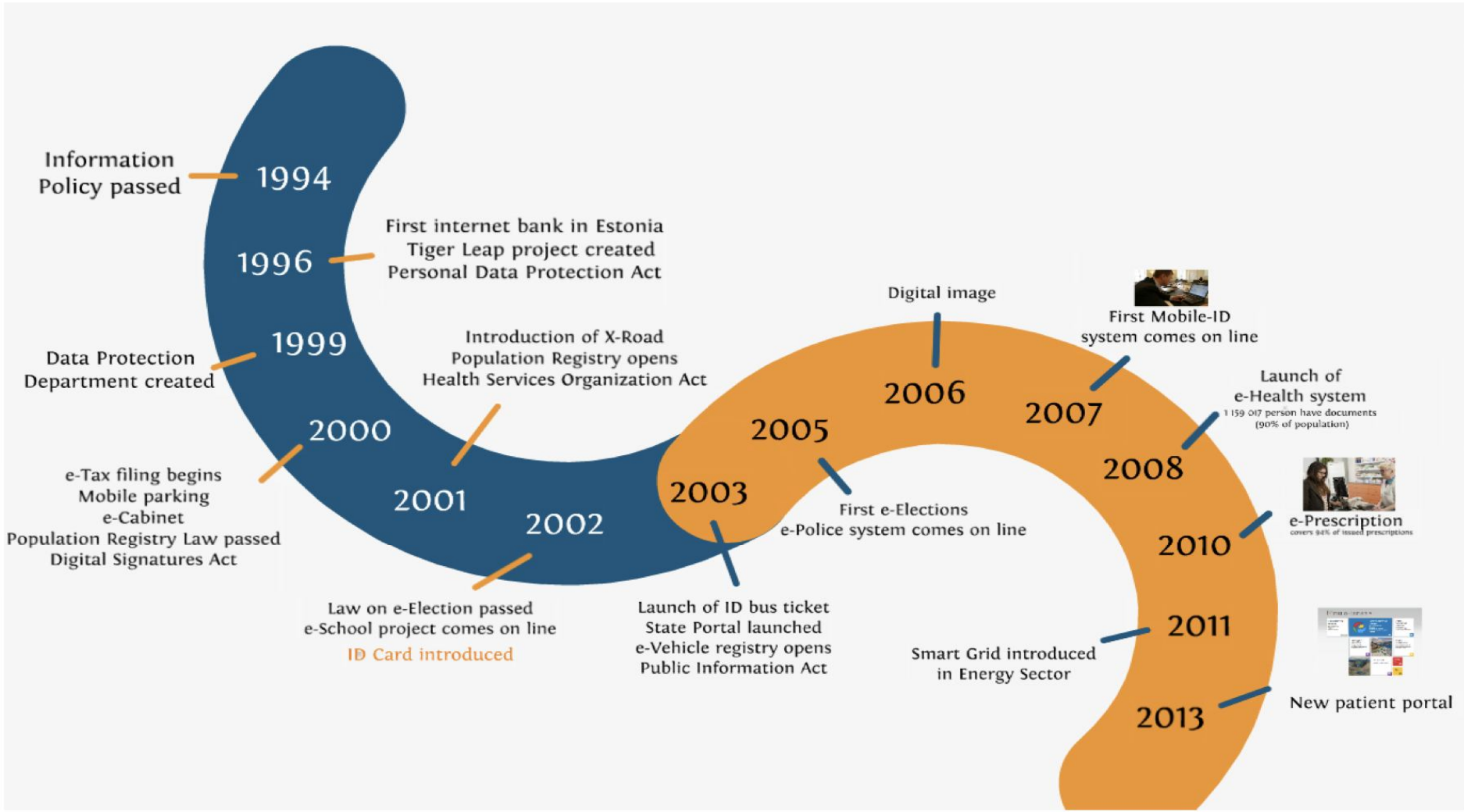
Healthcare expenditures accounted for 6.9% of GDP in 2013.

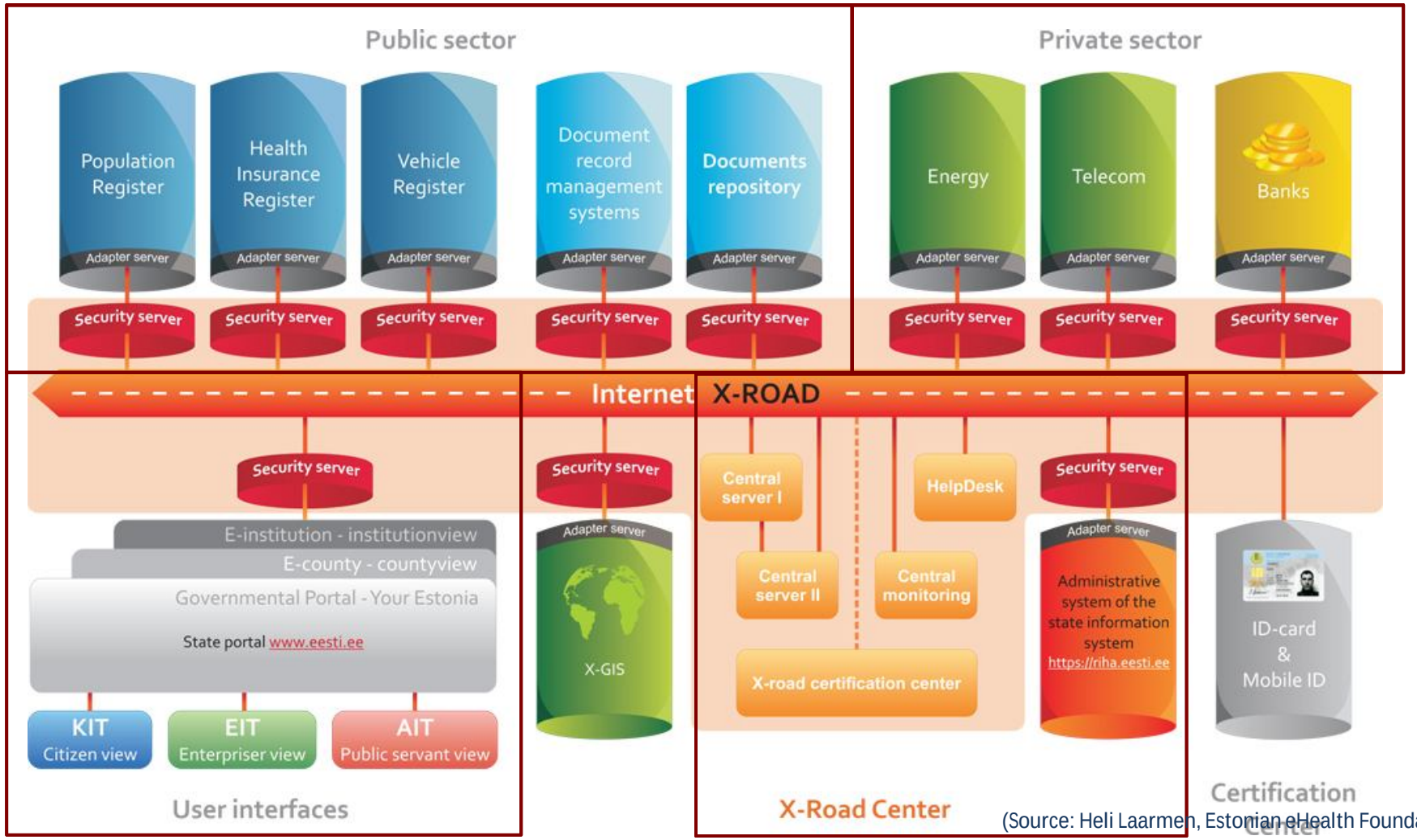


(Source: Heli Laarmen, Estonian eHealth Foundation)

World Health Organization
REGIONAL OFFICE FOR Europe

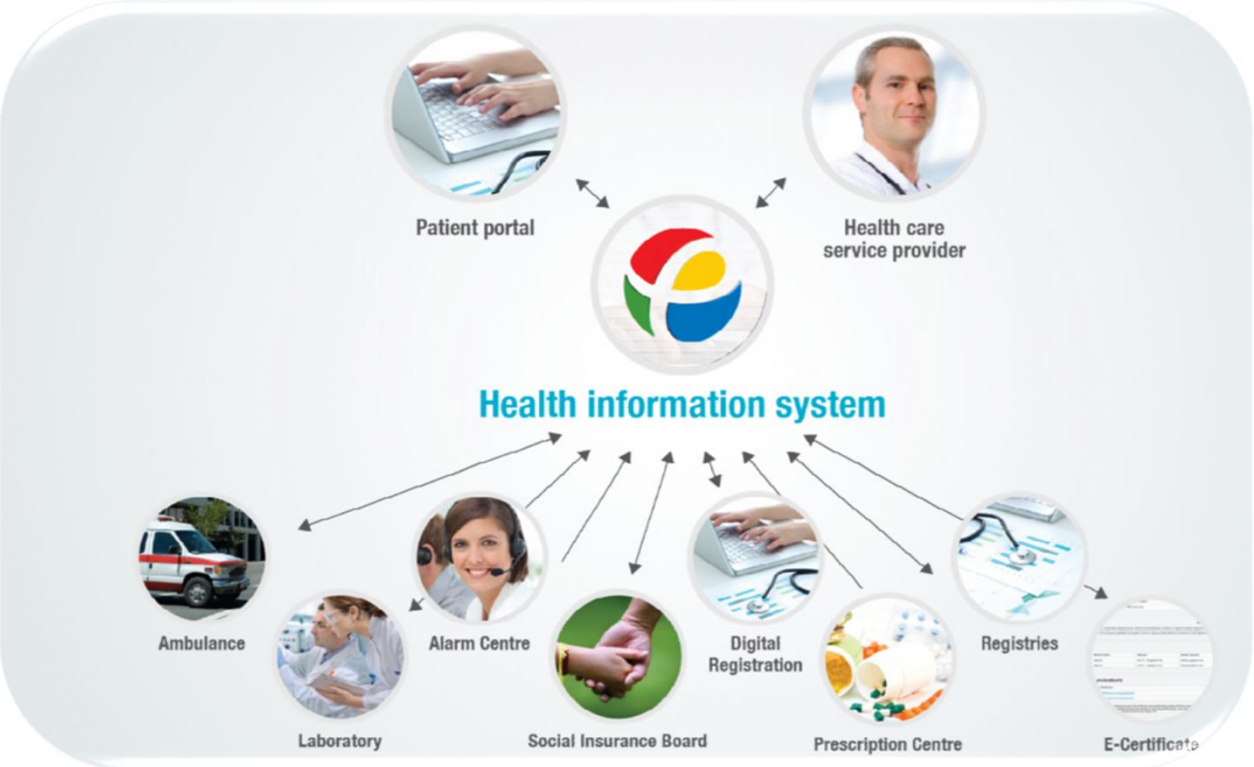
eHealth Portugal Visão 2020 thinktank


Information Policy passed
1994
First internet bank in Estonia
Tiger Leap project created
Personal Data Protection Act
1996
1999
Data Protection Department created
Introduction of X-Road
Population Registry opens
Health Services Organization Act
2000
e-Tax filing begins
Mobile parking
e-Cabinet
Population Registry Law passed
Digital Signatures Act
2001
2002
Law on e-Election passed
e-School project comes on line
ID Card introduced
2003
Launch of ID bus ticket
State Portal launched
e-Vehicle registry opens
Public Information Act
2005
First e-Elections
e-Police system comes on line
2006
Digital image
2007
First Mobile-ID system comes on line
2008
Launch of e-Health system
1 159 017 person have documents (90% of population)
2010
e-Prescription
covers 94% of issued prescriptions
2011
Smart Grid introduced in Energy Sector
2013
New patient portal



(Source: Heli Laarmen, Estonian eHealth Foundation)

National eHealth Services



16,735,669 medical documents (18 different types) for **1,358,625** persons

843 healthcare providers (registered individuals) are integrated with the central health information system

84.2% of the population (16–74) is using the Internet

82.9% of households have Internet access in Estonia

(Source: National Information System Authority, Heli Laarmen, Estonian eHealth Foundation)

Role of the Estonian eHealth foundation

- Housing Health Information System (HIS) and other supportive systems
- Development and administration of e-health services at the national level
- Coordination of information systems harmonization used by medical professionals
- To lead administration of process standardization, including classifications
- International cooperation
- Scientific cooperation with universities

(Source: Heli Laarmen, Estonian eHealth Foundation)

Estonian national patient portal

Estonian national patient portal

- Lastest version in operation since 2013
- Logon with National ID Card or Mobile ID

Patients can:

- See all medical documents from the central Health Information System
- See all ePrescriptions (from Health Insurance Fund)
- Compile health declaration
- Compile and electronically sign different types of “expression of will”
- See time-critical medical data
- Access health insurance validity
- View and update personal data / Track usage of personal data
- Nominate contact person and give details about him/her
- Give access to a trustee
- Mask all data at once or by single documents to health care professionals/trustees

(Source: Heli Laarmen, Estonian eHealth Foundation)

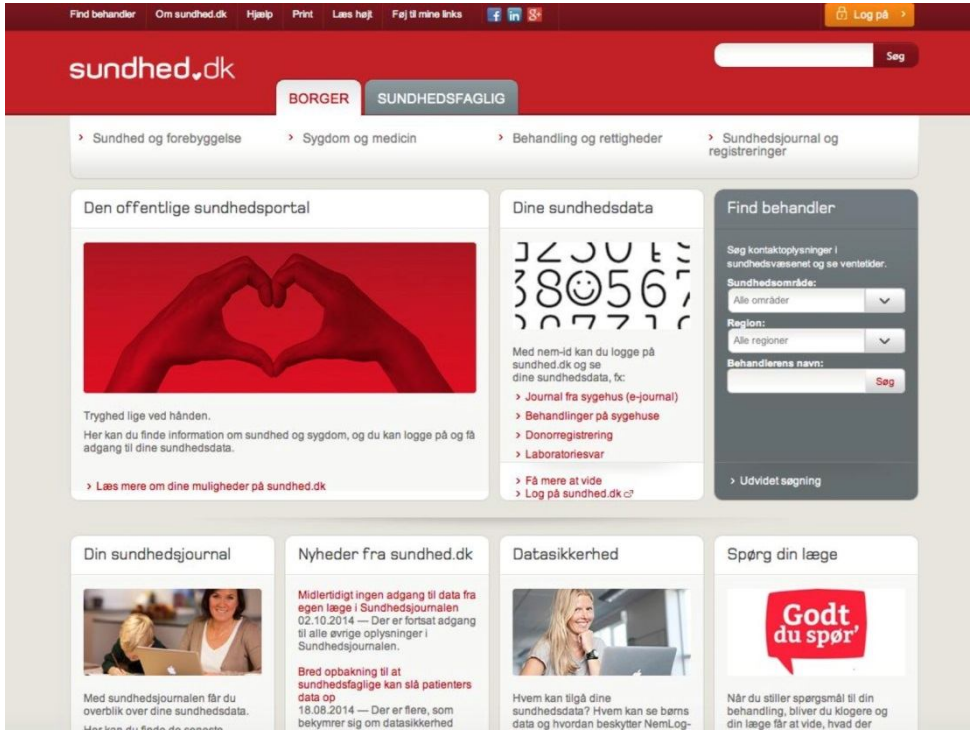
Usage of the Estonian national patient portal

	30.12.2010	30.12.2011	30.12.2012	30.12.2013	30.12.2014
Queries made via the NPP	531,035	1,098,201	1,754,688	2,950,650	4,503,036
Unique users of the NPP	23,458	38,631	48,386	61,256	82,419

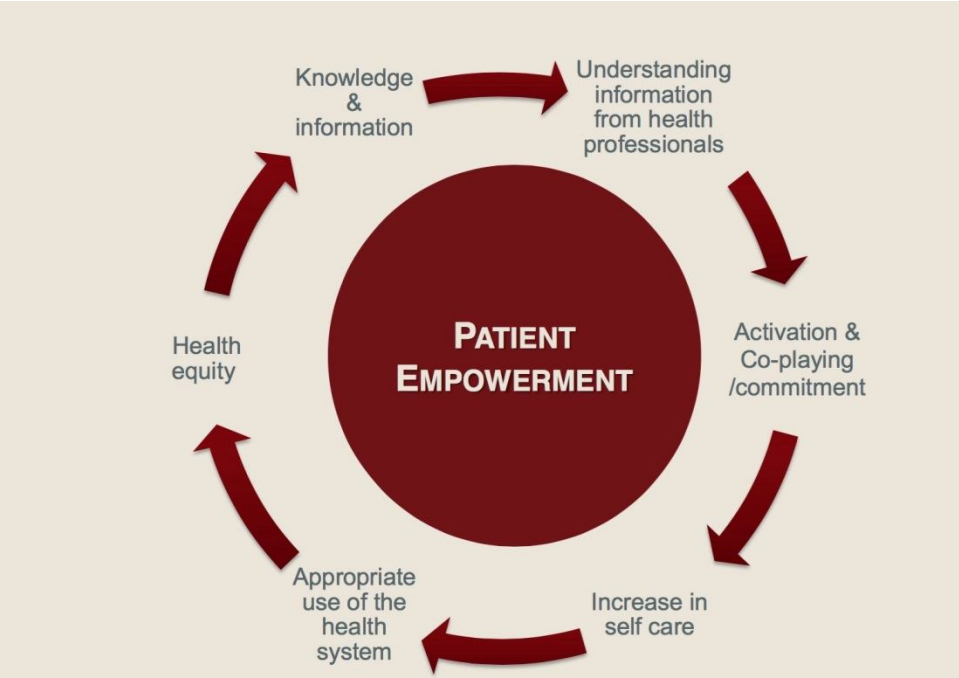
(Source: Heli Laarmen, Estonian eHealth Foundation)

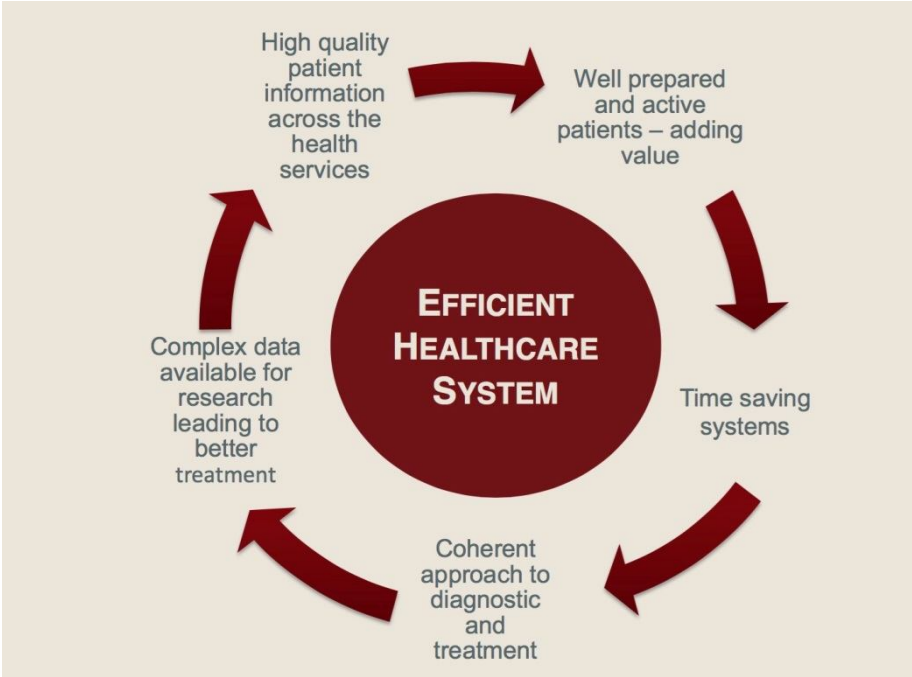
Denmark

Danish health portal – Sundhed.dk (“Health.dk”)



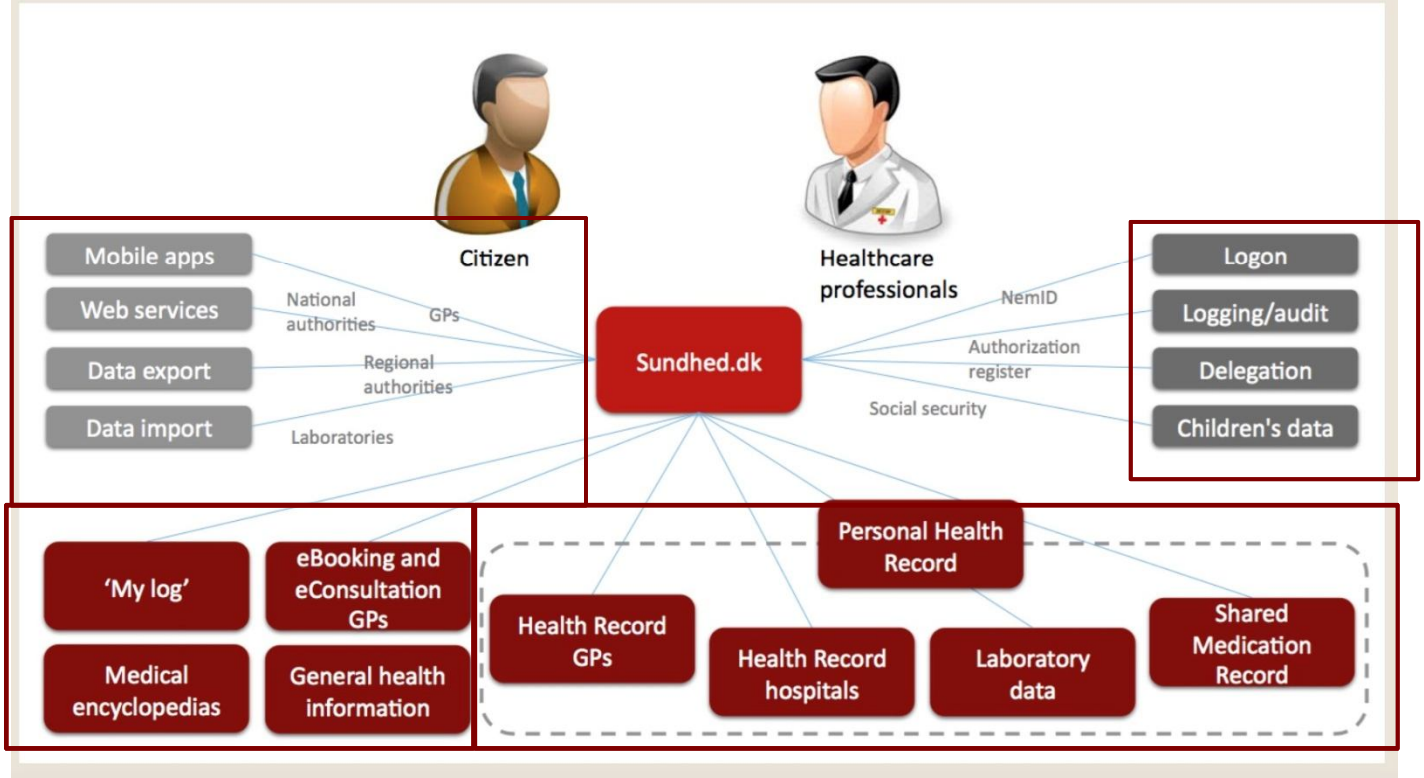
Danish health portal – Sundhed.dk ("Health.dk")





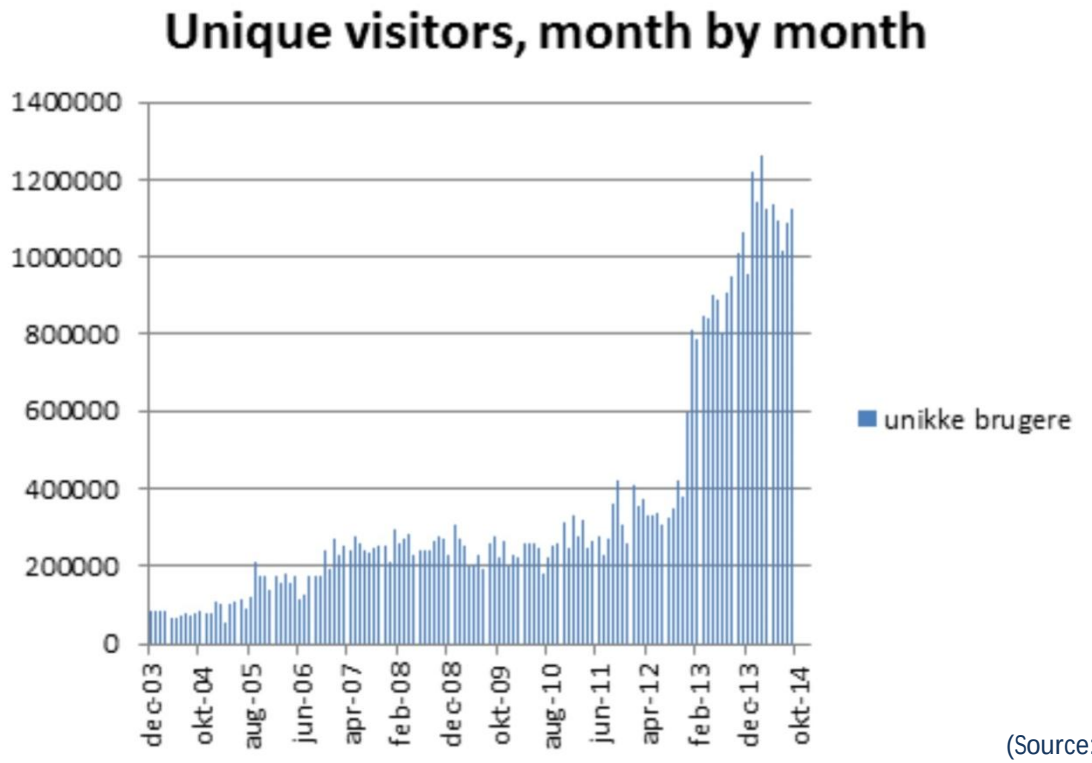
(Source: Morten E Petersen, CEO Sundhed.dk)

E-HEALTH LANDSCAPE



(Source: Morten E Petersen, CEO Sundhed.dk)

Danish health portal – Sundhed.dk ("Health.dk")



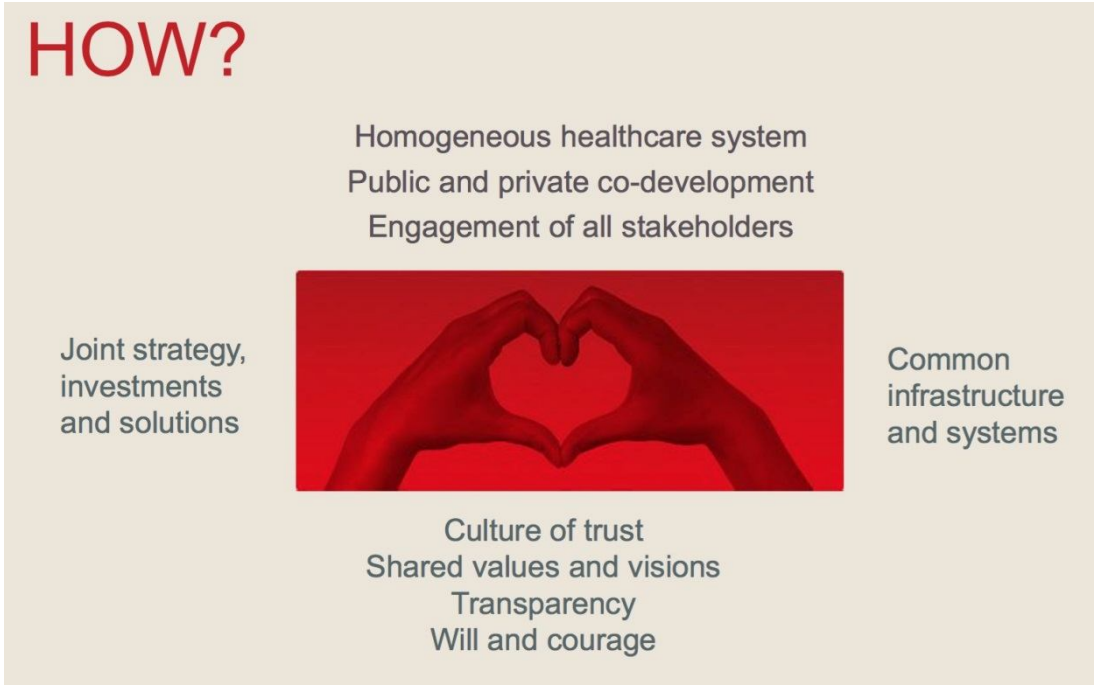
(Source: Morten E Petersen, CEO Sundhed.dk)

See your children's **prescriptions**

Log in to sundhed.dk and find the "List of prescribed medicines" in your health journal.

Here you can also see your child's prescriptions, if your child is under 10 years of age.

Danish health portal – Sundhed.dk ("Health.dk")



(Source: Morten E Petersen, CEO Sundhed.dk)

What should the Portuguese eHealth Vision look like?
(that's for you to decide ☺)

Portuguese eHealth Vision – some observations

- Many aspects of eHealth in Portugal are already very advanced.
- There are *many* different clinical systems that have evolved under different strategic initiatives, in different regions. Operational (maintenance) costs are generally quite high.
- Some national monitoring systems exist (*sistema nacional de vigilância epidemiológica ou o sistema de vigilânca da mortalidade*).
- Advanced pilots (e.g. for Telehealth - Telemonitorização da Doença Pulmonar Obstrutiva Crónica (DPOC)) exist and are strong candidates to be scaled up.
- There are challenges in terms of interoperability, standards choice and adoption, governance across regions and service development (on a national level).

Portuguese eHealth – on the verge of acceleration

To catalyze ("provoke") the discussion … What do you think is required to:

- Rationalize the National eHealth architecture in Portugal?
- Achieve a holistic access to data by patients and professionals?
- Standardize and scale-up your priority eHealth services?
- Further develop the *Portal da Saúde* to become an integrated service platform for patients and healthcare workers?
- Develop competency in eHealth standards and certification and apply them nationally?
- Develop health literacy (public and professionals) and a culture of trust?
- Market and promote your eHealth Vision and Strategy?
- Manage and govern the required change?

Thank you for your attention!
Questions are always welcome

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