



Adult education on digital, health and data literacy for citizen empowerment



RECOMMENDATIONS FOR POLICY MAKERS



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ABOUT THIS PUBLICATION

This report summarises the results of the research activities carried out in Portugal, The Netherlands, Spain, Romania and Germany within the Erasmus+ project TRIO: Adult education on digital, health and data literacy for citizen empowerment (cooperation partnerships in adult education programme under grant agreement no. KA220-ADU-000033817.). More information is available at <https://trioproject.eu/>

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Introduction

The European healthcare system is undergoing a rapid digital transformation.

By digital health and care we refer to tools and services that, using the information and communication technologies (ICTs), can improve prevention, diagnosis, treatment, monitoring and management of health-related issues¹.

Digital health and care represent an innovative approach to healthcare delivery, improving both access and quality, while increasing the overall efficiency of the health sector². Digital health technologies offer various advantages to citizens and patients, providing services such as online consultations, access to health records, informative websites, and wearable health devices.

The health sector itself can also gain from technological advancements, including through big data analysis, more efficient and integrated healthcare systems, personalized health research, improved diagnosis and treatment, and enhanced decision-making support.

Digital solutions for health and care can increase the well-being of millions of citizens and radically change the way health and care services are delivered to patients, if designed purposefully and implemented in a cost-effective way. Digitisation can support the continuity of care across borders, an important aspect for those who spend time abroad for business or leisure purposes. Digitisation can also help to promote health and prevent disease, including in the workplace. It can support the reform of health systems and their transition to new care models, centred on people's needs and enable a shift from hospital-centred systems to more community-based and integrated care structures.

European Commission, Communication on enabling the digital transformation of health and care in the Digital Single Market; empowering citizens and building a healthier society. COM(2018) 233 final

Although digital health has been a reality across Europe, with varying levels of development between countries, it was during and after the COVID-19 pandemic that digital health tools became essential, as the emergency period called for the rapid reorganization of healthcare systems and the swift development and uptake of new digital health solutions³.

Despite the numerous advantages, digital health can present several challenges, enlarging the gap in health literacy, as well as digital and data skills and awareness.

As detailed in the [TRIO European Report](#), health literacy levels differ a lot within the society for a plurality of reasons, including age, level of education, economic, environmental, cultural, and societal factors.

Digital and data literacy also vary significantly, and the risks of widening health inequalities through digital exclusion can be impactful.

Digitally health-literate individuals are more likely to adopt healthier lifestyle behaviours, while those facing socio-economic disadvantages and in vulnerable situations may struggle with technological advancements and have less access to health information and lower abilities to use it⁴.

Therefore, it is crucial to ensure that the digital health transformation does not exacerbate existing health inequalities in the future⁵.

A broad health, digital and data literacy approach can boost citizens' confidence and skills in developing their digital health capabilities, while reducing existing inequalities. A unified strategy, such as the one proposed in TRIO, can more effectively equip citizens with the knowledge, competencies, and practical skills to navigate digital health.

In the context of the Digital Decade Policy Programme 2030, digital skills indicators are some of the key performance indicators⁶. Within the Programme, ambitious objectives are set, with 80% of EU citizens (16 to 74 years old) with at least basic digital skills by 2030, as well as 100% access to a patient's own electronic health records by 2030⁷.

In light of the current context, the TRIO project emerges as a timely initiative, capable of addressing the present challenges in digital health by offering a comprehensive approach to learning, sharing, and promoting health, digital, and data literacy.

The TRIO project

Improved health, digital, and data literacy can empower citizens to better manage their health and well-being with the support of digital tools. To promote this, the TRIO project develops a concerted upskilling pathway to improve health, digital and data literacy of adults at all ages, promoting adult education through the development of digital readiness, resilience and capacity.

TRIO has established four main objectives, addressing three main target groups.

OBJECTIVES

- Increasing **health**, **digital** and **data** literacy of citizens through informal learning strategies and tools, including them in co-developing the knowledge and practices that promote inclusion, access to services and trusted decisions.
- Broadening access to knowledge and user-friendly tools co-developed with the target groups to create a step-change in a concerted literacy approach for eHealth via the usage of a digital platform.
- Increasing capacity of adult educators to provide low-threshold and highly adaptable training on health, digital and data literacy through the development of a training toolkit adjustable to online, classroom and blended trainings.
- Promote future sustainability and uptake of the TRIO tools and materials, by developing a set of recommendations to policy makers and relevant organisations.

TARGET GROUPS

The project addresses different target groups, namely citizens, educators and policy makers.

- **Citizens**

This group benefits from activities aimed at enhancing health, digital, and data literacy. The TRIO manual and the e-learning platform are specifically designed for their use.

- **Educators**

Both formal and informal educators are essential to the TRIO project, as they utilize the provided content to assist citizens in their learning journey. The toolkit is created for their support.

- **Policy Makers**

This group is the focus of the TRIO policy recommendations, which offer guidance on improving person-centred health pathways at the policy level.

Why do we need recommendations for policy makers?

TRIO aims to support a new generation of citizens to easily integrate health management in their personal life, with the knowledge to make informed decisions using innovative tools to communicate and learn. To achieve this result, engaging different stakeholders is essential - including public authorities, civil society, healthcare providers, medical technology companies (medtech) and other business, consumer organisations. The list of good practices and the resulting observations led to the development of policy recommendations tailored for various stakeholders, including the EU, Member States, and relevant organizations, with the aim of promoting future sustainability and the uptake of the TRIO tools and materials. Special emphasis is placed on healthcare authorities and local/regional policymakers.

This document is divided in five sections.



In the first section, national and regional **good practices are presented** and divided into:

- **Political measures**
- **Activities of eHealth networks and/or educational organisations**
- **Social grassroots initiatives.**

The good practices detailed in this document show significant potential for transferability. The objective is to offer effective examples of real-world experiences that can be replicated and adapted in new contexts, thereby fostering cross-learning.

In the second section, guidance for **geographical adaptation of good practices** is provided.

In the third section, **long-term measures to sustain the project** are presented, based on ideas that have emerged during the implementation of the activities of the TRIO project.



The fourth section is dedicated to the presentation of a set of **policy recommendations** aimed at guiding decision-makers on specific actions or strategies to promote more health, digital and data literacy.

In the fifth section a list of relevant **national and local stakeholders**, who can have a valuable role in sustaining TRIO's outcomes and disseminating its results, is presented.



Good practices | Measures at the political, educational and associative levels

All partners conducted research on measures at political, educational and associative levels and each selected one example of a good practice in those three areas.

Political Measures

Concept

Political measures refer to actions or policies taken by governments or political entities to address specific issues, namely related to adult education on digital, health and data literacy for citizen empowerment. These measures, at local, regional and national level, include laws, regulations, executive orders, public programmes, specifically of social welfare, initiatives, and international agreements. In the following paragraphs, a list of political measures will be presented, divided by country.

PORTUGAL

Area: Digital

Political Measure: Portugal Digital exists to accelerate the country's digital transformation, ensuring that no one is left behind, and projecting Portugal onto the global stage as a digital nation. The [Action Plan for Digital Transition](#), approved by Council of Ministers Resolution No. 31/2020, reflects the strategy defined for digital transition, implemented through the Portugal Digital Mission Structure. It includes three main pillars of action: Digital empowerment and inclusion of individuals; Digital transformation of the business sector; Digitalization of the State. Portugal is still far from reaching the forefront of informational development in Europe. It has lower rates of internet access and usage compared to most European societies, along with notable regional disparities. Furthermore, among the Portuguese non-users, it is expected that there are more people without any form of social support regarding the use of ICT, if needed, and therefore completely excluded on the spectrum of digital exclusion/inclusion. Thus, we can observe that the weight of traditional variables of social inequality is still felt in Portuguese society. This kind of program, focused on reaching all society, is extremely relevant.

Observations: Accelerating Portugal's digital transformation is necessary to establish the country as an international reference in digital innovation, ensure inclusive digital access, and leverage existing initiatives through effective communication, pragmatism, transparent monitoring, and active involvement of stakeholders. Some aspects necessary for implementation:



- Invest in cutting-edge digital infrastructure and foster a culture of innovation through incentives for research and development in technology sectors.
- Conduct an audit of current digital programs and strategies to identify synergies and integrate efforts for efficient resource use.
- Implement a robust monitoring framework with clear metrics and regular reporting to ensure accountability.
- Foster a collaborative environment by engaging stakeholders from government, private sector, academia, and civil society.

Area: Health

Political measure: the Directorate-General of Health, in line with the objectives of the National Health Plan, developed an [Health Literacy Action Plan](#) 2019-2021, based on the international best practices for setting and implementing objectives that promote health literacy and to maximise and create new opportunities for the engagement in healthy behaviours. The success of this Action Plan lies in the implementation of a set of measures that depend on the broad interaction of different stakeholders with a single purpose – to work on health literacy in order to promote health gains in the population’s health and well-being. It focuses on 4 priorities: i) adopting healthy lifestyles ii) training iii) promoting well-being iv) promoting knowledge and research

Observations: Monitoring and assessing the Plan was crucial to follow up and evaluate the impact of the implemented measures. For this Plan a set of milestones have been established, in order to assess the need for any possible changes and to ensure its fulfilment and success.

Area: Health, Digital and Data

Political measure: The National TeleHealth Center elaborated the first Strategic Plan National for Telehealth (Plano Estratégico Nacional para a Telessaúde – [PENTS 2019-2022](#)) . The goal of PENTS was to develop a strategy for utilizing telehealth, leveraging Information and Communication Technologies (ICT) as a valid tool in health management. This approach aimed to advance Portugal's health sector by improving health outcomes, quality of life, and the operational efficiency of the healthcare system.

Observations: PENTS has been considered an instrument for consolidating the strategy for the development of telehealth. It contributed to develop a vision for telehealth in Portugal through consultations with experts and key institutional stakeholders, and it included innovative proposals for the sustainable growth of Telehealth.

Area: Data

Political measure: The [National Data Protection Commission \(CNPD\)](#) is an independent administrative entity with legal personality under public law and authoritative powers, endowed with administrative and financial autonomy, operating alongside the Assembly of the Republic. The CNPD monitors and ensures compliance with the GDPR, Law 58/2019, Law 59/2019, and Law 41/2004, as well as other legal and regulatory provisions concerning personal data protection. Its aim is to defend the rights, freedoms, and guarantees of individuals in the context of the processing of their personal data.

Observations: The commission ensures that privacy rights, including those related to health, are upheld in accordance with EU and national legislation.

THE NETHERLANDS**Area:** Health

Political measure: In the Healthy and Active Living Accord (GALA) the Ministry of Health, Welfare and Sport works together with municipalities, public health services, and health insurers to promote a healthy and active life for all. The GALA accord dictates which steps to take to ensure that by 2040 a healthy generation will grow up in a healthy environment with a strong social network. The accord aims to diminish current inequalities by investing in approaches for vulnerable groups. Local and regional collaborations are essential in this plan. For more information: [Het Gezond en Actief Leven Akkoord](#)

Observations: The accord aims to “invest unequally for more equal opportunities”. Research has shown that individuals with a lower education, lower income, and/or lower social status on average have a shorter lifespan and shorter healthy lifespan. It is therefore vital for public health to address these vulnerable groups specifically.

Area: Digital

Political Measure: Alliantie Digitaal Samenleven (alliance living together digitally) is an initiative of the Ministry of Internal Affairs and Kingdom Relations, the Number 5 Foundation and VodafoneZiggo to make the Dutch society more digitally inclusive by using a multiyear action- and learning programme. By starting conversations with the people that are struggling the most, they aim to determine the wants and needs of the people and make connections on a local and national level. The alliance focusses on the learning material that is already there and makes people aware of the offers. This way, supply and demand are brought together. When a gap in the existing offers is detected, the involved parties are brought together to determine a new approach. For more information: [Alliantie Digitaal Samenleven](#)

Observations: Creating new learning offers is not always the right answer. There are already many learning offers available that aim to teach people digital, health, and/or digital skills, but they are often fragmented and hard to find for the individuals that could use them the most. By actively bringing these people in contact with the right organisations and offers, a target group can be reached that would otherwise remain unreachable.

Area: Digital and Data

Political Measure: In October 2023 the Dutch government started the public campaign '*Doe meer met Taal*' (Do more with Language) in which citizens are stimulated to improve their digital, language, and numeracy skills. The campaign uses tv- and radio commercials, billboards, and online advertisement to make people aware of the importance of these skills and of the free learning offers that are available. Citizens can choose to practice their skills online, but also have the option to register for a free in-person course in their neighbourhood. The main target audience for the campaign is native Dutch adults between the ages of 20 and 49 years old. The learning offers focus on basic literacy skills in daily life and centralises the personal learning goals of participants.

Observations: Public campaigns are a valuable tool in raising awareness on digital and low literacy and informing citizens about learning opportunities. Preferably, the target audience should be extended to include older individuals and those with an immigration background, since these are the groups that struggle the most with consecutively digital skills and low functional literacy. For more info: [Doe meer met taal](#).

GERMANY

Area: Health

Political measure: The National Action Plan on Health Literacy highlights the problem of low health literacy in Germany, while at the same time listing various strategies for improving health literacy. The four core areas of "living environments", "health system", "research" and "chronic illness" are to be addressed. For example, the education system should be enabled to integrate health literacy as early as possible. At the same time, the handling of consumption and nutrition offers should be improved and the handling of health information in the media should be facilitated. In addition, one recommendation of the report is also to improve navigation in the health system in general in order to increase transparency for patients and to reduce administrative hurdles in the future.

Observations: Starting early with the training of health literacy skills can be a successful strategy. Especially in the core area of the living environment of the patients' skills must be expanded to empower citizens to be able to act in a self-responsible and well-informed way.

Also, Navigation through and within existing services must be focused while developing learning materials.

Area: Data

Activities: The German ministry for education and research has created a new knowledge hub that is aiming at data literacy as a focus point. For more information: [link](#)

Observations: In recent years extensive research regarding data literacy has been done in Germany. Now there is a new space for actors from different spheres to share knowledge and information regarding the subject of data literacy. For example, it is planned to create a transparent platform where several educational offerings can be found, together with numbers and statistics regarding the literacy levels themselves. The recommendation resulting from this is that knowledge silos in public spheres have to be eliminated and public stakeholders should engage in networks like the transfer hub to exchange experiences. Similarly, topics like data literacy can be addressed on several levels at the same time. With those joint forces region or nation-wide educational offers can be established to higher literacy levels.

SPAIN

Area: Digital

Political measure: The objective of the [Recovery, Transformation and Resilience Plan](#) is to guarantee the training and digital inclusion of workers and all citizens, to promote the creation of quality jobs, reduce unemployment, increase productivity and contribute to closing gender gaps, social and territorial. The National Digital Skills Plan, included in Digital Agenda 2026, also develops part of the [Recovery, Transformation and Resilience Plan](#).

Line 1 of the plan seeks to train citizens in the digital era by universalizing basic digital skills. To do this, special emphasis must be placed on those groups that currently find it more difficult to acquire these skills, such as older people, people with low-income levels, people from non-urban areas or people with a low educational level. As part of this measure, in October 2022 the Government of Spain approved the [distribution of almost 30 million euros for basic digital training](#): Network of Digital Training Centers or Classrooms, where the priority audience is people over 55 years of age with low educational level.

Observations: The main observation based on this good practice case is the universalisation of basic digital skills, prioritising training for disadvantaged groups, investing in specific programmes for older people, integrating efforts with recovery and transformation plans and finally establishing constant monitoring and impact evaluation.

Area: Digital

Activities: On February 15, 2013, the Council of Ministers approved the Digital Agenda for Spain as the Government's strategy to develop the digital economy and society in our country. This strategy was configured as the umbrella for all Government actions in the fields of Telecommunications and the Information Society. The agenda was jointly led by the Ministry of Energy, Tourism and Digital Agenda, and the Ministry of Finance and Public Administration.

The Agenda set the roadmap for ICT and Electronic Administration to meet the objectives of the Digital Agenda for Europe in 2015 and 2020, and incorporated specific objectives for the development of the digital economy and society in Spain. To this end, the Digital Agenda for Spain was designed as a flexible instrument that, in addition to addressing these objectives, could adapt to the rapid technological development that characterizes the ICT sector. For more information: [Spain's digital agenda](#).

Observations: The main suggestions based on this good practice case are the following:

1. Promote the deployment of networks and services to ensure digital connections.
2. Develop the digital economy for growth, competitiveness, and the internationalization of Spanish companies.
3. Improve electronic administration and digital public services.
4. Strengthen trust in the digital realm.
5. Boost R&D in future industries.
6. Promote digital inclusion and literacy, and the training of new ICT professionals.

Area: Digital

Activities: The DDHealth survey is proposed to address some of the reasons that explain socioeconomic health inequalities. It aims to tackle two innovative and timely aspects that have been postulated to contribute to socioeconomic health inequalities. The first is the socioeconomic digital divide, which refers to the greater abilities and opportunities to access technology and use the internet among higher social classes compared to lower ones. The second is health literacy, which refers to individuals' ability to meet and understand the complex demands of health promotion and maintenance in modern society. For more information: [DDHealth Protocol](#)

Observations: a cross-sectional survey on sociodemographic health, health literacy, and the digital divide was conducted in 2022 as initiative from the Spain's Health ministry on 2,000 adults aged fifty to seventy-nine residing in Spain.

ROMANIA**Area:** Health

Activities: Vaccination is an intervention that saves millions of lives every year and can prevent more than 20 life-threatening diseases. Immunization programs need to address both

barriers to vaccine supply and equitable distribution, as well as barriers to vaccination reluctance. The strategy approved by the Government of Romania and implemented by the Ministry of Health, the National Health Insurance House, ministries and institutions with their own health network and local public administration authorities has the vision of achieving the maximum benefits of vaccination, by ensuring equitable access to safe and effective vaccination services. For more information: [Hotărâre a Guvernului privind aprobarea Strategiei naționale de vaccinare în România pentru perioada 2023 – 2030. - Ministerul Sănătății \(ms.ro\)](#)

Observations: This strategy aims to strengthen national capacity to achieve immunization targets by encouraging the implementation of lifelong vaccination.

Area: Health, Digital, Data

Political Measure: The Government of Romania adopted, in November 2018, the 2030 Agenda for the Sustainable Development of Romania, prepared by the Department of Sustainable Development and with the contribution of the Editorial Commission, the General Secretariat of the Government, ministries and other central institutions, local authorities, regional development agencies, academic and university forums, national research and development institutes, employers' associations and trade unions, the private sector and non-governmental organizations and other civil society bodies and interested citizens. The strategy is focused on three dimensions of development (economic, social and environmental), being centered on the needs of citizens through innovation, optimism, resistance and faith, in a fair, efficient and balanced way, all in a clean environment. The aim is to ensure consistent government action and increase the active participation of all relevant stakeholders including citizen initiative. For more information: <https://faolex.fao.org/docs/pdf/rom195029.pdf>

Observations: Implementation of the Sustainable Development Goals (SDGs) will be monitored through sustainable development hubs formed by experts.

Area: Health

Political measure: In December 2022, a multi-fund health program was approved through European Social Fund+ (ESF+) and European Regional Development Fund (ERDF) funding and a loan through the European Investment Bank. The seven priorities established within this program aim to increase the capacity of the health system by being more inclusive and at the same time providing access to quality and safe medical services to all citizens. Among them there is also the component for the digitization of the medical system, because the Information Technology (IT) system is outdated and needs substantial technical upgrades, the most important problems found being poor data collection, lack of standardization, reduced

interoperability between IT systems, outdated IT infrastructure, suboptimal use of the collected data as well as the lack of access to the patient's own data. For more information.

Recommendation: Streamlining data collection and SIS interoperability through measures such as the National Observatory for Health Data (ONDS) and the Integrated Development of e-Health Solutions to improve medical services for citizens.

Activities of eHealth networks and/or educational organisations

Concept

Activities of eHealth networks and/or educational organizations refer to the actions, initiatives, and programs undertaken by these entities in the context of eHealth and education. eHealth networks and educational organizations play vital roles in advancing digital health and modernizing education through the application of technology and data-driven approaches. Their activities aim to improve healthcare services, enhance learning experiences, and ultimately contribute to better outcomes for individuals and communities. In the following paragraphs, a list of activities is presented, divided per country.

PORTUGAL

Area: health and digital literacy

Activities: The Competence Centre on Active and Healthy Ageing at the University of Porto – [Porto4Ageing](#) – is a multidisciplinary working group in the fields of ageing, digital health, entrepreneurship, and innovation, based at the University of Porto. It promotes networking activities (building and managing national and international collaborative work networks), research and innovation (designing and implementing national and European research and innovation projects), training and capacity-building for the population (e.g., students, professionals, caregivers, patients), and the validation and scaling of innovative solutions. By involving a wide range of institutions, Porto4Ageing is committed to promoting local convergence and enhancing the healthcare innovation ecosystem, overcoming existing bottlenecks. This will be achieved by fostering high-impact collaborative efforts, facilitating knowledge exchange, and expanding outcomes.

Observations: The empowerment of citizens and professionals is essential for the development and success of innovations that improve the population's quality of life. Foster collaboration among diverse institutions to strengthen the healthcare innovation ecosystem, promote local convergence, and overcome existing bottlenecks, thereby maximizing the impact of initiatives like Porto4Ageing. Some potential ideas are:

- Establishing a collaborative platform that brings together universities, research institutions, healthcare providers, and industry stakeholders under a unified framework.
- Promoting the exchange of knowledge and good practices among institutions within the healthcare ecosystem.
- Creating an enabling policy environment that supports healthcare innovation and entrepreneurship.

Area: Data

Activities: "Data Literate" is an Erasmus+ project aimed at training secondary school educators in Digital Data Literacy to identify misinformation and manage information overload. The project aims to create a skills development program, including an online course for teachers and school leaders. And the development of a strategic plan and practical guide for Digital Data Literacy.

Observations: By actively contributing to the professional development of educators in the field of Digital Data Literacy and through a holistic and collaborative approach that brings together school communities and experts in training and data literacy, the project will address the specific challenges faced by European education raised by COVID-19. Simultaneously, it will support the Commission's proposal to consolidate ongoing efforts and further develop the European Education Area by enhancing basic skills, including digital skills, facilitating international cooperation among educational institutions, and ensuring continuous professional development opportunities for teachers and trainers.

THE NETHERLANDS

Area: Digital, Health, Data

Activities: Foundation *Digisterker* (Digi stronger) offers educational programmes for both young people and adults to increase their knowledge and understanding of the digital data-society and digital competences. Their programmes are made from a social perspective and aim to teach people the independence, safety, and confidence to work with digital services of social organisations, particularly those from the government. One of the programmes of *Digisterker* is called *DigiVitaler* which offers learning courses on digital healthcare topics like medical websites, health applications, online health portals, and video consulting. *Digivitaler* will be part of the online educational programme of Dutch public libraries, enabling the libraries and its visitors to make unlimited use of the learning material. For more info: [Digivitaler](#).

Observations: Disseminating learning offers through libraries or other public facilities is a good way to reach people with a lower income or no access to digital devices or internet. Equally important is making sure these disadvantaged groups know that these learning offers are available and where to find them, as well as the benefits of improving these skills.

Area: Data

Activities: [Oefenen.nl](#) is an online platform where people can practice and improve their language, calculating, computer, and internet skills, but also learn about things like how to have a healthy lifestyle, make sustainable choices, and make sensible financial decisions. They aim to provide a platform where (young) adults are able to practice important life skills to

gain confidence and proficiency. Individuals can make a free account for themselves, and organisations can purchase a license to gain access to a follow-up system and extra material. Currently 350 organisations, among which libraries, municipalities, schools, social work facilities, immigration centres, penitentiary institutions and companies, have such a license. Oefenen.nl collaborates with its client organisations to more accurately meet the needs and demands of the target groups.

Observations: Collaboration with institutes and organisations that have a close connection to the target group is a great way to ensure that the learning offer reaches the right people and meets their needs and goals.

Area: Digital, Health, Data

Activities: [Steffie](#) is a cartoon personage that explains complicated topics in an easy-to-understand way. The range of topics is very diverse and includes visiting the General Practitioner (or family doctor) using DigiD (the Dutch digital identification system), video calling, using a mobile phone, getting health insurance, and much more. Even though the style may seem childish at times, Steffie is targeted to adults of all ages and is a very popular platform, with more than a million visitors per year.

Observations: Explaining difficult topics in a fun and easy-to-understand way is vital when targeting individuals with lower literacy skills and/or educational backgrounds.

It decreases the shame of ignorance some people might feel and engages them to learn.

GERMANY

Area: Health

Activities: Within the [Deutsches Netzwerk Gesundheitskompetenz](#) (DNGK)'s offer, interested persons can get information on different health services.

The DNGK offers an overview of trustworthy providers as well as workshops and projects aimed at improving health literacy among the population. For example, the DNGK deals with topics such as barrier-free health communication or media in the health sector, about which topics one can easily inform oneself online. In addition, you can find out about precise definitions and a list of important actors in the field of health literacy

Observations: It is important to show citizens how to recognise and ultimately interact with reliable health services through bundled information.

It is recommended to categorise terms and tools beforehand so that the different contents can be offered in a staggered way for different target groups

Area: Digital

Activities: The [initiative D21](#) works like a political near entity that gives information about Germany's digital literacy levels every year. In this regard they do research and analysis and inform the public via the publication of different papers. In this context the initiative also works like an educational entity, enriching the existing free to access offer of materials in the realm of digital literacy.

Observations: Giving transparent information about the current literacy levels in the respective country is inevitable to plan educational offers. It is thus very desirable to connect institutional actors with such initiatives to better tailor educational offerings to the current challenges in using digital methods. The annual D21 study can for example be used as a helping document for decision-making on local, regional and national level.

SPAIN

Area: Health

Activities: ASISPA is an organization that provides comprehensive care for people in vulnerable situations. The [#StopBrechaDigital](#) project is aimed at ELDERLY PEOPLE to bring them closer and connect them to new information and communication technologies through a complete Digital Empowerment programme consisting of 20 workshops, meaningful activities and a dissemination campaign. Within the training itinerary, there are workshops on digital, health and data literacy. Covering topics such as digital identity: **data protection** and privacy, the use of the internet from scratch, facilitating **digital administration procedures**, taking care of health with technology or health in the cloud to know how to manage online **medical appointments**, vaccination schedules as well as other information on hospital care and specialised medicine.

Observations: The main recommendations based on this good practice case are the following: focus on older people to train them to bridge the digital divide in this vulnerable group by maintaining a comprehensive training programme that addresses aspects of digitalisation, health and privacy and data security

Area: Health, Digital

Activities: The overall aim of SWEET HOME is to open up a new world of opportunities and possibilities for people with special needs disabilities (Down's syndrome, blindness and visual impairment, hearing impairment, muscular dystrophy, Alzheimer's, cystic fibrosis, kidney disease) to lead as independent, autonomous, comfortable and stimulating a life as possible in their own home. There are around 80 million people living with a disability in the EU. This is more than 15% of the European population. Different types of disabilities lead to different limitations and needs. Among those concerned, there is a desire to be able to live a more active, self-determined, independent and socially integrated life in a home that is fully

adapted to one's personal needs. Modern technologies can help with this! Smart technological aids are generally available and affordable nowadays, however, the necessary know-how is often lacking: manufacturers of smart technologies are not aware of the specific needs of persons with disabilities; persons with disabilities and their caregivers are generally unaware of what technologies exist. For more information: [My sweet Smart home](#).

Observations: Opening new opportunities and possibilities for people with disabilities and special needs to live a more independent, autonomous, safe, healthy, comfortable and stimulating life in their own homes is possible, as it is necessary creating better life conditions for people with disabilities, focusing on their daily life and achieving a more autonomous, independent, and healthy life, making a more equality society removing any possible discrimination.

Area: Health, Digital

Activities: The project [Pharaon](#) aims to lay the foundations and unify the technological challenges that the ageing of the population will bring in the coming decades through the development of real pilot experiences in different European cities. The overall objective of the project is to provide support for Europe's and Spain's ageing population by integrating digital services, devices, and tools into open platforms that can be readily deployed while maintaining the dignity of older adults and enhancing their independence, safety, and capabilities. The project will utilise a range of digital tools including connected devices (e.g., the Internet of Things, IoT), artificial intelligence, robotics, cloud and edge computing, smart wearables, big data, and intelligent analytics that will be integrated to provide personalised and optimised health care delivery.

Observations: The pilot activities are aiming to make technology more accessible and user friendly to older people, building people's confidence on technologies and involving them in the evaluation of products and services, to further improve and adapt them.

ROMANIA

Area: Digital

Activities: The *sine qua non* condition for an education system adapted to the 21st century is the right to quality digital education. After experimenting with the new ways of transmitting knowledge, through the transition to digital and hybrid education, investments in infrastructure and digital educational content, the Academic Society of Romania produced a public policy report ([Digitalizarea-Educatiei.pdf \(romaniacurata.ro\)](#)) with the aim of bringing the subject of digital education back on the public agenda, respectively to determine the Ministry of Education to make an own x-ray, for the substantiation of the sectoral provisions in the new legislation regarding pre-university education

Observations: Ensuring the right to digital equipment that allows access to open educational resources in multiple formats is paramount, as well as regulating the blended learning education format and organizing remedial education programs benefiting from the advantage of technology

Area: Digital, Health, Data

Activities: People want a better quality of life, and technology can be an enabler in this regard. The Faculty of Political, Administrative and Communication Sciences of Babeş-Bolyai University initiated the digital transformation in Cluj-Napoca, through [Digital Cluj – Strategia de Dezvoltare Digitală a Municipiului Cluj-Napoca](#) involving citizens, the public sector, the academic environment, private companies, clusters, non-profit organizations and innovation hubs. The success of this strategy will be given by the ability of the smart community platform to build a dynamic that allows the generation, selection, implementation and strategic integration of digitization initiatives

Observations: It is essential to monitor, evaluate and update the implementation of the strategy by the Innovation Office board, which includes the interested representatives of the community. The evaluation of the status of the projects can be done continuously throughout the year, and on the occasion of the Cluj Annual Digital Transformation Challenge, the CIO (Cluj Innovation Camp) will present a detailed report on the degree of implementation and planning for the following year

Area: Digital, Health, Data

Activities: The National Authority for the Protection of the Rights of Persons with Disabilities (ANPDPD) and the Ministry of Labor and Social Solidarity (MMSS) are running a project, co-financed from the European Regional Development Fund through the Competitiveness Operational Program 2014-2020, whose objective is to develop and implement a centralized national platform for the collection, storage and distribution of information on persons with disabilities (adults and children) to central and local public authorities, individual beneficiaries and institutional partners. For more info: [Sistem Național de Management privind Dizabilitatea - Autoritatea Pentru Digitalizarea României \(gov.ro\)](#)

Observations: Streamlining the activities of the institutions involved by implementing a case management computer system.

Area: Digital, Health, Data

Activities: A project in the implementation phase is about the creation of an IT system for health registers, the [Sistem Informatic pentru registrele de sănătate - RegIntermed -](#)

[Autoritatea Pentru Digitalizarea Romaniei \(gov.ro\)](#) with the Authority for Digitization of Romania and the Ministry of Health as partners (partnership leader and beneficiary). By achieving RegInterMed it increases the use of e-health systems and the interconnection with other IT platforms in the field of e-health. Also, other objectives are the development of the Integrated Information System in the field of health by implementing sustainable e-health solutions and integration into existing e-health platforms at the European level

Observations : Improving active patient participation in e-health is essential. Access to information about the history of each patient, as well as the tracking of possible interferences of the treatments given, centralized in a database, can lead to making an optimal medical decision. The database being real and current, there is the possibility of making some statistics, in view of the elaboration of the decisions of the Ministry of Health

Area: Digital, Health, Data

Activities: The Ministry of Health (MOH), as project leader and beneficiary, together with the Authority for the Digitization of Romania, through a project financed from external non-reimbursable funds and from the state budget, implements an IT system for monitoring, documentation, data exchange medical in emergency situations, the consultation and/or the granting of the second remote opinion and support of the processes related to the activities of anaesthesia and intensive therapy (ATI), [Sistem Informatic pentru Evidența Clinică a secțiilor A.T.I. - Autoritatea Pentru Digitalizarea Romaniei \(gov.ro\)](#). MS's existing or future IT systems or applications will be able to interface with this system. By implementing the unitary Electronic Clinical Information System for Anaesthesia and Intensive Therapy (SIEC), the quality of medical care increases and citizens' access to medical services is facilitated

Observations: It is necessary to increase the use of ICT in direct communication between the Ministry of Health and the most important 18 adult and paediatric hospitals in Romania (emergency hospitals and regional centres) and the interconnection of the systems in the ATI departments and operating rooms in a national ATI network, in order to analyze and take "real time" decisions.

Social Grassroots initiatives

Concept

"Social grassroot initiatives" refer to projects, activities, or movements that originate and are driven at the local level to address social issues or promote positive change in the communities. Social grassroot organisations and initiatives are characterized by their bottom-up approach, meaning they are initiated and implemented by community members themselves. They often rely on the active involvement and participation of community members, volunteers, and local resources to achieve their goals.

These initiatives play a vital role in fostering social change and empowering communities, as they allow individuals to take ownership of the issues that matter them the most and actively work towards solutions. They are a powerful tool for promoting social inclusion, civic engagement, and collective action at the grassroot level.

In the following subchapters, a list of measures is presented per country.

PORTUGAL

Area: Digital

Activities: The DigiLife – Digital Life Learning (in Portuguese, Literacia digital ao longo da vida) aims to develop a toolkit and training sessions to enhance digital skills among older adults, with active collaboration from young university students. The project seeks to promote intergenerational exchange while providing real-world work experiences for young students. These knowledge-sharing experiences will be recognized through the awarding of micro-credentials within the Digital Literacy framework. The project commenced in November 2022 and will span 26 months. DigiLife is funded by the Erasmus+ Programme: KA220-ADU – Partnerships for Cooperation in Adult Education, supported by the European Commission.

Observations: it is important to enhance the quality of life for older adults through digital literacy and intergenerational learning, as exemplified by the DigiLife initiative in two main ways:

- Conduct comprehensive research and needs assessments to better understand the challenges and aspirations of older adults regarding digital literacy.
- Implement structured digital skills training programs for older adults to empower them to lead more independent lives.
- Integrate coaching and teaching opportunities within university curricula to facilitate digital knowledge transfer to older adults.

Area: Data, Health

Activities: The project "Improving Digital Empowerment for Active Healthy Living" (IDEAHL) aims to develop and test new models and intervention approaches in (digital) health literacy through the co-creation of a comprehensive and inclusive European Union (EU) strategy for digital health literacy. The main objective of the project is to empower EU citizens to use digital technologies so they can play a more active role in managing their own health and well-being, while also supporting social innovation institutions in person-centered care models. The specific objectives of the project include: Promoting knowledge sharing – establishing a network of "champions" and "survivors" identified through good practices in data and digital health literacy. Engaging stakeholders, including health sectors and non-health sectors such as education, innovation, social services, medical industry, media, among others, along with citizens and users, in co-creating, planning, implementing, and evaluating the strategy, with a focus on vulnerable groups. Ensuring political support at local, national, and European levels.

Observations: It is important to support to the common EU monitoring model and indicators for LHD levels.

THE NETHERLANDS

Area: Digital, Health

Activities: Digital skills are not only important for citizens but are also vital for people working in the healthcare sector. Digital advancements in healthcare enable telehealth, empower patients, and reduce workload for employees, but a lack of knowledge and skills among healthcare professionals can prevent these benefits. [Coalitie Digivaardig in de Zorg](#) (digi-proficient in healthcare Coalition) is a grassroots initiative committed to improve the digital skills in the healthcare sector in order to fully enable the advantages of eHealth. They offer a platform with self-tests and learning material for care professionals to improve their knowledge on digital technologies in their sector, as well as tips and tools for managers, project leaders, and digi-coaches.

Observations: eHealth literacy is only valuable when the quality, quantity, accessibility, and affordability of digital healthcare offers can be guaranteed. Learning offers for digital and health skills should therefore go beyond citizens and extend to care professionals, policy makers, and developers, including information on the needs and gaps of the most vulnerable groups.

Area: Health, Digital

Activities: [Helpdesk Digitale Zorg](#) (Helpdesk Digital Care) offers help to people with any digital questions that may arise during treatment or contact with a physician. People can either call

the helpline, send an e-mail or find manuals and instruction videos online. The idea for the helpdesk arose in 2020, when the founder saw the opportunities of digitalisation in healthcare, but also the challenges it would bring for a large group of citizens. The foundation was established two years later. Their aim is to make eHealth accessible to all.

Observations: A direct helpline for people to contact can bridge a barrier for individuals less proficient in eHealth skills, but unwilling or unable to actively participate in a learning offer. Direct contact can help people with a single question or problem and improve access to the healthcare system.

Area: Health

Activities: In a society where unhealthy lifestyle choices are currently the norm, foundation [Je Leefstijl als Medicijn](#) (your lifestyle as medicine) strives for a shift in how healthcare is approached. They believe that, instead of fighting symptoms with medication, we should focus on helping people live a healthier life, preventing the chronic illnesses, overweight, and physical and mental health problems our current Western lifestyle brings us. The foundation offers a platform that supports people in maintaining a healthy lifestyle. They raise awareness via social media, offer online guidance, cooking workshops and strength instructions, and organise lectures, debates and congresses.

Observations: With lifestyle-related health problems rising fast, a change is needed in healthcare policy. Where currently we are fixing health issues as they arise, more focus should be put on health promotion and disease prevention. Research in light of the TRIO project indicates that these are currently the areas that people struggle with the most, yet healthcare professionals are often unequipped to deal with the root of the problem.

GERMANY

Area: Digital

Activities: The Adult Education Centre of the district of Fulda offers a wide range of IT courses and workshops on basic digital skills for almost all target and age groups. Those interested can choose between various courses in the IT field on the website of the [VHS Fulda](#). This also includes the "Digitaltreff" (Digital Meeting), where new basic digital skills are always taught. For example, this month there is a local course in a community on the topic of "Basics for everyday digital life". For more information: <https://de.digitalscouts.eu/> <https://smartcity.muehlhausen.de/digital-lotse/>.

Observations: Digital learning and training are especially valuable when it happens peer-to-peer. Due to this offerings of digital scouts/guides should be generally established in German or European municipalities, especially if those communes are located in the periphery, where the potential of digital health service is even more prevalent. Also, if those educational offers

for trainers would be widely known or recognized a bigger network effect could be triggered. So especially in this regard institutional actors should join forces to establish such offers nation-wide.

Area: Digital

Activities: Several cities in Germany are planning or already running grassroots projects where people of different age groups can be formally trained to work as digital scouts/guides. As peer-to-peer learning plays an important role when it comes to digital or data issues, the role of the guides is also to take the fear out of future participants. Thus, the work of the guides can provide very valuable guidance and help to older adults on how to use digital tools and services in everyday life. In this context, the guides themselves can learn a lot that they can teach others, both during specific official workshops and in their everyday life environment. For info: <https://de.digitalscouts.eu>, <https://smartcity.muehlhausen.de/digital-lotse/>

Observations: Digital learning and training is particularly valuable when it takes place in a peer-to-peer modality. Digital scouts/guides should generally be established in German or European municipalities, especially if these municipalities are located in the periphery, where the potential of digital health services is even more widespread. Also, if these training opportunities for trainers were widely known or recognised, a larger network effect could be triggered. It is therefore precisely in this respect that institutional actors should join forces to establish such services nationwide.

SPAIN

Area: Digital, Health

Activities: Obra Social “La Caixa” promotes active ageing programmes that help to improve the day-to-day life of active ageing programmes that help to improve the day-to-day lives of the elderly people, paying special attention to the most vulnerable, always based on values such as human dignity, humanism and solidarity. Some of the workshops offered are related to computer literacy, the creation and design of text documents, photographic retouching and digital presentations or learning to surf the internet to make it easier for users to carry out administrative and personal procedures via the internet, **make doctor's appointments**, buy cinema tickets or airline tickets, etc. For more details: [Fundación la Caixa: Improving digital skills in older people.](#)

Observations: Promoting active ageing training programmes focusing mainly on digital skills and fostering independence and tailoring the programmes to the individual needs of the participants is necessary.

Area: Health and Digital

Activities: The [Fundación Poncemar](#) is a non-profit organization operating in the city of Lorca (Murcia). Its primary purpose is to care for, support, assist, and provide aid to elderly people in this city who lack resources and are in need.

The foundation is under the guardianship of the regional protectorate and is registered in the Registry of Foundations of the Region of Murcia with the number 18, classified as a charitable assistance organization. Additionally, this entity is governed by a Board of Trustees composed of four trustees.

For the Poncemar Foundation, all elderly citizens deserve quality assistance tailored to their needs, regardless of their income level or economic resources. This assistance should ensure the well-being and quality of life for the elderly in the municipality who use our services.

Observations: The Foundation carries out its own socio-labour inclusion program, targeting young people at risk of exclusion and individuals with disabilities. Through its Special Employment Center, the foundation promotes the hiring of those who participate in this program and oversees their development in the jobs assigned to them.

Area: Digital

Activities: The [Fundación Cibervoluntarios](#) facilitate the acquisition of digital skills for thousands of people each year in a friendly, simple, practical, and free manner.

They especially focus on individuals in situations of digital vulnerability, such as the elderly, women, small and medium-sized enterprises, self-employed and entrepreneurs, rural populations, migrants, people with disabilities, minors, and small entities and NGOs. They believe in technology as a lever to eliminate all inequalities, strengthen rights, and improve the opportunities and quality of life for everyone.

Projects, such as ConectaDOS aim to solve digital gap between generation, by teaching digital skills to elderlies in workshops.

Observations: This program is designed to train elderly people in the use of technology. It aims to provide solutions to seniors, offering them the necessary tools to adapt in an ever-evolving digital environment.

ROMANIA

Area: Digital, data

Activities: In the Municipality of Iași, in order to optimize the internal administrative procedures in relation to the beneficiaries of public services, a project was started, financed by the Administrative Capacity Operational Program. This initiative involves the implementation, at the level of subordinate institutions, beneficiaries of the project (Directorate of Social Assistance, Nursery Department, Iași National Athenaeum, "Regina Maria" Municipal Museum, "Mihai Ursachi" House of Culture, Junimea Publishing House, 77

school and preschool education units), of a new and innovative concept of web-based multi-institutional digital ecosystem based on cloud computing technology. Through the electronic portal, available from December 2023, citizens are offered alternatives to remote communication (applications, petitions, certificates, etc.). For more info: [Municipiul Iași implementează proiectul Digital.IASI, cod SIPOCA/MySMIS 1253/154770, finanțat în cadrul Programului Operațional Capacitate Administrativă \(primaria-iasi.ro\).](#)

Observations: it is advisable to develop staff skills in order to use and administer IT solutions (inter-institutional communication platform, collaborative work platform for exercising exclusive skills, identity management platform, electronic signature platform, databases).

Area: Digital, Data

Activities: Since 2019, the Municipality of Iași has had a Digital Transformation Strategy ([Iași Smart City, Strategia de Transformare Digitală a Municipiului Iași \(iasismartcity.ro\)](#) governed by the Digital Council for Digital Transformation of the Municipality of Iași, formed by representatives of the academic environment, the business environment, civil society and the local public authority. As defined by the European Commission, in the Development Strategy, the Smart City concept (the development of creatively intelligent communities) is implemented on the main 6 verticals: smart governance, smart living, smart mobility, smart people, smart economy, smart environment. These domains are interconnected with each other and with other important domains of the concept.

Observations: The process consisted in transforming the city from a Smart one to an Intelligent one through: participation and inclusion, transparency and access to information, public and social services, multi-level governance, efficient municipal administration, attractiveness of natural conditions.

Area: Digital

Activities: The urban digitization project in the Romanian Municipality, co-financed by the European Social Fund, contributed to the efficiency and simplification of the services provided to citizens, a geospatial IT platform being implemented from the back-office and front-office perspective, through the Administrative Capacity Operational Program 2014-2020. The stages completed are essential in order to achieve the PMUD (Sustainable Urban Mobility Plan) for the period 2021-2027. Specifically, citizens can already benefit from 48 online electronic services. For more information: [Planificare Strategică Și Digitalizare Urbană Pentru Municipiul.](#)

Observations: The project contributes to the promotion of quality services for all final beneficiaries and to the development of the information society. In order not to move the

bureaucracy online, the simplification of administrative procedures is a priority, simultaneously with the digital transformation process.

Area: Digital, Data

Activities: The Northeast Regional Development Agency (ADR Nord-Est), [Regio Nord-Est 2021-2027 \(regionordest.ro\)](https://regionordest.ro), is a non-governmental, non-profit organization that aims to contribute to improving the quality of life of the citizens of the Northeast Region, through a program based on a process of economic growth intelligent, sustainable and inclusive and the reduction of intra- and inter-regional development gaps and which will finance projects in the counties of Suceava, Botoșani, Neamț, Iași, Bacău and Vaslui. Specialization niches were identified, industrial modernization, cybersecurity, traceability and big data, smart cities and villages, development of new ICT hardware & software products and testing solutions, etc. The digital transformation of the Municipality of Iași through projects aimed at the creation of geospatial maps, the creation of libraries of digital objects, intelligent urban development, the creation of a network of innovative hubs, etc.

Observations: the process of digitalization of the Region has brought benefits for citizens, companies, research organizations and public authorities, through actions aimed at creating open urban data platforms, integrated GIS, platforms to promote investment opportunities, quality of life and development monitoring systems durable etc.

Guidance for geographical adaptation of good practices

While increasing the health, digital and data literacy of patients and citizens is of great importance, it is also essential to recognise that geographical, cultural and linguistic differences can affect the effectiveness of the policies and practices applied.

Transfer of good practice and mutual learning is a key focus of European integration policy.

Building on experiences that have already proven effective can be a successful strategy for creating or improving practices. By following good practices and models, it is possible to implement effective policies and benefit from lessons learned elsewhere.

However, several obstacles can prevent or complicate the uptake of good practices.

It is therefore important to consider different dimensions for the transferability and uptake of good practices:

Social context: it is necessary to gain insight and understanding of local cultural beliefs, education system, health practices and social norms that influence digital and health literacy.

Language and content: national and local language can have a profound impact on digital, health and data literacy. The ability to use content in the primary language is also a powerful system for inclusion.

Stakeholder involvement and capacity building: working with local health professionals, community leaders and local associations and organisations is key to building trust and confidence in new tools and technologies.

Communication strategies and social media: the use of established communication strategies, including social media, can support understanding of the benefits and potential challenges of different practices.

Evaluation: continuous monitoring of the results of the adapted practices allows to assess their effectiveness.



Long-term measures to sustain the project

Policy makers and relevant stakeholders are the keystone to ensure the sustainability of the project and the dissemination of its results. Based on the collection of good practices and the overall desk research conducted by all partners, several aspects have emerged as measures that can support the long-term success of the project's outcomes and promote TRIO's objectives.

Project outcomes and outputs

The following measures can support the long-term sustainability of the project:

1. Translations in different national languages of the main TRIO reports, for a wider dissemination and accessibility.
2. Dedicated outreach strategy towards specific stakeholders, that can generate multiplier effects: public libraries, retirement homes, sport centres, and care facilities.
3. Dissemination of national reports and policy recommendations among universities to generate new research and new studies in healthcare, technology and social policies.

Policy priorities

The following measures can support the development and implementation of the policies promoted by the project.

a) Health Literacy

1. It is essential that those operating in the field of health literacy (educators, policy makers, healthcare professionals) work for a consolidation of health information, to be presented in a clear, simple and easily accessible manner.
2. Healthcare providers should be offered training courses and communication training, to enhance the dialogue with patients and their careers, increasing trust and reducing exclusion.

b) Digital Literacy

1. A wider use of existing digital health services should be strongly promoted and supported by policymakers, including effective communication campaigns targeted to the different audiences.
2. Funding opportunities for local services, such as adult education centres, should be ensured, as they have been proved to have potential for significant regional and local impact, with positive outcomes on social inclusion and wellbeing.
3. Data interoperability should be increased: a higher level of standardisation can boost health data governance and collaboration among different healthcare stakeholders.

c) Data Literacy

1. Knowledge of data and data skills should be one of the focus areas of health digital education. Understanding how health data are collected, stored and shared can significantly impact on the use of health digital technologies.
2. Data protection, especially against data misuse and fraud, is a topic of paramount importance within adult education work. With rapidly advancing technology, individuals must receive prompt and effective training on how to accurately identify fraudulent websites, messages, or other means of communication to prevent further harm.

Policy Recommendations

According to the study on health data, digital health and artificial intelligence in healthcare of the European Commission⁸, healthcare services and products are evolving, and technological changes are driving this disruption. If used appropriately, innovative pathways supporting the transformation of healthcare systems have the potential to improve citizens' health outcomes.

In the communication of the EC on the European Health Data Space⁹, it is recognised that *“digitalisation is essential for the future of healthcare. The digital transformation is crucial to provide better healthcare to citizens”*. However, it is also observed that *“today’s EU health sector is rich in data, but poor in making it work for people and science”*.

In the report *“Data and digital health in the WHO European Region in 2023”* of the World Health Organization (WHO)¹⁰, it is acknowledged that a data-driven culture will allow citizens to access, use and manage health data, but several challenges lie ahead.

We need to make sure people can trust digital health tools, and that everyone, everywhere, can access them equally.

Natasha Azzopardi-Muscat
Director for Country Health Policies and Systems at the WHO Regional Office for Europe

Digital and health literacy are recognised by the WHO as means to get sustainable changes and to support and empower people and systems at all levels of society – decision-makers, organizations, communities and individuals – to make healthy choices. Both digital and health literacy are crucial for health-care professionals and the general public to effectively engage with digital health technologies and make informed healthcare decisions¹¹.

The following policy recommendations are of interest to political decision-makers, the EU, Member States and relevant organisations – but especially addressed to health care authorities and local / regional policy makers.

Improving skills in health literacy and increasing trust in digital health

- **Promoting the dissemination of educational resources to citizens.**

Developing educational programmes that improve digital and data literacy so that citizens themselves can make informed decisions about their health is paramount. These programmes should be intuitive, accessible and understandable to increase trust and acceptance among users, such as educational platforms. For example, the resources made available by the TRIO project, especially the manual and the learning platform aim to inform and educate adults of all ages (with a particular focus on the ranges 18-35, 36-50, 51+) and education levels, can be useful tools to improve digital, health, and data skills, and empowering citizens to navigate the eHealth landscape effectively.



- **Integrating digital literacy into education curricula**

Digital health can be considered a new form for providing patient care¹². Integrating digital literacy into the training and continuous education of the next generation of practitioners will ensure the capacity of exploiting the opportunities provided by the new technology and to provide care effectively. Training courses on communication may also enhance the dialogue among health practitioners and patients.

- **Strengthening security in digital health systems**

Privacy and security concerns are one of the main obstacles for a wider use of digital health systems. At the same time, the lack of knowledge of digital health systems may expose to significant risks (data breach, hacking, etc) and consequently reduce trust in these novel systems. As patients and providers utilize more and more electronic health records (EHRs), telemedicine, mobile health apps, and wearable devices, ensuring the confidentiality, integrity, and availability of health data is crucial to maintaining patient trust and complying with regulations, such as GDPR. Robust encryption, multi-factor authentication, regular security audits, and comprehensive privacy policies are essential measures to safeguard health information, as well as education measures addressed both to healthcare professionals and patients.

Ensuring social inclusion in healthcare policies related to digital technologies and data-driven solutions

- **Tackling health inequalities via digital literacy**

Digital exclusion can exacerbate health inequalities by making it more difficult to access healthcare, navigate and use services effectively, and obtain the necessary resources for a healthy life. Digital skills are key to reducing social inequality and to supporting health choices, as this requires the ability to seek, select and understand health information available online.

- **Digital literacy and accessibility**

To ensure inclusivity, digital health tools and applications must be accessible and user-friendly, catering to individuals with different levels of digital and health literacy. Additionally, digital technologies should be developed with consideration for the needs of people living in remote areas and representatives of vulnerable groups.

- **Stakeholders' engagement and community building**

Encouraging partnerships between different sectors (education, academia, public sector, healthcare, and technology) and stakeholders (citizens of all age, policy makers, associations, healthcare professionals, researchers,) is necessary to create interdisciplinary synergies that can support digital and health literacy simultaneously.

Continuous research and investments

- **Research and analysis of health, digital and data literacy policies**

Investing in research is essential for monitoring the digital and health skills gap, evaluating the effectiveness of health, digital and data literacy interventions, and developing evidence-based practices that can be implemented. Encouraging the use of participatory methodologies should be a priority.

- **Funding for health, digital and data literacy**

European, National and local authorities, as well as private funders, should ensure grants and funding for innovative projects that aim to improve digital and health literacy, encouraging the development of new approaches (including the web-focused gamified approach) and technologies.

- **Ensuring interoperability of data within the healthcare sectors and between system**

Continuity of care is a key priority for healthcare delivery¹³. To achieve this, health data stored in different hospitals, systems, and countries must be shareable in a secure and privacy-compliant manner. It is essential that the measures outlined in Directive 2011/24 are implemented to ensure continuity of care for European citizens across borders and within the EU health data space.

Relevant national and local stakeholders

In this section, the main stakeholders at national and local level are reported. They are some of those who will be invited to adopt, share and disseminate the main outputs of the TRIO project.

PORTUGAL

Stakeholder name	Link	TRIO theme	Local National Europe
Sociedade Portuguesa de Literacia em Saúde (SPLS)	https://splspportugal.com/	Health	National
Escola Superior de Saúde do Politécnico do Porto	https://www.ess.ipp.pt/	Health	National
Escola Nacional de Saúde Pública	https://www.ensp.unl.pt/	Health	National
Research Institute for Design, Media and Culture [ID+] i	https://idmais.org/research-group/health-design-lab/	Health and Digital	National
Instituto de Saúde Pública da Universidade do Porto (ISPUP)	https://ispup.up.pt/en/	Health	National
European University Alliance for Global Health	https://www.eugloh.eu/about/what-is-eugloh	Health, digital, data	European
Porto4Ageing	https://www.porto4ageing.up.pt/	Health, digital, data	National

THE NETHERLANDS

Stakeholder name	Link	TRIO theme	Local National Europe
Pharos	https://www.pharos.nl/	Health	National
Alliantie Digitaal Samenleven	https://digitaalsamenleven.nl/	Digital	National
Gezondheidsdata Netwerk Nederland	https://www.umcg.nl/gezondheidsdata-netwerk-nederland/	Data	Local

GERMANY

Stakeholder name	Link	TRIO theme	Local National Europe
AOK Bundesverband	https://www.aok-bv.de/engagement/gesundheitskompetenz/	Health	National
Initiative D21	https://initiated21.de/	Digital	National
Stifterverband	https://www.stifterverband.org/charta-data-literacy	Data	Europe

SPAIN

Stakeholder name	Link	TRIO theme	Local National Europe
Poncemar fundation	https://www.fundacionponcemar.com/	Health	Regional/National
Cibervoluntarios	https://www.cibervoluntarios.org/es	Health	National
Servicio Murciano de Salud	https://www.murciasalud.es/	Health	Regional
FFIS	https://www.ffis.es/	Health	Regional

ROMANIA

Stakeholder name	Link	TRIO theme	Local National Europe
Dezvoltarea Politicilor sociale si de sanatate din Judetul Iasi	https://social-sanatate.ro/	Health	Regional
SNMF- Societatea Nationala de Medicina Familiei	https://snmf.ro/	Health	National
ADR – Autoritatea pentru Digitalizarea Romaniei	https://www.adr.gov.ro/	Digital	National
Institutul de Educatie Continua, Univ Al.I.Cuza Iasi	http://iec.psih.uaic.ro/	Digital	Local
Asociația Specialiștilor în Confidențialitate și Protecția Datelor (ASCPD)	https://ascpd.ro/	Data	National

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