All Policies for a Healthy Europe
Improving citizens' well-being

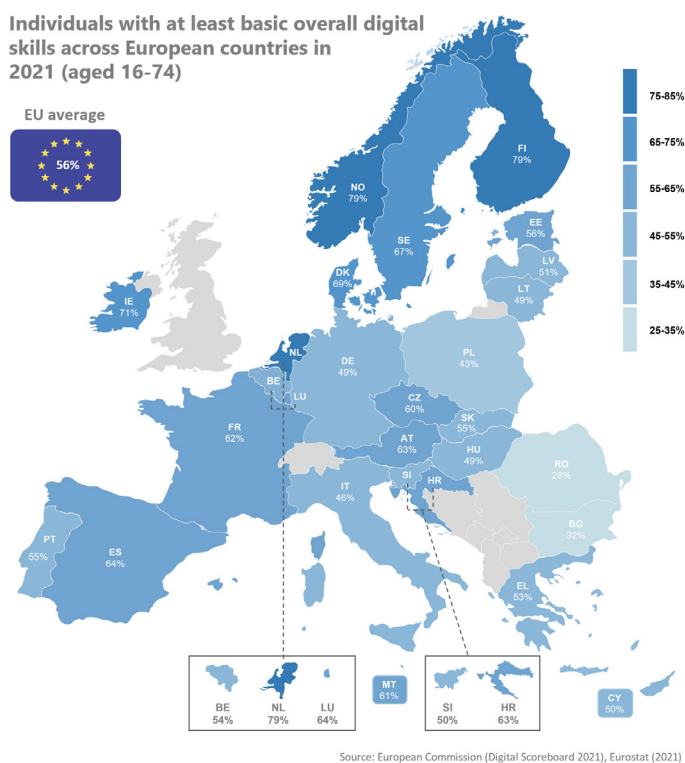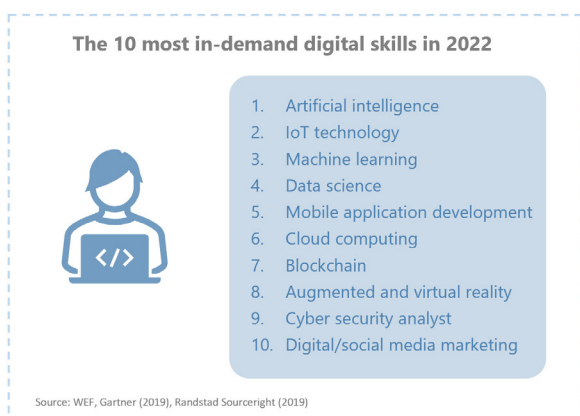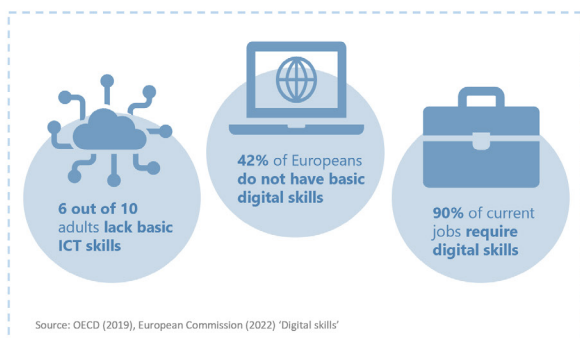# Bridging the gap: Digital skills in Health and Care

Introduction

In Europe, as in the rest of the world, the digitalisation and automation of services and the development of artificial intelligence (AI), Internet of Things (IoT), machine learning, data science and more are spreading to all sectors and transforming industries. More than nine out of ten jobs in Europe now require digital skills[1] putting them among the top 10 most in-demand skills for 2025[2].

President of the EU Commission, Ursula von der Leyen's 2022 state of the union address came with the announcement that 2023 will be the European Year of Skills. The Commission has also made one of its priorities "A Europe fit for the digital age"[3] and a digital transition that benefits everyone, setting a target for basic digital skills at a minimum of 80% of EU citizens[4].

Yet, as we approach the European Year of Skills[5], four out of ten Europeans do not possess basic digital skills[6], with a severe imbalance among Member States. In Romania and Bulgaria, up to seven out of ten adults lack basic digital skills. As a result, and as evidenced by several reports, the need to upskill and reskill the European workforce is becoming increasingly important[7, 8].

Digital skills mismatch in the EU

6 out of 10 adults **lack basic ICT skills**

42% of Europeans **do not have basic digital skills**

90% of current jobs **require digital skills**

Source: OECD (2019), European Commission (2022) 'Digital skills'

The 10 most in-demand digital skills in 2022

1. Artificial intelligence
2. IoT technology
3. Machine learning
4. Data science
5. Mobile application development
6. Cloud computing
7. Blockchain
8. Augmented and virtual reality
9. Cyber security analyst
10. Digital/social media marketing

Source: WEF, Gartner (2019), Randstad Sourceright (2019)

Individuals with at least basic overall digital skills across European countries in 2021 (aged 16-74)

EU average: 56%

Legend
75-85%
65-75%
55-65%
45-55%
35-45%
25-35%

FI 79%, NO 79%, SE 67%, EE 56%, DK 69%, IE 71%, LV 51%, LT 49%, NL, BE, LU, DE 49%, PL 43%, CZ 60%, SK 55%, FR 62%, AT 63%, HU 49%, SI, HR, RO 28%, IT 46%, PT 55%, ES 64%, BG 32%, EL 53%

BE 54%, NL 79%, LU 64%, MT 61%, SI 50%, HR 63%, CY 50%

Source: European Commission (Digital Scoreboard 2021), Eurostat (2021)

The health and care sector is no exception. From the digitisation of patients' health records to telemedicine, artificial intelligence (AI)-enabled medical devices and diagnostic support for health and care professionals, the digitalisation of health is set to revolutionise medical practices, access to care, and relations between doctors and patients[9]. Combined with the long-term effects of the pandemic on employment and the ageing population, this digitalisation also promises to reshape the demand for digital skills and professions in the health and care sector[10].
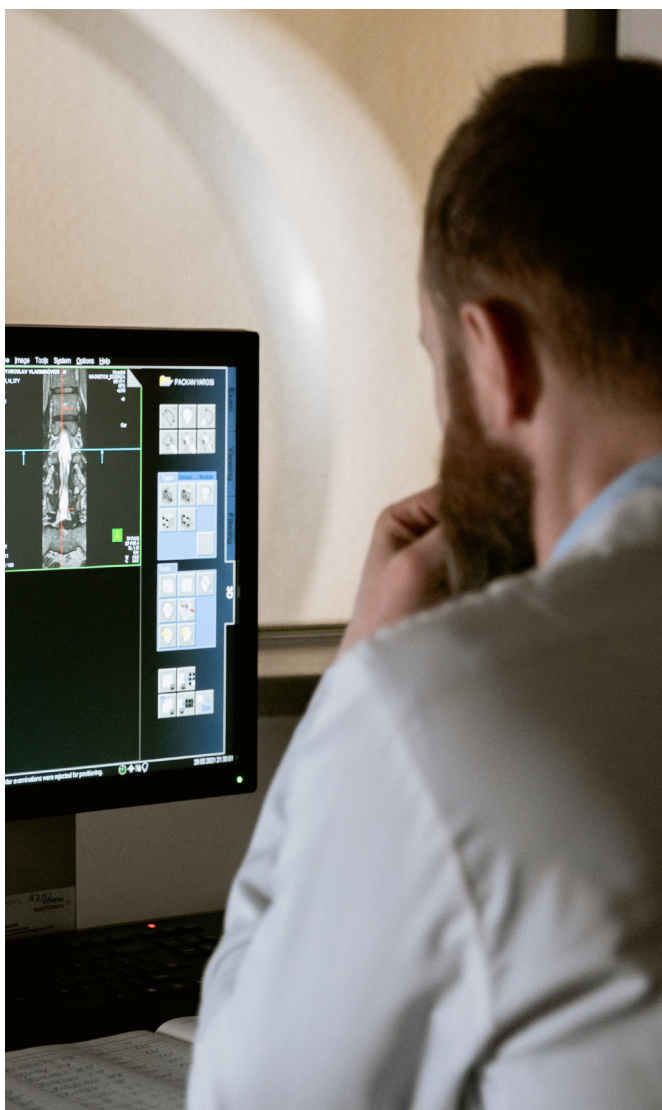
Yet the digitalisation of the care pathway and, more broadly, the digital transformation of the health and care sector remain unequal across Europe. It is hampered by the general lack of digital skills among professionals working in the health and care sector and among patients, carers and families. It is also hampered by an absence of a clear European strategy for digital health skills[11] and digital health literacy[12].

Indeed, 79% of health and care professionals surveyed by the European Health Parliament in 2016 said that eHealth/mHealth has or will significantly impact their career. However, 61% of them also reported they had never received dedicated training in digital skills to learn how to deal with these fundamental shifts[13].

While full of potential benefits, the digitalisation of the care pathway risks confusing those lacking the skills to use these digital tools. As with the digital transformation of many fields, confusion caused by new and unfamiliar technological tools can be discriminatory in its effects. Although this skills gap is not specific to health and care, it deserves policymakers' attention as access to care is a fundamental right[14]. Digital has the potential to increase acess to health and care but it must not increase inequalities and people will be left behind if digital skills are not a priority in policy and delivery. This is particularly valid as the patients most likely to require care - namely the oldest and most isolated patients - are the less likely to seek care and the less likely to use digital tools such as telehealth to compensate[15]. The inverse care law risks in this way being further perpetuated, with the patients most likely to require care being also the least likely to receive it.

It is essential that learning and supporting programmes are designed in a way so as not to exclude anyone from advances in digital health and care and not to be content with ineffective duplicate systems, which increase the workload of health and care professionals, risking additional costs and medical errors. It is also crucial to ensure that health and care professionals know the latest digital solutions available in their speciality and how to use them effectively, responsibly, and ethically, with patients' interests at the centre. Patients, in turn, should all be able to make better-informed decisions about their health and master the digital solutions that allow them more accessible and faster access to health and care.

On this topic, the European Commission has launched or plans to launch many initiatives related to digital skills (see Annex). However, the European Commission still lacks a clear strategy for digital health skills. Further action on digital skills in health is essential a) for ensuring that the European health and care workforce have in-demand digital skills which allow them to take advantage of the latest innovations; b) for patients to be able to access the benefits of digitalisation through digital services and information; c) for the betterment of quality of life across the EU. A coordinated policy approach addressing these three areas must be implemented to maximise the potential of digitalisation in Europe.

All Policies for a Healthy Europe recommends:

Recommendation 1 – Develop a strategy in the next Commission work plan on digital health skills to ensure that all citizens and health and care professionals can benefit from the digital health transformation through continuous professional development and supporting programmes for citizens and healthcare professionals.

Recommendation 2 – Develop an interactive mapping tool encompassing initiatives dedicated to digital skills[16] to facilitate understanding and access to EU-related financial support mechanisms and programmes. This mapping tool should help citizens and professionals identify and apply for the most appropriate source of EU support among the programmes and instruments available to them. The interactive tool should also explain the logic of EU learning and supporting programmes.

Recommendation 3 – Help bridge health inequalities by developing citizens' literacy of digital health tools. Together with the Member States, the EU should invest more in digital health and care infrastructure and disseminate best practices to help citizens (notably Europeans living in remote areas, disadvantaged socio-economic groups and elderly citizens) to benefit from the digital transformation of health and care.

Recommendation 4 – Raise awareness and better prepare the population for career opportunities in digital health and care through information campaigns and appropriate training at different levels of the education system. Career paths in digital health and care should be better defined and promoted. The (target)-population, such as students, parents, career advisers and school staff, should also be better informed and trained for these new professions. The revision of curricula and the development of appropriate training will be essential to achieve this. Collaboration between the education sector and the industry as well as funding are also essential to successfully bridge the gap between the current provision of digital skills in the education system and the demand for skills in the digital health sector.

CASE STUDY:
DHI Scotland encourages school kids to pursue a career in Digital health and care

A recent study by The Digital Health & Care Innovation Institute (2019) found a general lack of awareness of the careers opportunities in the digital health and care sector among Scottish school children – both at primary and secondary level. Over the past five years, the DHI has run targeted initiatives in association with the Glasgow Warriors to raise awareness of digital health issues and careers in the sector among school children.

Through the Digi Inventors Challenge project (now global), for example, DHI encourages school children to identify a health problem and develop ideas that could be turned into a digital solution. Through this project, students improve their digital skills and are exposed to the career opportunities available in digital health and care, including IT, programme management, legal aspects, etc.

Recommendation 5 – Promote closer collaboration with key health, care and cross-sectoral stakeholders to develop online learning resources on digital skills and health literacy, including patients, health and care professionals, schools, colleges, universities social partners and the private sector.

Recommendation 6 – Review and transform health and care professionals' curricula to include greater knowledge of digital health, data sciences and emerging technologies with Member States and European universities. Health and care professionals, particularly nurses and caregivers, have a pivotal role in optimising digital technologies and communicating to patients their rights and the implications of using tools such as data sharing and AI, as well as their limitations.

Strengthening the digital health education of these professionals would avoid putting an excessive burden on citizens whilst ensuring access to accurate information for all.

Recommendation 7 – Encourage continuous professional development and the development of lifelong training programmes for key stakeholders such as data scientists, IT professionals in health and care, as well as patients' representatives and organisations to help bridge the gap between new technologies and societal needs, as well as to champion the benefits of digital health. Targeted attention should be given to the quality and availability of inclusive learning programmes and educational opportunities that put health and care professionals at the centre of learning.

CASE STUDY: Randstad France "Appel Medical"

In France, the health sector is experiencing severe labour market shortages, particularly for nursing and assistant positions. The sector is also suffering from a lack of digital skills among jobseekers and those already working in the sector. To address this lack of digital skills and workers, Randstad France has launched a project called Appel Medical. Thanks to this programme, many jobseekers and employees have benefited from digital training through 5 different means: apprenticeships, e-learning programmes, official and private certifications, as well as on-site training for technical skills such as reanimation, and technology systems, paediatrics and elderly care. As a result, Randstad France has seen a surge of 60% candidates digitally trained in their skills compared to 2020.

Annex

Initiatives

Digital Skills: Improving their provision	The European Commission recently published an initiative to identify what needs to be done to promote digital skills early on and at all stages of education and training. This initiative **is still in preparation,** and its adoption by the European Commission is planned for the **fourth quarter of 2022.** To date, we do not know what the EC's proposal for a recommendation will contain. However, the initiatives mentioned below will likely be part of this initiative.
'2030 Digital Compass: the European way for the Digital Decade.'	This document sets out the **ambition** to endow Europe with digitally empowered citizens and a digitally skilled workforce. By 2030, a minimum of 80% of Europeans should have at least basic digital skills. To reach this target, there is a need to start with education and training.
Digital Skills and Jobs Coalition	This coalition brings together **private and public stakeholders to close the digital skills gap** with tangible results. The DSJ Platform will be the one-stop shop for digital skills training, best practices and information.
National coalition for digital skills and jobs	National and regional coalitions bring together a range of partners who develop concrete measures to bring digital skills to all levels of society. Partners include ICT and ICT-intensive companies, education and training providers, education and employment ministries, public and private employment services, associations, non-profit organisations and social organisations.

Initiatives

The European Digital Skills and Jobs Platform	The Digital Skills and Jobs Platform provides a wide range of high-quality information, resources and opportunities related to digital skills and jobs across all levels, from very basic to advanced. Up-to-date insights are offered in an accessible way to new users, while more experienced professionals can benefit from targeted content relevant to their field of expertise. Additionally, collaborative space is available for community members to network, interact and grow together.
EU Code Week	EU Code Week is a grassroots initiative which aims to bring coding and digital literacy to everybody in a fun and engaging way through programming and other tech activities.
The European Skills Agenda	The European Skills Agenda is a **five-year plan** to help individuals and businesses develop more and better skills. This agenda sets the target of 70% of adults having at least basic digital skills by 2025. In addition, to support digital skills, a number of initiatives were launched, such as a recommendation on **Vocational Education and Training (VET) and ICT Jump-Start training.**
The Digital Education Action Plan 2021-2027	This plan presents a **vision for boosting digital capacity** at all levels of education and training, creating a high-performing education ecosystem and enhancing digital competencies. As it will require deeper cross-sectoral cooperation, the Commission will set up a **European Digital Education Hub** to strengthen exchange and cross-sector collaboration. It contributes to achieving the goals of the European Skills Agenda and the '2030 Digital Compass: the European way for the Digital Decade'.

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Funding

The Recovery and Resilience Facility	20% of its funds must be spent on the digital transition of Member States, including on digital skills.
The Digital Europe Programme	Promoting digital skills is a core element of this new funding, with a budget of around 200 million euros for 2021 and 2022.
The European Social Fund Plus	A fund to support EU Member States in reforming national education and training systems to support key skills.
The European Global Adjustment Fund	Supports training in digital skills to help laid-off workers find another job or set up their own business.
Horizon Europe	Finances grants for Master, PhD and post-graduate research activities in all fields, including digital through Marie Sklodowska-Curie actions and the European Institute of Innovation & Technology.
European Regional Development Fund	The European Regional Development Fund (ERDF) aims to strengthen the European Union's economic, social and territorial cohesion by correcting imbalances between its regions. In 2021-2027 it will enable investments in a smarter, greener, more connected and more social Europe closer to its citizens.

References

1 European Commission (2017) "The digital skills gap in Europe", accessible from: https://digital-strategy.ec.europa.eu/en/library/digital-skills-gap-europe

2 President of the EU Commission, Ursula von der Leyen's 2022 state of the union address came with the announcement that 2023 will be the European Year of Skills. The Commission has also made one of its priorities "A Europe fit for the digital age"3 and a digital transition that benefits everyone, setting a target for basic digital skills at a minimum of 80% of EU citizens4.

3 European Commission "Shaping Europe's digital future", accessible from: https://health.ec.europa.eu/ehealth-digital-health-and-care/overview_en#shaping

4 European Commission "Europe's Digital Decade", accessible from: https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age/europes-digital-decade-digital-targets-2030_en

5 President of the EU Commission, Ursula von der Leyen's announcement in her state of the union address that 2023 will be the European Year of Skills.

6 World Economic Forum (2020). "The Future of Jobs Report 2020", accessible from: https://www3.weforum.org/docs/WEF_Future_of_Jobs_2020.pdf

7 Skilling Today, a Randstad RiseSmart (2020) global survey found that almost 70% of HR respondents asked or required their staff to upskill or reskill to meet the changing needs of their organisation.

8 McKinsey & Company (2020) global survey on future workforce needs found that 87% of executives and managers surveyed said they were currently experiencing or expected to experiences skills gaps in the coming years.

9 Rimpiläinen, S., Morrison, C. and Rooney, L. (27th April 2018). Review and Analysis of the Digital Health Sector and Skills for Scotland. Digital Health and Care Institute. Glasgow: University of Strathclyde. https://doi.org/10.17868/63863

10 OECD (2021), OECD Skills Outlook 2021: Learning for Life, OECD Publishing, Paris, https://doi.org/10.1787/0ae365b4-en

11 Digital health skills can be defined as the digital competencies needed by health and care professionals in order to carry out their daily work in the health and care sector.

12 Digital health literacy refers to the ability to seek, find, understand and appraise health-related information from electronic resources and apply the knowledge gained to making appropriate health decisions in order to address or solve a health problem (IC Health definition).

13 European Health Parliament (2016) "Digital skills for health professionals", Committee on digital skills for health professionals, accessible from: https://www.healthparliament.eu/digital-skills-health-professionals/.

14 Charter of Fundamental Rights of the European Union (2012/C 326/02). Article 35.

15 Snyder Bulik, B. (2022). "Pharma marketers, take note: Rural patients have technology, but lag in trust and health confidence study says", EndPoints News, accessible from: https://endpts.com/pharma-marketers-take-note-rural-patients-have-technology-but-lag-in-trust-and-health-confidence-study-says/.

16 See also EC "Interactive mapping tool on funding opportunities for audiovisual and news media". Accessible from: https://digital-strategy.ec.europa.eu/en/policies/tool-funding-media#

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