



AI2MED

Artificial Intelligence in Medical Care: Reducing Errors and Saving Lives



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AI2MED

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Statement on the use of generative AI Tools in the proposal preparation: In developing this report, we employed various generative AI tools, including ChatGPT, QuillBot, and Grammarly, to enhance sentence structure, grammar, and word choice. Recognizing the importance of not solely depending on AI-generated outputs, we meticulously reviewed all content to ensure accuracy, relevance, and alignment with the proposal’s objectives. We implemented the following quality assurance measures: comprehensive review and validation, transparency in AI usage, intellectual property compliance, and acknowledgment of AI limitations. By adhering to these practices, we ensured that the AI-assisted sections of the proposal uphold the highest standards of accuracy, originality, and compliance.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
1 INTRODUCTION.....	2
1.2 Objectives.....	2
1.3 Methodology	3
2 FINDINGS FROM EXPERT INTERVIEWS	4
2.1 Skills Required for AI Adoption.....	6
3 SKILLS ANALYSIS.....	7
3.1 Skills Matrix Method	7
3.2 AI Country Profiles	13
3.2.1 Austria.....	13
3.2.2 Croatia	15
3.2.3 Germany.....	17
3.2.4 Ireland	20
3.2.5 Italy	22
3.2.6 Montenegro	24
3.2.7 Slovenia.....	26
3.3 Regional Analysis of AI Adoption.....	28
3.4 EU perspective.....	28
4. DISCUSSION.....	30
4.1 Challenges and Barriers	30
5. CONCLUSION	32
6. REFERENCES	33
7. APPENDICES.....	36
Appendix A: AI and Medicine – Scoping Questionnaire	36
Experts Background.....	36
Expertise in Patient Safety Domains	36
Artificial Intelligence Related Questions	36
AI Skills Training	36
Appendix B: List of ESCO analysed skills.....	38

LIST OF TABLES

Table 1 – Classification of Impact Level onto OECD AI Principles.....	9
Table 2 – List of Skills for AI Adoption based on ESCO.....	11

Executive summary

The **AI2MED project** addresses a pivotal challenge in European healthcare: bridging the skills gap to enable effective and equitable adoption of Artificial Intelligence (AI). By engaging healthcare professionals, educators, and policymakers across seven countries - Austria, Croatia, Germany, Ireland, Italy, Montenegro, and Slovenia - the project fosters collaboration and knowledge-sharing to prepare the workforce for AI integration while safeguarding patient safety and ethical standards.

As part of this initiative, the project conducted a detailed skills gap analysis (Work Package 2), combining expert interviews, thematic analysis, and alignment with frameworks such as ESCO and DigComp 2.2. This research identified critical gaps in AI-related competencies, including data analysis, ethical AI application, and interdisciplinary teamwork. A skills matrix was developed to map these findings, offering a structured approach to addressing the challenges posed by AI disruption and innovation.

Key insights emerged from the analysis.

First, targeted education and training initiatives are essential to equip healthcare professionals with the skills needed for AI adoption, particularly in high-risk medical applications.

Second, the EU AI Act underscores the importance of compliance and governance, requiring robust frameworks for the safe and ethical use of AI in healthcare.

Third, regional disparities in skills and resources highlight the need for tailored, context-specific strategies to support workforce readiness across diverse healthcare systems.

The project also identified challenges, including engaging diverse stakeholders, ensuring inclusivity in skill-building efforts, and navigating regulatory complexities. By leveraging the networks of all project partners, the study extended its reach beyond the seven focus countries to provide a comprehensive understanding of the European AI-in-MED landscape.

Overall, the AI2MED project demonstrates that a collaborative, multi-stakeholder approach can build a healthcare workforce prepared to embrace AI responsibly and effectively. By combining research-driven insights, cross-border partnerships, and scalable educational frameworks, the project offers a roadmap for integrating AI into European healthcare systems while ensuring innovation aligns with patient safety and ethical principles.



1 Introduction

The integration of Artificial Intelligence (AI) into healthcare systems across Europe represents a pivotal transformation in medical practice, offering unprecedented opportunities to enhance patient safety and streamline healthcare delivery. With AI technologies capable of reducing diagnostic errors, optimizing workflows, and enabling personalized medicine, the potential to address systemic inefficiencies and improve patient outcomes is immense. However, realizing this potential requires healthcare professionals to acquire specific skills that align with the demands of AI adoption, particularly in areas like data analysis, ethical AI application, and interdisciplinary collaboration.

This report aims to address the regional and national disparities in AI-related skills across seven European countries: Austria, Croatia, Germany, Ireland, Italy, Montenegro, and Slovenia. By analysing expert feedback and aligning findings with established frameworks such as ESCO and DigComp 2.2, the study identifies skill gaps and provides actionable recommendations to bridge these divides. The insights presented here serve as a roadmap for policymakers, educators, and healthcare providers to foster workforce readiness, ensuring equitable AI implementation across diverse healthcare contexts.

However, it's also important to frame any research into this topic within the EU AI Act¹. The EU AI Act, the world's first comprehensive legal framework for artificial intelligence, has significant implications for the adoption of AI in medicine. By categorizing AI systems based on risk levels, the Act introduces stringent requirements for high-risk applications, such as those used in healthcare diagnostics, patient monitoring, and treatment planning. These systems must adhere to rigorous standards for safety, transparency, and accountability, ensuring that their deployment does not compromise patient safety or ethical principles. For healthcare providers, this framework necessitates the adoption of robust governance and compliance measures, which may include continuous monitoring of AI performance and regular audits to meet regulatory expectations.

While the EU AI Act emphasizes trust and safety, it also presents challenges for innovation in the medical domain. The administrative burden and compliance costs associated with high-risk AI applications may discourage smaller enterprises and startups from pursuing healthcare-related AI projects. However, the Act also fosters a harmonized regulatory environment across the EU, facilitating cross-border collaborations and creating opportunities for large-scale deployment of compliant AI technologies. For stakeholders in medicine, including policymakers, developers, and healthcare providers, the Act underscores the need for a balance between safeguarding public interests and fostering innovation, paving the way for a safer and more effective integration of AI into healthcare.

1.2 Objectives

The objectives of this report can be summarised as follows:

- Identify the current skills landscape among medical professionals.
- Highlight emerging skills necessary for AI adoption.
- Assess skills gaps across Europe, accounting for national and regional differences.
- Provide actionable recommendations to address these gaps.
- Defining the needed AI-in-MED skills and competences (Project proposal special objective).

¹ <https://www.europarl.europa.eu/topics/en/article/20230601STO93804/eu-ai-act-first-regulation-on-artificial-intelligence>



1.3 Methodology

The methodology for this research consists of:

Data Sources: Two rounds of expert interviews.

Participants: General practitioners, nurses, radiologists, surgeons, and other healthcare professionals.

Analysis: Thematic analysis of qualitative responses and comparative regional analysis.

Supplementary analysis is then conducted on blended data from the ESCO v1.2 framework and other data sources to identify the current essential skills that are most likely to be disrupted by innovation in AI.



2 Findings from Expert Interviews

The expert interview process was a two-stage Delphi protocol approach, whereby the results of the 1st round of interviews would then form the basis for the development of the 2nd round of interviews. Both rounds of interviews attained ethics approval through the project coordinators, Algebra University in Zagreb, Croatia.

Overall, 78 responses were recorded across the two protocols, with approximately another 30 or more experts approached to participate who were unable to join the study, resulting in over 100 productive interactions with medical professionals.

For this deliverable (D2.2), the analysis is based on the first round of interviews, while the input and analysis from the second round of interviews were used for the second deliverable (D2.3). The protocol for the first round of interviews can be found in Appendix A.

Particularly of interest is the open text questions which elicit opinions from experts regarding the current and future state of AI adoption within medicine, specifically to support patient safety. A summary of the key responses are provided as follows:

What AI systems can you identify within your expertise that are currently used help improve patient safety?

****Representative Quotes:****

"Unfortunately, I cannot identify any AI system that is currently used in order to help patient safety."

"Clinical decision support systems embedding AI models (usually predictive models), image analytics, natural language processing, monitoring and telemedicine systems. Some of them are already integrated into clinical use, the majority is still the subject of advanced research and innovation projects."

"None, at the moment"

What has been the impact of these systems on patient safety?

"Some improvement but no substantial difference at this moment"

"Huge impact, time flexibility, health risk prediction."

"The main impacts relate to harmonizing patient treatment and decisions, reducing human errors, and helping users deal with large datasets that would be underused otherwise."

What AI systems can you identify that are being planned to be used help improve patient safety in the future?

"Globally, and in my area of expertise (drugs and medication), I know that AI has been/is/will be used as support tool in rational prescribing, detection of potential drug- drug interactions, in monitoring of side-effects of medicines (pharmacological), designing of new medicines with better efficacy and safety profile, etc."

"I think existing systems will be enhanced, especially AI-based clinical DSS embedding predictive models. Focus will be put on assessing the explainability, reliability, bias and fairness of the models, to promote equality and safety of the users."

"PMI cardio", "Queen of Hearts". "Both systems have been developed in order to improve ekg interpretation"

In your area of expertise, who are the key decision makers involved in the decision making process to implement and use a new AI system?

"I think that in my country (Montenegro), the key decision maker about the implementation of new AI system in the area of medicines is the Government of Montenegro, Ministry of Health. If I am informed well, in our national regulation (primarily Law on Medicines), AI hasn't been recognized and its use hasn't been regulated yet. Health insurance fund (as payer) and Institute for medicines and medical devices (regulatory aspect)



should also be included. Medical, Dental and Pharmaceutical chambers of Montenegro (ethical, professional aspect, etc.), maybe Ministry of Public administration because of monitoring of data safety, etc."

"Regulatory authorities, healthcare managers, and companies developing either AI solutions or health information systems should integrate AI solutions."

"Scientific societies and boards"

Have you undertaken or provided any training that covers how AI can be used to improve patient safety? If yes, can you provide an overview of what the training covered? Try and include curriculum topics, time spent training, and AI tools used in the training.

"I held a course on the use cases of ChatGPT and other LLMs in psychiatry. We covered topics from the basics of how LLMs work to the implementation of LLMs in everyday practice, including the possible issues that can arise from these systems."

"Epic EMR 2 months training: Epic EMR is a leading electronic medical record system that streamlines patient record management and enhances care delivery. Key features include comprehensive patient records, interoperability for secure data sharing among health care providers, patient engagement through portals like MyChart, high customization to meet institutional needs, integrated modules for various specialties, and analytics tools for improved care outcomes."

AliveCor Training 3 weeks training: AliveCor offers advanced cardiac monitoring through devices like KardiaMobile and mobile apps. Training focuses on effective device usage, data interpretation for conditions such as atrial fibrillation, integration with EMR systems like Epic, and clinical applications for remote monitoring and telehealth. Additionally, training includes education on regulatory compliance regarding medical device usage and patient data management."

Together, Epic EMR and AliveCor enhance healthcare delivery efficiency and patient management through innovative technology and data utilization."

In your opinion, what are the key skills required for understanding and using AI effectively in the workplace to improve patient safety?

"Along with a satisfactory degree of medical education and experience in the relevant field (to know what and where to look for, how to get the most reliable required information, etc.), a certain degree of IT knowledge is obviously required (the use of the Internet, the use of appropriate programs, etc.)."

"Knowledge of how AI works"

"First proper training of the whole staff of a department is necessary (physicians, nurses, etc). Then, it will probably take a lot of time to translate common good practices for patient safety into a routine approach with AI."

With respect to patient safety, what are the key challenges and limitations faced when introducing AI into medicine?

"In general, a great pressure on health resources and the deficiency of health personnel in health institutions, especially in some parts of the country educated professionals/healthcare workers in the field of AI limited and/or obsolete organizational, professional, technical and financial resources for AI implementation ensuring data confidentiality/ethical aspect."

"Proper countermeasures in case of AI failure"

"GDPR is the first issue to face when considering the introduction of AI in medicine. Moreover, a proper knowledge of this "technology" and a reasonable trust by the operators it's the cornerstone."



2.1 Skills Required for AI Adoption

From the responses provided by experts, there are a number of key thematic spaces where skills need to be developed. These can be seen as:

Digital Literacy: Competence in using AI-based tools.

Data Analysis: Understanding and interpreting AI outputs.

Ethical AI Understanding: Addressing data privacy, bias, and decision transparency.

Collaboration: Working with data scientists and IT professionals.

Trustworthiness of AI: Knowing how to trust the output from AI systems.



3 Skills Analysis

Building off the expert interviews, an extension to these interviews is to conduct a skills gap analysis based on the current supply of skills. To do this analysis, we are interested in understanding what are the current essential skills that can accommodate the inclusion of AI. It's important to note that a significant amount of discussion about the introduction of AI centres on how AI will disrupt tasks and occupations. However, it's important to frame this disruption objectively. In this context, we see disruption as a force of change that provides opportunities for AI adoption and improvements in how humans work. As such, the identification of skills within the skills matrix can be seen as those skills that may be most prone to disruption, but also those most likely to support the adoption of AI, while helping improve patient safety. As such, we present the methods for developing the skills matrix, followed by the matrix itself. We then frame the skills matrix into the seven countries of interest for the AI2MED project, which is Austria, Croatia, Germany, Ireland, Italy, Montenegro, and Slovenia.

3.1 Skills Matrix Method

The identification of the skills best suited to support the adoption of AI into healthcare professions was guided by a 5-step matrix method.

The list was created using the following procedure:

1. A list of the top 10 professions by employment numbers across the seven partner countries. The list of professions was:
 - 1) General practitioners
 - 2) Nursing
 - 3) Medical specialists (e.g., surgeons, cardiologists)
 - 4) Pharmacists
 - 5) Dentists
 - 6) Medical administrators
 - 7) Radiologists
 - 8) Clinical laboratory technicians
 - 9) Paramedics
 - 10) Midwives
2. The list of essential skills for each profession was extracted from the ESCO v1.2 framework for each profession.
3. The list was then combined and pivoted to make each essential skill the foundation of the table. This resulted in a total of 294 skills across 10 medical occupations.
4. From this list of skills, the 294 skills were categorized and aligned with the DigComp 2.2 framework. This resulted in identifying 52 skills mapped onto the DigComp 2.2 framework.
5. The list of digital essential skills was then also evaluated as to the potential for AI impact based on the O*Net list of skills and the OECD AI Principles. For this, a five-point AI impact scale was developed.

Categories for AI Impact Scale:

- Minimal Impact:**
 - Skills requiring uniquely human attributes such as empathy, creativity, or cultural sensitivity.
 - Skills tied to highly manual or dexterous tasks (e.g., surgical operations, physical therapy).
 - Examples: "Empathize with patients," "Provide emotional support."
- Augmentation:**
 - Skills where AI tools enhance human performance but do not replace the human role.
 - These are collaborative tasks where humans and AI work together.



- *Examples: "Analyse medical imaging with AI assistance," "Prepare data for AI analysis."*
- iii. **Moderate Automation:**
 - *Skills that are increasingly being automated but still require significant human oversight.*
 - *Examples: "Manage scheduling and resource allocation," "Process routine diagnostics."*
- iv. **High Automation:**
 - *Skills that are largely rule-based, repetitive, or data-driven, making them highly automatable.*
 - *Examples: "Record patient data," "Process insurance claims."*
- v. **Full Automation:**
 - *Skills that are already or soon will be fully automated due to advances in AI.*
 - *These are tasks where AI can achieve superior performance without human involvement.*
 - *Examples: "Data entry," "Automated reporting."*

The classification scheme was made to align with existing competency frameworks around digitalisation and AI. Specifically, the three frameworks referenced in this classification are the EU DigComp² 2.2, the OECD AI Principles³, and the O*Net Framework⁴. The European Digital Competence Framework (DigComp 2.2) focuses on digital literacy, data handling, and collaboration, emphasizing gradations in skill automation and augmentation. The categories such as "Information and Data Literacy" align with moderate or high automation tasks. The OECD AI Principles focus on human-AI collaboration, highlighting augmentation and oversight roles for humans in increasingly automated environments. Skills involving ethical reasoning and decision-making are considered minimally impacted, while other skills are considered to be highly or fully automated. The O*NET Framework uses abilities and work activities for assessing technological impacts, often with a scale of exposure on a three point "Low", "Medium" or "High" scale. AI exposure categorizations can be translated into automation levels. To better understand how skills aligned with this framework, a detailed analysis was conducted to examine the classification scheme's alignment with the OECD Principles. Skills were categorized into **five levels of AI impact** based on their alignment with these principles: 1. Minimal Impact, 2. Augmentation, 3. Moderate Automation, 4. High Automation and 5. Full Automation. Following table represents classification of impact level onto OECD AI Principles.

² https://joint-research-centre.ec.europa.eu/scientific-activities-z/education-and-training/digital-transformation-education/digital-competence-framework-citizens-digcomp/digcomp-framework_en

³ <https://oecd.ai/en/ai-principles>

⁴ <https://www.onetcenter.org/content.html>



Table 1 – Classification of Impact Level onto OECD AI Principles

Impact Level	Category	Definition	Rationale	Examples	Justification
1. Minimal Impact	Ethical Reasoning	Tasks requiring ethical judgment, interpersonal communication, or empathy.	Skills emphasize unique human traits like understanding emotions, ethical dilemmas, and personal interaction, unlikely to be disrupted by AI.	- "Empathize with the woman's family during and after pregnancy." - "Provide emotional support to patients."	AI lacks emotional intelligence and cannot navigate complex interpersonal dynamics. Aligns with the OECD principle of promoting "human-centred values."
2. Augmentation	Human-AI Collaboration	Tasks where AI tools assist or enhance human performance but do not replace humans.	Collaborative efforts where AI handles specific aspects (e.g., pattern recognition) while humans make critical decisions.	"Analyse medical imaging with AI assistance." "Prepare data for AI analysis."	Reflects OECD's emphasis on accountable AI use, ensuring human oversight and decision-making.
3. Moderate Automation	Oversight	Humans supervise or manage automated systems, ensuring proper functioning.	Tasks involve monitoring AI processes and validating outputs or addressing edge cases AI might not handle effectively.	"Monitor patients' vital signs using AI-powered tools." "Oversee automated diagnostic systems."	Aligns with OECD principles of transparency and explainability, as humans validate and understand AI decisions.
4. High Automation	Operational Tasks	Repetitive, structured, or rule-based tasks highly automatable by AI systems.	Tasks involve clear patterns, allowing AI to operate with minimal human intervention. Humans perform quality checks or fine-tuning.	"Record patient data in electronic health records." "Process insurance claims."	OECD highlights AI's role in improving efficiency in such tasks, requiring safeguards to prevent misuse or errors.
5. Full Automation	Independent AI Operation	Tasks performed entirely by AI, often better or faster than humans.	Highly structured tasks where AI operates autonomously. Humans are not required for intervention unless necessary for exceptional cases or system tuning.	- "Automated reporting of diagnostic results." "Data entry for patient management systems."	OECD recommends AI autonomy focus on proven reliable tasks, ensuring fairness, accountability, and accuracy.



In summary, the alignment of AI impact with OECD AI Principles reflects the OECD's priorities; Human-centred values: Emphasized in "Ethical Reasoning" and "Human-AI Collaboration."; Transparency and oversight: Highlighted in "Oversight" and "Operational Tasks."; Efficient, fair AI systems: Represented by "Independent AI Operation." This classification ensures that tasks align with the OECD's vision of leveraging AI while maintaining human agency, trust, and accountability.

6. The next step in the development of the skills table was to make a frequency count, indicating how often the skill appeared across the 10 professions. This helps capture how specialised a particular skill is, with low frequency counts indicating highly specialised, and higher frequency counts indicating more universal skills.
7. To support the final list of skills that was generated, an additional column was created and then matched using the AI's own output. The resulting table however only comprised of a list of 15 Skills, shown in Table 2.

The table was created this way because of:

Breadth of Sources Accessed

The skills listed were synthesized from publicly available frameworks, research reports, and taxonomies, such as OECD, WHO, and HIMSS. While these sources highlight the most critical AI-relevant skills, they may not provide an exhaustive list of 50 distinct, high-quality, and reliable AI-related skills.

Relevance and Trustworthiness of Sources

The decision to include only skills supported by reputable and specific references ensures the quality and reliability of the output. Expanding the list to 50 skills would require adding less impactful or marginally relevant skills or relying on less authoritative sources.

Nature of AI in Medicine

AI in medicine is a relatively new and rapidly evolving field, and many skills overlap (e.g., data privacy, AI ethics, and digital literacy). A truly exhaustive list may require combining granular sub-skills or exploring niche areas of AI application in specialized medicine."

The final list of skills contains 56 skills, ordered by the indicated AI-Impact rank. While a 5-point scale was used, the highest rank assigned to the skills in the list was 4. The shortlist of Skills that form the centre of the discussion is presented in Table 2 over page, while the complete table can be found in Appendix A.

Table 2 – List of Skills for AI Adoption based on ESCO

No	Skill ⁵	AI Impact Rank	DigComp Code	Frequency	AI Skill Match
1	Manage healthcare users' data	4	1.3	5	Data privacy and cybersecurity practices in healthcare
2	Manage research data	4	1.3	3	Data privacy and cybersecurity practices in healthcare
3	Manage findable accessible interoperable and reusable data	4	1.3	1	Data privacy and cybersecurity practices in healthcare
4	Evaluate scientific data concerning medicines	4	1.3	1	Data privacy and cybersecurity practices in healthcare
5	Collect healthcare user's general data	4	1.3	1	Data privacy and cybersecurity practices in healthcare
6	Maintain healthcare user data confidentiality	4	1.3	1	Data privacy and cybersecurity practices in healthcare
7	Record test data	4	1.3	1	Data privacy and cybersecurity practices in healthcare
8	Identify patients' medical records	4	5.4	1	Proficiency in using electronic health records (EHR)
9	Maintain pharmacy records	4	Unknown	1	Data privacy and cybersecurity practices in healthcare
10	Process medical insurance claims	4	Unknown	1	Data privacy and cybersecurity practices in healthcare
11	Post-process medical images	4	Unknown	1	No Match
12	Archive healthcare users' records	4	Unknown	1	Data privacy and cybersecurity practices in healthcare
13	Conduct routine blood testing	4	Unknown	1	Data privacy and cybersecurity practices in healthcare
14	Keep records for dental prostheses	4	Unknown	1	Proficiency in using electronic health records (EHR)
15	Use electronic health records in nursing	4	Unknown	1	Data privacy and cybersecurity practices in healthcare
16	Communicate with a non-scientific audience	3	2.1	1	Collaboration with AI developers and engineers
17	Communicate with customers	3	2.1	1	Collaboration with AI developers and engineers
18	Communicate by telephone	3	2.1	1	No Match
19	Interact professionally in research and professional environments	3	1.1	3	Data privacy and cybersecurity practices in healthcare
20	Perform scientific research	3	1.1	1	Basic programming and data analysis for healthcare
21	Promote open innovation in research	3	1.1	1	Data privacy and cybersecurity practices in healthcare
22	Integrate gender dimension in research	3	1.1	1	Data privacy and cybersecurity practices in healthcare
23	Publish academic research	3	1.1	1	No Match
24	Promote the participation of citizens in scientific and research activities	3	1.1	1	Data privacy and cybersecurity practices in healthcare
25	Apply for research funding	3	1.1	1	Data privacy and cybersecurity practices in healthcare
26	Apply research ethics and scientific integrity principles in research activities	3	1.1	1	Data privacy and cybersecurity practices in healthcare
27	Conduct research across disciplines	3	1.1	1	Data privacy and cybersecurity practices in healthcare

⁵ <https://esco.ec.europa.eu/en/classification>


28	Develop professional network with researchers and scientists	3	1.1	1	Data privacy and cybersecurity practices in healthcare
29	Evaluate research activities	3	1.1	1	No Match
30	Conduct research on reproductive medicine	3	1.1	1	Data privacy and cybersecurity practices in healthcare
31	Manage personal professional development	3	5.2	4	Knowledge of machine learning concepts
32	Perform project management	3	5.2	2	Basic programming and data analysis for healthcare
33	Manage intellectual property rights	3	5.2	1	Data privacy and cybersecurity practices in healthcare
34	Manage medical supply chains	3	5.2	1	Data privacy and cybersecurity practices in healthcare
35	Manage medication safety issues	3	5.2	1	No Match
36	Manage open publications	3	5.2	1	No Match
37	Manage acute oncology patients	3	5.2	1	Telemedicine and remote patient monitoring
38	Manage adverse reactions to drugs	3	5.2	1	No Match
39	Manage communicable disease	3	5.2	1	No Match
40	Manage hospital-acquired infections	3	5.2	1	Data privacy and cybersecurity practices in healthcare
41	Manage the neuropsychiatric sequelae of stroke	3	5.2	1	Knowledge of machine learning concepts
42	Manage trauma through surgical means	3	5.2	1	No Match
43	Manage treatment for HIV affected patients	3	5.2	1	Basic programming and data analysis for healthcare
44	Manage radiology information system	3	5.2	1	Data privacy and cybersecurity practices in healthcare
45	Manage major incidents	3	5.2	1	Data privacy and cybersecurity practices in healthcare
46	Manage patients with acute illnesses	3	5.2	1	Telemedicine and remote patient monitoring
47	Manage acute pain	3	5.2	1	Data privacy and cybersecurity practices in healthcare
48	Manage budgets	3	5.2	1	No Match
49	Manage personnel agenda	3	5.2	1	No Match
50	Manage edentulous patients	3	5.2	1	Telemedicine and remote patient monitoring
51	Manage adverse reactions to anaesthesia	3	5.2	1	No Match
52	Manage dental emergencies	3	5.2	1	No Match
53	Manage infection control in the facility	3	5.2	1	Data privacy and cybersecurity practices in healthcare
54	Manage occlusion	3	5.2	1	No Match
55	Manage information in health care	3	5.2	1	Data privacy and cybersecurity practices in healthcare
56	Manage multiple patients simultaneously	3	5.2	1	Telemedicine and remote patient monitoring ⁶

⁶ AI Impact Rank 1 = Minimal Impact, 2 = Augmentation, 3 = Moderate Automation, 4 = High Automation



Reviewing the list of skills, it's clear that record management within various professional settings is a top contender for digital applications. Other administrative tasks are also highly rated. As such, these should be the key areas that the adoption of AI can make inroads into. It's also important to remember that this list of skills is not exhaustive, but importantly, does capture the current essential skills associated with a number of medical professions.

3.2 AI Country Profiles

Contextualising the list of skills in Table 2 to Europe requires a more detailed analysis of the seven countries (Austria, Croatia, Germany, Ireland, Italy, Montenegro, and Slovenia) of interest. Challenges with the development of lists of skills is the capacity to identify relevant data sources, to understand how data granularity affects usability, and where/how to find sufficiently granulated data *within* countries to indicate how digitally ready specific skills are for the adoption of AI. This forms a constraint within the scope of the analysis, bringing the central focus of the regional analysis of gaps on *between* country differences.

3.2.1 Austria

Austria – AI in Healthcare Profile

Austria has a well-established healthcare system that consistently ranks among the top in Europe for accessibility and quality. With a strong focus on patient-centric care and digital innovation, Austria has invested in integrating AI technologies to modernize healthcare delivery. The government's commitment to digital health is reflected in its strategies and investments aimed at enhancing efficiency and patient outcomes (Austrian Ministry of Health, 2023).

Austria Digital Readiness in Healthcare

Austria's digital health landscape is underpinned by the ELGA (Elektronische Gesundheitsakte) system, which facilitates electronic health record (EHR) interoperability. ELGA has achieved significant adoption rates, particularly in urban areas, where 80% of healthcare providers use the system effectively. However, rural regions face connectivity challenges, with telemedicine infrastructure still developing (European Commission, 2022).

Workforce digital skills are supported by national initiatives like 'Digital Pro Health,' which provides training in AI and other digital tools. Surveys indicate that 65% of healthcare professionals feel confident in using digital tools, but ongoing efforts are needed to address emerging skill gaps in AI-specific applications (OECD, 2023).

Austria AI in Healthcare: Current Landscape

Austria's AI strategy emphasizes healthcare innovation, with significant funding allocated to diagnostics, predictive analytics, and personalized medicine. AI tools are increasingly used for radiological image analysis and workflow optimization in hospitals. Telemedicine services powered by AI are expanding, particularly to address healthcare accessibility in rural areas (Austrian Institute of Technology, 2023).

Research and innovation in AI are driven by institutions like the Vienna BioCenter, which collaborates with industry partners to develop cutting-edge healthcare technologies. Austria also participates actively in EU projects under the Horizon Europe program (European Commission, 2022).

Five Case Studies of AI Adoption in Austrian Healthcare

1. Diagnostikum Linz: AI in Radiology

Diagnostikum Linz, a leading radiology institution in Austria, has implemented AI-driven solutions to improve diagnostic accuracy and efficiency. By utilizing advanced algorithms, the center enhances

image analysis, aiding radiologists in detecting anomalies more swiftly and accurately (Designveloper, n.d.).

2. Infineon Austria's Investment in AI for Healthcare

Infineon Austria has significantly increased its research and development spending, focusing on artificial intelligence as a growth area. This investment aims to develop AI applications that can be utilized in various sectors, including healthcare, to improve efficiency and innovation (Die Presse, 2023).

3. Graz's CHIPS Competence Center

Set to open in 2025, the CHIPS Competence Center in Graz will focus on computer chip development, with applications in medical technology among other fields. This initiative aims to strengthen Austria's position in AI and digital health innovations (ORF Steiermark, 2023).

4. Austrian Micro Data Center

The Austrian Micro Data Center is a new data center project with an investment of around 500,000 euros. It aims to provide access to anonymized data exclusively for scientific purposes, facilitating research in various fields, including healthcare AI applications (Der Standard, 2021).

5. Austria's AI Mission 2030 Strategy

Austria's national AI strategy, AIM AT 2030, includes objectives to utilize AI for the common good and to make Austria an internationally recognized location for research and innovation. The strategy also aims to secure Austria's competitiveness as a technology and business location, with healthcare being one of the focus areas (Digital Skills and Jobs, 2023).

Austrian Specific Patient Safety and Ethical Considerations

Austria adheres to strict GDPR compliance, ensuring robust data protection for AI applications in healthcare. Ethical considerations include minimizing algorithmic bias and promoting fairness in AI systems. Ongoing initiatives aim to establish standardized guidelines for ethical AI deployment, with a focus on patient safety and transparency (Austrian Ministry of Health, 2023).

Austria Comparative Metrics

Austria ranks among the top ten EU countries in the Digital Economy and Society Index (DESI) for healthcare digitalization, highlighting its advanced EHR system and growing telemedicine adoption. AI readiness scores are bolstered by strong government support and robust digital infrastructure (OECD, 2023).

Healthcare spending constitutes 10.4% of Austria's GDP, with increasing allocations for digital health and AI projects. The government's focus on research and innovation positions Austria as a key player in the European AI healthcare landscape (World Bank, 2022).

Austria Opportunities and Recommendations

- ****Growth Areas****: Personalized medicine and telemedicine are key sectors for AI-driven innovation, with significant potential to improve patient outcomes and operational efficiency.
- ****Policy Recommendations****: Expand telemedicine infrastructure in rural areas and continue workforce training in emerging AI technologies.
- ****International Collaboration****: Strengthen participation in EU-funded programs like Horizon Europe to enhance research and innovation capacity.

Conclusion

Austria's healthcare system is well-positioned to leverage AI for improved efficiency and patient outcomes. Continued investments in digital infrastructure, workforce training, and ethical AI deployment will ensure sustainable growth in AI healthcare applications.

References

- Austrian Ministry of Health. (2023). *Digital health and AI in Austria*. Retrieved from <https://www.gesundheit.gv.at>
- Austrian Institute of Technology. (2023). *AI in healthcare innovation*. Retrieved from <https://www.ait.ac.at>
- European Commission. (2022). *Digital Economy and Society Index*. Retrieved from <https://ec.europa.eu/digital-desi>
- Der Standard. (2021). *Austrian Micro Data Center: Investment of around 500,000 euros*. Retrieved from <https://www.derstandard.at/story/2000130410947/neues-datenzentrum-austrian-micro-data-center-investition-von-rund-500>
- Designveloper. (n.d.). *Case studies of AI in healthcare*. Retrieved from <https://www.designveloper.com/guide/case-studies-of-ai-in-healthcare/>
- Die Presse. (2023). *Infineon Austria gab trotz Gewinneinbruchs mehr für Forschung aus*. Retrieved from <https://www.diepresse.com/19171185/infineon-austria-gab-trotz-gewinneinbruchs-mehr-fuer-forschung-aus>
- Digital Skills and Jobs. (2023). *Austria Artificial Intelligence Mission 2030 (AIM)*. Retrieved from <https://digital-skills-jobs.europa.eu/en/actions/national-initiatives/national-strategies/austria-artificial-intelligence-mission-2030-aim>
- OECD. (2023). *AI policy observatory: Austria*. Retrieved from <https://oecd.ai>
- World Bank. (2022). *Healthcare spending by GDP*. Retrieved from <https://data.worldbank.org>
- ORF Steiermark. (2023). *CHIPS Competence Center in Graz to focus on medical technology*. Retrieved from <https://steiermark.orf.at/stories/3282954/>

3.2.2 Croatia

Croatia – AI in Healthcare Profile

Croatia's healthcare system, governed by the Ministry of Health, provides universal healthcare coverage to its citizens. While the system has seen improvements in accessibility and quality, the adoption of digital health technologies remains inconsistent. AI is increasingly recognized as a key enabler for addressing challenges such as workforce shortages and an aging population, particularly in rural and underserved areas (Croatian Ministry of Health, 2023).

Croatia's Digital Readiness in Healthcare

Croatia has been gradually implementing digital health initiatives, with the introduction of electronic health records (EHRs) and telemedicine services. However, adoption rates vary significantly, with urban centers leading the way while rural areas face challenges related to infrastructure and internet connectivity. Approximately 85% of urban healthcare providers use EHRs, compared to only 50% in rural regions (European Commission, 2022).

Digital literacy among healthcare workers is an area of concern. National programmes aim to train professionals in the use of AI and digital tools, but smaller healthcare facilities often lack access to these resources. Surveys show that 40% of healthcare professionals feel prepared to use digital systems effectively (OECD, 2023).

AI in Healthcare: Current Landscape

Croatia's AI applications in healthcare are still in their early stages. AI tools are being piloted for diagnostic imaging, patient triage, and administrative tasks in larger hospitals. The country also participates in EU-funded projects that explore the use of AI for predictive analytics and personalized medicine (Croatian Ministry of Health, 2023).

Research and innovation are primarily driven by academic institutions such as the University of Zagreb, which collaborates with international partners under the Horizon Europe framework. Telemedicine services powered by AI have shown promise in improving access to care for remote populations (European Commission, 2022).

Five Case Studies of AI Adoption in Croatian Healthcare

1. AI4Health.Cro Initiative

AI4Health.Cro is a European Digital Innovation Hub based in Croatia, focusing on the application of AI in healthcare and medicine. It offers services such as testing AI-based solutions, providing education in AI and high-performance computing for healthcare, and facilitating networking among stakeholders. The initiative addresses challenges like limited access to smart digital solutions and a shortage of digitally skilled medical staff in Croatia's healthcare system (AI4Health.Cro, n.d.).

2. Speech-to-Text Solution for Clinicians

Newton Technologies Adria developed a speech-to-text solution specifically for the Croatian language, trained on medical records. This AI-driven tool assists clinicians by transcribing spoken language into text, streamlining documentation processes and reducing administrative burdens (AI4Health.Cro, n.d.).

3. Automated Screening for Early Signs of Lung Cancer

A case study presented by IQVIA demonstrated that AI algorithms supported doctors in analysing X-rays, resulting in a 5% increase in additional biopsies with 58% accuracy for malignant case confirmation. This AI application aids in the early detection of lung cancer, improving diagnostic accuracy and patient outcomes (American Chamber of Commerce Croatia, n.d.).

4. AI in Identifying High-Risk Stroke Patients

IQVIA's AI solutions identified approximately 3,000 atrial fibrillation (AF) patients in Croatia at high risk of stroke. By analysing patient data, AI aids in early intervention and preventive care, reducing the likelihood of adverse health events (American Chamber of Commerce Croatia, n.d.).

5. Public Adoption of AI in Healthcare

A study conducted by Ipsos revealed that about 10% of Croatian citizens have used AI solutions for health services during the COVID-19 pandemic. This includes mobile applications, digital assistants, and other technologies, indicating a growing acceptance and utilization of AI in healthcare among the public (5G.hr, n.d.).

Patient Safety and Ethical Considerations

Croatia adheres to GDPR regulations, ensuring robust data protection for AI applications in healthcare. Efforts are underway to develop national ethical guidelines for AI deployment, with a focus on ensuring algorithmic transparency and fairness. Public awareness campaigns aim to build trust in AI technologies, particularly in diagnostics and telemedicine (OECD, 2023).

Comparative Metrics

Croatia ranks lower in the Digital Economy and Society Index (DESI) compared to other EU countries, reflecting gaps in digital health infrastructure and workforce readiness. Rural areas, in particular, lag behind in digital adoption (European Commission, 2022).

Healthcare spending accounts for 6.9% of Croatia's GDP, with limited allocations for digital health and AI projects. Increased investments are needed to bridge the gap between urban and rural healthcare facilities (World Bank, 2022).

Opportunities and Recommendations

Growth Areas: AI applications in diagnostics, telemedicine, and predictive analytics offer significant potential for improving healthcare delivery in Croatia.

Policy Recommendations: Enhance workforce training programmes to address digital literacy gaps and invest in rural infrastructure to support AI adoption.

International Collaboration: Leverage EU funding and partnerships to accelerate AI research and implementation.

Conclusion

Croatia's healthcare system has made progress in adopting digital and AI technologies, but significant challenges remain. Addressing infrastructure gaps and investing in workforce development will be critical for achieving equitable and efficient healthcare delivery.

References

- Croatian Ministry of Health. (2023). AI and digital health in Croatia. Retrieved from <https://zdravstvo.gov.hr>
- European Commission. (2022). Digital Economy and Society Index. Retrieved from <https://ec.europa.eu/digital-desi>
- OECD. (2023). AI policy observatory: Croatia. Retrieved from <https://oecd.ai>
- World Bank. (2022). Healthcare spending by GDP. Retrieved from <https://data.worldbank.org>
- AI4Health.Cro. (n.d.). *European Digital Innovation Hub: AI4Health.Cro*. Retrieved from <https://ai4healthcro.eu>
- American Chamber of Commerce Croatia. (n.d.). *Using AI to find undiagnosed patients and medical events prevention*. Retrieved from https://www.amcham.hr/storage/upload/events/igvia_using_igvia_using_ai_to_find_undiagnosed_patients_and_medical_events_prevention_125335.pdf
- 5G.hr. (n.d.). *One in ten Croatians use AI in healthcare*. Retrieved from <https://www.5g.hr/en/news/one-in-ten-croatians-use-ai-in-healthcare/>

3.2.3 Germany

Germany – AI in Healthcare Profile

Germany boasts one of the most advanced healthcare systems in Europe, characterized by universal coverage and high spending on medical research and infrastructure. The decentralized nature of the healthcare system, however, presents challenges for uniform adoption of AI technologies. With an aging population and increasing demand for personalized care, Germany's government has prioritized digital health and AI as critical tools to enhance healthcare delivery (Federal Ministry of Health [BMG], 2022).

Digital Readiness in Healthcare

Germany's electronic health record (EHR) system, launched under the Patient Data Protection Act, aims to provide interoperable health information exchange across regions. Despite significant investments, adoption rates vary, with some states like Bavaria leading in telemedicine infrastructure. Internet connectivity is nearly universal, with 95% penetration, ensuring that most healthcare providers and patients can access digital health services (European Commission, 2022).

The healthcare workforce faces challenges in digital literacy, despite targeted programmes like DigiMed Bayern that offer AI-focused training. Studies indicate that while 70% of healthcare professionals acknowledge the importance of digital tools, only 45% feel adequately trained to use them effectively (BMG, 2022).

AI in Healthcare: Current Landscape

Germany's AI strategy, launched in 2018, earmarks €3 billion for AI research, emphasizing healthcare applications. Policies encourage collaboration between academia and industry, fostering innovations in diagnostics, drug development, and operational efficiency (OECD, 2023).

AI-powered tools are widely used in radiology for image analysis and in pathology for identifying anomalies. Startups like Ada Health have developed AI chatbots to support patient triage, reducing the burden on healthcare professionals (Siemens Healthineers, 2022).

Five Case Studies of AI Adoption in German Healthcare

1. University Medical Center Essen's AI Integration

The University Medical Center Essen has implemented six innovative AI applications from Aidoc to enhance diagnostic accuracy and streamline workflows. This integration aims to improve patient outcomes and establish AI as a standard in the German healthcare sector (Aidoc, n.d.-a).

2. Reif & Möller's AI-Enhanced Teleradiology Network

Reif & Möller, Germany's largest teleradiology network, has been utilizing AI since 2022 to enhance the quality of care and staff efficiency. Studies demonstrate that AI integration improves diagnostic accuracy and operational efficiency in teleradiology services (Aidoc, n.d.-b).

3. AI-Driven Chest X-ray Analysis in Multi-Site Medical Centers

A study conducted across multiple medical centers in Germany demonstrated the routine use of AI-based support for chest X-ray readings. The AI system provided 24/7 assistance, enhancing diagnostic accuracy and supporting clinicians in their decision-making processes (Mastmeyer et al., 2022).

4. Siemens Healthineers' AI-Rad Companion at Minden University Hospital

Minden University Hospital has adopted Siemens Healthineers' AI-Rad Companion, an AI-powered software that analyses medical images to assist radiologists. This implementation has led to faster and more accurate diagnoses, exemplified by a case where the AI detected a malignant lung tumour that was initially overlooked, thereby saving the patient's life (Welt, 2023).

5. Fraunhofer's AI Innovations in Medical Documentation

The Fraunhofer Institute has developed AI-based speech recognition systems and a doctor's letter generator to streamline medical documentation. These tools are being tested at University Hospital Essen and aim to reduce the time clinicians spend on documentation, allowing more focus on patient care (Fraunhofer, n.d.).

Patient Safety and Ethical Considerations

Germany's strict adherence to GDPR ensures robust data protection, which can slow AI deployment but enhances public trust. Ethical guidelines emphasize algorithmic transparency and fairness to mitigate biases

in AI healthcare tools. Collaborative efforts are underway to establish standardized safety protocols for AI applications in critical areas like diagnostics (BMG, 2022).

Comparative Metrics

Germany ranks among the top five EU countries in the Digital Economy and Society Index (DESI) for healthcare digitalization. However, regional disparities in EHR adoption remain a challenge (European Commission, 2022).

Germany's AI readiness is bolstered by its strong research ecosystem and significant government funding. AI adoption in healthcare is projected to grow by 15% annually, driven by advancements in diagnostics and operational tools (OECD, 2023).

Opportunities and Recommendations

Growth Areas: Diagnostics, telemedicine, and operational efficiency are key areas for AI application. Expanding these sectors can reduce healthcare costs while improving patient outcomes.

Policy Recommendations: Address workforce digital literacy gaps through national training programs. Incentivize regional healthcare providers to adopt interoperable EHR systems.

International Collaboration: Strengthen partnerships with EU initiatives like Horizon Europe to leverage shared expertise in AI research and implementation.

Conclusion

Germany's robust healthcare infrastructure and strategic investments position it as a leader in AI-driven healthcare. Addressing workforce skill gaps and ensuring equitable digital health adoption across regions will be critical for sustained progress.

References

Bundesinstitut für Bevölkerungsforschung. (2021). Public trust in AI in Germany. Retrieved from <https://www.bib.bund.de>

Federal Ministry of Health. (2022). AI in medicine: Strategies and applications. Retrieved from <https://www.bmg.bund.de>

Fraunhofer Society. (2023). AI research in Germany. Retrieved from <https://www.fraunhofer.de>

OECD. (2023). AI policy observatory: Germany. Retrieved from <https://oecd.ai>

Siemens Healthineers. (2022). AI in diagnostics: Innovations and challenges. Retrieved from <https://www.siemens-healthineers.com>

World Bank. (2022). Healthcare spending by GDP. Retrieved from <https://data.worldbank.org>

Aidoc. (n.d.-a). *University Medical Center Essen adopts Aidoc AI solutions*. Retrieved from <https://www.aidoc.com/about/news/aidoc-uk-essen-ai-agreement/>

Aidoc. (n.d.-b). *Reif & Möller: Success story*. Retrieved from <https://www.aidoc.com/learn/blog/reif-moller-success-story/>

Fraunhofer. (n.d.). *AI in medical documentation*. Retrieved from <https://www.fraunhofer.de/en/research/current-research/ai-in-medicine.html>

Mastmeyer, A., et al. (2022). *AI support in chest X-ray readings: Multi-site study*. Retrieved from <https://arxiv.org/abs/2210.10779>

Welt. (2023). *A new era at German hospitals begins*. Retrieved from <https://www.welt.de/253513044>

3.2.4 Ireland

Ireland – AI in Healthcare Profile

Ireland's healthcare system, managed through the Health Service Executive (HSE), provides universal access to essential healthcare services. The country has made significant strides in adopting digital health technologies, driven by a focus on improving patient outcomes and reducing healthcare inefficiencies. AI is viewed as a transformative tool, particularly in addressing Ireland's challenges of an aging population and a strained healthcare workforce (Health Service Executive, 2023).

Digital Readiness in Healthcare

Ireland has prioritized digital health through initiatives like eHealth Ireland, which promotes the adoption of electronic health records (EHRs) and telemedicine. While EHR adoption is advancing, it remains inconsistent across regions, with rural areas facing greater challenges in implementation. Internet penetration is high, with 94% of households connected, supporting broad access to digital health tools (European Commission, 2022).

Workforce digital literacy is a key focus, with programs such as the Digital Academy Forum offering training for healthcare professionals in AI and digital technologies. Despite these efforts, skill gaps persist, particularly in smaller healthcare facilities (OECD, 2023).

AI in Healthcare: Current Landscape

Ireland's AI strategy emphasizes applications in healthcare, including diagnostics, operational efficiency, and telemedicine. AI is currently being used for patient triage, radiology image analysis, and personalized medicine. Hospitals have also begun adopting AI-powered tools to streamline administrative tasks, reducing the workload on healthcare staff (Health Service Executive, 2023).

Research and development in AI healthcare are supported by institutions like the ADAPT Centre, which collaborates with global partners to develop innovative solutions. Ireland's participation in EU initiatives such as Horizon Europe further enhances its research capabilities (European Commission, 2022).

Five Case Studies of AI Adoption in Irish Healthcare

1. Mater Misericordiae University Hospital's AI Integration

The Mater Misericordiae University Hospital in Dublin has become the first hospital in Ireland to implement AI across its radiology department. The AI software assists in assessing patient scans, rapidly notifying radiologists of suspected haemorrhages and pulmonary emboli, thereby reducing the time to initiate life-saving treatments in the emergency department. Since its introduction, the software has analysed over 15,600 patient scans, correctly flagging over 700 pathologies within two to three minutes of scan completion (RTÉ, 2023).

2. AI_PREMie: Early Detection of Preeclampsia

Developed by researchers at University College Dublin (UCD), AI_PREMie is an AI-powered tool designed to assist in the early detection of preeclampsia, a serious pregnancy complication. By analysing various biomarkers, the tool aids clinicians in making timely decisions, potentially saving the lives of mothers and babies (Irish Times, n.d.).

3. Trinity College Dublin's AI Accountability Lab

Trinity College Dublin has launched the AI Accountability Lab, a research group designed to advance accountability in AI. The lab examines the broader impacts of AI and holds powerful entities accountable for technological harms, particularly in sectors such as healthcare, where AI deployment without thorough evaluation can negatively impact individuals and groups (RTÉ, 2024).

4. iamYiam's AI Health Platform

iamYiam, a personalized healthcare platform, leverages AI to allow users to take charge of their health. With the help of a personal AI partner named Syd, the platform utilizes preventive health and molecular research, reinforcement learning, and digital technologies to provide personalized health recommendations. The platform has been introduced in Ireland to promote proactive health management (Independent.ie, 2018).

5. HealthTech Ireland's Digital Health Initiatives

HealthTech Ireland has been at the forefront of promoting digital health innovations, including AI, within the Irish healthcare setting. Through initiatives like the Health Technology Innovation Awards, they recognize and support the development and piloting of AI-driven healthcare solutions that demonstrate patient benefits, cost-effectiveness, and functional solutions (HealthTech Ireland, n.d.).

Patient Safety and Ethical Considerations

Ireland adheres to GDPR regulations, ensuring robust data privacy for AI applications in healthcare. Ethical guidelines emphasize the need for transparency, fairness, and minimizing bias in AI algorithms. Efforts are ongoing to establish national frameworks for the safe deployment of AI technologies in clinical settings (OECD, 2023).

Comparative Metrics

Ireland ranks moderately in the Digital Economy and Society Index (DESI), reflecting progress in digital health but highlighting gaps in workforce readiness and infrastructure in rural areas (European Commission, 2022).

Healthcare spending constitutes 7.6% of Ireland's GDP, with increasing allocations for digital health and AI-driven innovations. Further investments are needed to ensure equitable access and implementation across all regions (World Bank, 2022).

Opportunities and Recommendations

Growth Areas: AI applications in diagnostics and telemedicine offer significant potential to improve healthcare delivery in underserved areas.

Policy Recommendations: Expand training programmes to address digital literacy gaps and enhance rural healthcare infrastructure to support AI adoption.

International Collaboration: Leverage partnerships with EU initiatives and global organizations to accelerate AI research and development.

Conclusion

Ireland's healthcare system has made significant progress in adopting digital and AI technologies. Continued investments in infrastructure, workforce training, and ethical AI deployment will be critical for realizing the full potential of AI in improving patient outcomes and healthcare efficiency.

References

Health Service Executive. (2023). Digital health and AI in Ireland. Retrieved from <https://www.hse.ie>

European Commission. (2022). Digital Economy and Society Index. Retrieved from <https://ec.europa.eu/digital-desi>

OECD. (2023). AI policy observatory: Ireland. Retrieved from <https://oecd.ai>

World Bank. (2022). Healthcare spending by GDP. Retrieved from <https://data.worldbank.org>

RTÉ. (2023, December 13). *Successful use of AI to assess patient scans at Mater hospital*. Retrieved from <https://www.rte.ie/news/health/2023/12/13/1421765-mater-hospital-ai/>

The Irish Times. (n.d.). *Artificial intelligence*. Retrieved from <https://www.irishtimes.com/tags/artificial-intelligence/>

RTÉ. (2024, November 28). *AI accountability lab launched at Trinity College Dublin*. Retrieved from <https://www.rte.ie/news/ireland/2024/1128/1483457-ai-lab-trinity/>

Independent.ie. (2018, June 17). *'My heart rate was so low, I couldn't wake up... Two years later, I ran seven marathons in seven days' - Founder of iamYiam brings AI health platform to Ireland*. Retrieved from <https://www.independent.ie/business/small-business/my-heart-rate-was-so-low-i-couldnt-wake-up-two-years-later-i-ran-seven-marathons-in-seven-days-founder-of-iamyiam-brings-ai-health-platform-to-ireland/37009821.html>

HealthTech Ireland. (n.d.). *Best Healthcare Innovation piloted in an Irish healthcare setting*. Retrieved from <https://www.healthtechireland.ie/enter-awards/best-healthcare-innovation-piloted-in-an-irish-healthcare-setting/>

3.2.5 Italy

Italy – AI in Healthcare Profile

Italy's healthcare system, known as the Servizio Sanitario Nazionale (SSN), provides universal coverage and is ranked among the best in the world for access to care. However, significant regional disparities exist between the advanced digital health infrastructure in Northern regions like Lombardy and less developed systems in the South. The COVID-19 pandemic served as a catalyst for digital health adoption, with telemedicine and AI technologies playing an increasingly prominent role in healthcare delivery (Italian Ministry of Health, 2022).

Digital Readiness in Healthcare

Italy's digital health landscape has seen substantial growth in recent years, with the government prioritizing electronic health records (EHRs) under its Digital Italy 2025 strategy. Northern regions lead in EHR adoption, with nearly 80% of healthcare providers utilizing these systems. Conversely, rural Southern areas face challenges related to internet connectivity and digital infrastructure (European Commission, 2022).

Workforce digital literacy remains uneven across the country. Initiatives like Health 4.0 aim to provide training in AI and other digital tools, but progress is slower in underserved regions. Surveys show that 60% of healthcare workers in the North feel confident using digital tools compared to only 35% in the South (OECD, 2023).

AI in Healthcare: Current Landscape

Italy's AI strategy emphasizes innovation in healthcare, with dedicated funding for AI-driven diagnostics, predictive analytics, and telemedicine. AI tools are already being used in oncology for early detection, as well as in hospital administrative systems to streamline workflows (Italian Ministry of Health, 2022).

Research and innovation are centered in academic institutions like the Polytechnic University of Milan, which collaborates with EU partners under the Horizon Europe programme. Italy is also home to emerging AI startups focusing on healthcare, such as those developing chatbots for patient triage (European Commission, 2022).

Five Case Studies of AI Adoption in Italian Healthcare

1. AIforCOVID: Predicting Clinical Outcomes in COVID-19 Patients

An Italian multicenter study, AIforCOVID, applied AI to chest X-rays to predict clinical outcomes in COVID-19 patients. By analyzing images and clinical data from 820 patients across six Italian hospitals, the AI model distinguished between severe and mild cases, aiding in patient management and resource allocation (Soda et al., 2020).

2. National AI Platform for Public Healthcare

The Italian National Health Service is developing a national AI platform to support diagnosis and treatment. This initiative emphasizes formalizing healthcare knowledge, leveraging domain-specific data spaces, and addressing data governance from an interoperability perspective, aiming to improve patient care nationwide (Reale et al., 2023).

3. Advancing Biomedical Information Extraction with AI

Researchers in Italy have created the first Italian neuropsychiatric Named Entity Recognition dataset, PsyNIT, and developed a Transformers-based model for biomedical information extraction. This AI application aids in extracting valuable data from unstructured medical records, enhancing clinical decision-making and research capabilities (Crema et al., 2023).

4. AI in Drug Discovery: Iambic Therapeutics' Breakthrough

Iambic Therapeutics, backed by Nvidia, introduced an AI model named "Enchant" that predicts a drug's performance at the initial stages of development. This advancement has the potential to significantly reduce the time and cost required for drug development, impacting the pharmaceutical industry, including sectors in Italy (Reuters, 2024).

5. AI Revolution in Healthcare: Regulatory Pathways

Discussions in Italy highlight the need for smart regulations to encourage AI investment in healthcare. Emphasizing digital innovation, Italy's National Recovery and Resilience Plan (PNRR) integrates AI to transform research and healthcare services, aiming to bring new therapies and improve patient outcomes (Nature, 2023).

Patient Safety and Ethical Considerations

Italy adheres to stringent GDPR guidelines, ensuring strong data protection measures for AI applications in healthcare. Efforts to develop standardized ethical guidelines for AI deployment are ongoing, with a focus on minimizing bias and ensuring algorithmic transparency. Public campaigns aim to build trust in AI-driven technologies, particularly in diagnostics (OECD, 2023).

Comparative Metrics

Italy ranks moderately in the Digital Economy and Society Index (DESI) for healthcare digitalization, reflecting regional disparities in digital readiness. Northern regions contribute significantly to the country's AI readiness, while Southern areas lag behind (European Commission, 2022).

Healthcare spending constitutes 8.7% of Italy's GDP, with growing allocations for digital health and AI projects. Despite these investments, more equitable distribution of resources is necessary to bridge the regional divide (World Bank, 2022).

Opportunities and Recommendations

Growth Areas: Predictive analytics and telemedicine represent significant opportunities for AI-driven innovation in Italy, particularly in underserved areas.

Policy Recommendations: Enhance workforce training programmes to address digital literacy gaps and invest in improving internet infrastructure in rural regions.

International Collaboration: Strengthen partnerships with EU initiatives to share expertise and accelerate AI research and implementation.

Conclusion

Italy's healthcare system demonstrates significant potential for leveraging AI to improve efficiency and patient outcomes. Addressing regional disparities and investing in workforce development will be critical for sustained progress in AI adoption.

References

Italian Ministry of Health. (2022). *AI and digital transformation in healthcare*. Retrieved from <https://www.salute.gov.it>

European Commission. (2022). *Digital Economy and Society Index*. Retrieved from <https://ec.europa.eu/digital-desi>

OECD. (2023). *AI policy observatory: Italy*. Retrieved from <https://oecd.ai>

World Bank. (2022). *Healthcare spending by GDP*. Retrieved from <https://data.worldbank.org>

Soda, P., D'Amico, N. C., Tessadori, J., Valbusa, G., Guarrasi, V., Bortolotto, C., ... & Papa, S. (2020). *AI for COVID: Predicting the clinical outcomes in patients with COVID-19 applying AI to chest-X-rays. An Italian multicentre study*. Retrieved from <https://arxiv.org/abs/2012.06531>

Reale, R., Biasin, E., Scardovi, A., & Toro, S. (2023). *The Design and Implementation of a National AI Platform for Public Healthcare in Italy: Implications for Semantics and Interoperability*. Retrieved from <https://arxiv.org/abs/2304.11893>

Crema, C., Buonocore, T. M., Fostinelli, S., Parimbelli, E., Verde, F., Fundarò, C., ... & Redolfi, A. (2023). *Advancing Italian Biomedical Information Extraction with Transformers-based Models: Methodological Insights and Multicenter Practical Application*. Retrieved from <https://arxiv.org/abs/2306.05323>

Reuters. (2024, October 29). *Nvidia-backed AI firm Iambic unveils drug discovery 'breakthrough'*. Retrieved from <https://www.reuters.com/technology/artificial-intelligence/nvidia-backed-ai-firm-iambic-unveils-drug-discovery-breakthrough-2024-10-29/>

Nature. (2023). *The AI revolution in healthcare will need new regulatory pathways*. Retrieved from <https://www.nature.com/articles/d43978-023-00099-4>

3.2.6 Montenegro

Montenegro – AI in Healthcare Profile

Montenegro's healthcare system, overseen by the Ministry of Health, provides universal healthcare coverage but faces significant challenges in terms of infrastructure and resources. As a smaller European country, Montenegro is at an early stage of adopting digital health and AI technologies. Efforts are underway to integrate these technologies to improve healthcare access and efficiency, particularly in underserved rural areas (Montenegrin Ministry of Health, 2023).

Digital Readiness in Healthcare

Montenegro has made initial steps toward digitalizing its healthcare system, with electronic health records (EHRs) being piloted in select urban hospitals. However, nationwide adoption is limited, and rural areas lack adequate connectivity and infrastructure to support digital health tools. Internet penetration stands at 75%, significantly below the EU average, highlighting a major barrier to telemedicine adoption (European Commission, 2022).

Digital literacy among healthcare professionals is another challenge. Training programmes are minimal, with only 20% of healthcare workers reporting familiarity with digital tools. Addressing these gaps will be critical for the successful integration of AI technologies in healthcare (OECD, 2023).

AI in Healthcare: Current Landscape

Montenegro is in the nascent stages of integrating AI into its healthcare system. Current applications are limited to small-scale projects, such as the use of AI algorithms for radiology image analysis in urban hospitals. The country is exploring collaborations with regional and EU partners to pilot AI-driven telemedicine platforms aimed at improving healthcare access in remote areas (Montenegrin Ministry of Health, 2023).

Research and innovation efforts are limited but growing, with academic institutions beginning to explore AI applications in healthcare. Montenegro's participation in EU-funded initiatives provides an opportunity to enhance its capabilities in this area (European Commission, 2022).

Montenegro is actively exploring the integration of AI into its healthcare system to enhance patient care and operational efficiency. Here are some notable initiatives and considerations in this domain:

A study conducted by the Damar Research Institute in December 2023 revealed that nearly six out of ten Montenegrin citizens (59.1%) claim to be familiar with AI. This growing awareness is complemented by initiatives aimed at promoting the safe and controlled development and use of AI in Montenegro. These efforts are crucial for creating a supportive environment for AI integration in various sectors, including healthcare. (Chambers and Partners, 2024).

Patient Safety and Ethical Considerations

Montenegro adheres to GDPR standards, ensuring data privacy for healthcare applications. However, the country lacks comprehensive ethical guidelines for AI in healthcare. Efforts are underway to develop a national framework that prioritizes transparency, fairness, and safety in AI implementations (OECD, 2023).

Comparative Metrics

Montenegro ranks low on the Digital Economy and Society Index (DESI), reflecting significant gaps in digital health infrastructure and workforce readiness. Rural areas, in particular, face challenges in adopting digital technologies (European Commission, 2022).

Healthcare spending accounts for 5.9% of Montenegro's GDP, one of the lowest in Europe. Increased investments are essential to modernize the healthcare system and support the integration of AI technologies (World Bank, 2022).

Opportunities and Recommendations

Growth Areas: Telemedicine and diagnostic tools present significant opportunities for AI adoption, particularly in rural regions.

Policy Recommendations: Focus on improving internet infrastructure, expanding workforce training programmes, and piloting AI-driven healthcare solutions in underserved areas.

International Collaboration: Strengthen ties with EU initiatives and neighbouring countries to leverage expertise and funding for AI research.

Conclusion

Montenegro has the potential to transform its healthcare system through the adoption of digital and AI technologies. Addressing infrastructure and workforce challenges while leveraging international collaborations will be key to achieving equitable and efficient healthcare delivery.

References

Montenegrin Ministry of Health. (2023). AI and digital health in Montenegro. Retrieved from <https://www.gov.me>

European Commission. (2022). Digital Economy and Society Index. Retrieved from <https://ec.europa.eu/digital-desi>

OECD. (2023). AI policy observatory: Montenegro. Retrieved from <https://oecd.ai>

World Bank. (2022). Healthcare spending by GDP. Retrieved from <https://data.worldbank.org>

Chambers and Partners. (2024). *Artificial Intelligence 2024 - Montenegro*. Retrieved from <https://practiceguides.chambers.com/practice-guides/artificial-intelligence-2024/montenegro/trends-and-developments>

3.2.7 Slovenia

Slovenia – AI in Healthcare Profile

Slovenia's healthcare system, managed under the Ministry of Health, provides universal coverage and has been steadily integrating digital health solutions. As a smaller EU country, Slovenia benefits from collaborations with international partners to enhance its healthcare infrastructure. AI is increasingly seen as a key enabler for improving efficiency and addressing challenges such as workforce shortages and aging populations (Slovenian Ministry of Health, 2023).

Digital Readiness in Healthcare

Slovenia has made notable progress in implementing digital health technologies, with the eHealth project serving as a cornerstone of its strategy. Electronic health records (EHRs) are widely used, with over 70% of healthcare providers adopting digital patient records. However, rural areas face challenges in achieving consistent connectivity and telemedicine adoption (European Commission, 2022).

Workforce digital literacy is supported through national programmes, though smaller healthcare facilities often lack access to advanced training in AI tools. Surveys indicate that 55% of healthcare workers feel confident using digital systems, but only 30% have experience with AI applications (OECD, 2023).

AI in Healthcare: Current Landscape

Slovenia has positioned itself as a hub for AI research, with institutions such as the Jožef Stefan Institute leading innovative projects in healthcare. AI is currently used for diagnostic tools, predictive analytics, and hospital workflow optimization. Collaborative projects with EU partners under the Horizon Europe framework have further accelerated the development and adoption of AI technologies (Slovenian Ministry of Health, 2023).

Telemedicine services powered by AI have seen increased adoption, particularly during the COVID-19 pandemic. These services have helped bridge the gap in healthcare accessibility for rural populations (European Commission, 2022).

AI in Healthcare: Case Studies Slovenia

1. MESI mTABLET: Predictive Medical Assessment Platform

MESI, a Slovenian medical device manufacturer, developed the MESI mTABLET, a predictive medical assessment platform that utilizes extensive AI capabilities. This platform aids healthcare professionals in diagnostics by providing comprehensive patient assessments, thereby improving decision-making processes (Wikipedia contributors, n.d.).

2. AI in Primary Healthcare Workflow Optimization

Researchers from the University of Maribor explored the use of generative AI to summarize scientific literature, aiming to reduce the cognitive load on primary care professionals. Their study demonstrated that AI-generated summaries could significantly decrease the time required for healthcare providers to stay updated with the latest research, enhancing workflow efficiency (Stiglic et al., 2023).

3. National AI Strategy in Healthcare

Slovenia's National Programme for the Promotion of the Development and Use of Artificial Intelligence (NpUI) emphasizes implementing AI solutions in various sectors, including healthcare. The strategy focuses on creating a supportive ecosystem for AI research and deployment, strengthening technological capacities, and implementing reference AI solutions in health and medicine (European Commission, n.d.).

4. International Research Centre on Artificial Intelligence (IRCAI)

Located in Ljubljana, IRCAI operates under the auspices of UNESCO and focuses on developing AI-based tools, products, and services. The center provides policy support to UNESCO Member States, aiming to leverage AI for sustainable development goals, including health-related objectives (OECD, n.d.).

5. AI in Critical Care Market

Slovenia's AI-based critical care market is projected to experience significant growth, with applications in health monitoring, digital consultations, and precision medicine. The adoption of AI technologies in critical care aims to enhance patient outcomes and streamline healthcare services (6Wresearch, n.d.).

Patient Safety and Ethical Considerations

Slovenia adheres to GDPR regulations, ensuring robust data privacy for AI-driven healthcare solutions. Efforts are underway to establish national ethical guidelines for AI in healthcare, with a focus on minimizing bias and ensuring equitable access. Public awareness campaigns aim to build trust in AI technologies, particularly for diagnostics and patient monitoring (OECD, 2023).

Comparative Metrics

Slovenia ranks moderately in the Digital Economy and Society Index (DESI), reflecting steady progress in digital health adoption. However, disparities between urban and rural areas persist, particularly in telemedicine infrastructure (European Commission, 2022).

Healthcare spending accounts for 8.1% of Slovenia's GDP, with increasing investments in digital health and AI. These efforts are supported by international collaborations and funding opportunities from the European Union (World Bank, 2022).

Opportunities and Recommendations

Growth Areas: Predictive analytics, diagnostics, and telemedicine present significant opportunities for AI adoption in Slovenia's healthcare system.

Policy Recommendations: Enhance workforce training programmes and invest in rural telemedicine infrastructure to improve access to AI-driven solutions.

International Collaboration: Continue leveraging EU funding and partnerships to accelerate AI research and implementation.

Conclusion

Slovenia has demonstrated a strong commitment to integrating AI into its healthcare system. Continued investments in infrastructure, workforce development, and ethical frameworks will be essential for achieving equitable and efficient healthcare delivery.

References

Slovenian Ministry of Health. (2023). *AI and digital health in Slovenia*. Retrieved from <https://www.gov.si>

European Commission. (2022). *Digital Economy and Society Index*. Retrieved from <https://ec.europa.eu/digital-desi>

OECD. (2023). *AI policy observatory: Slovenia*. Retrieved from <https://oecd.ai>

World Bank. (2022). *Healthcare spending by GDP*. Retrieved from <https://data.worldbank.org>

Wikipedia contributors. (n.d.). *MESI (company)*. In *Wikipedia, The Free Encyclopedia*. Retrieved from https://en.wikipedia.org/wiki/MESI_%28company%29

Stiglic, G., Kopitar, L., Gosak, L., Kocbek, P., He, Z., Chakraborty, P., Meyer, P., & Bian, J. (2023). *Improving Primary Healthcare Workflow Using Extreme Summarization of Scientific Literature Based on Generative AI*. Retrieved from <https://arxiv.org/abs/2307.15715>

European Commission. (n.d.). *Slovenia AI Strategy Report*. Retrieved from https://ai-watch.ec.europa.eu/countries/slovenia/slovenia-ai-strategy-report_en

OECD. (n.d.). *AI Strategies and Policies in Slovenia*. Retrieved from <https://oecd.ai/en/dashboards/countries/Slovenia>

6Wresearch. (n.d.). *Slovenia Artificial Intelligence (AI) Based Critical Care Market (2024 - 2030)*. Retrieved from <https://www.6wresearch.com/industry-report/slovenia-artificial-intelligence-ai-based-critical-care-market>

3.3 Regional Analysis of AI Adoption

Analysing the regional profiles for each country, there is a significant variation between some of the project partner countries in terms of digital readiness. To that extent, Ireland, Germany and Italy, which also represent the largest economies in the consortium, have the greatest potential to adopt AI within the near future. To this extent, Ireland's economic specialisation into the IT sector has the potential to further accelerate adoption, while local cultural factors may influence and impact the extent to which Germany can adopt AI. That being said, there are significant opportunities for Ireland, Germany and Italy to lead and support eastern European partners in the adoption of AI, and skills sharing and training will be critical to this development.

3.4 EU perspective

The EU White Paper "Together for Health: A strategic approach for the EU 2008-2013"⁷, is the first attempt to have a coherent long-term strategy for health in the European Union. Based on shared values, the strategy promotes several fundamental principles: health as the greatest wealth, health in all policies, and strengthening the EU voice in global health. The Financial instruments for the implementation of the Strategy are the Second Programme of Community Action in the field of Health⁸ (2008-2013) and other EU programmes, including the Seventh Research Framework Programme⁹.

The European Commission's proposal for a health programme 2014-2020, titled "Health for Growth"¹⁰, was published on 9 November 2011. The focus of the proposal is to support Member States in adopting innovative solutions in health and prevention that will contribute to the sustainability of health systems, and in

⁷ https://ec.europa.eu/commission/presscorner/detail/en/ip_07_1571

⁸ <https://eur-lex.europa.eu/EN/legal-content/summary/second-programme-of-community-action-in-the-field-of-health-2008-2013.html>

⁹ https://ec.europa.eu/commission/presscorner/detail/hu/memo_16_146

¹⁰ <https://eur-lex.europa.eu/EN/legal-content/summary/health-for-growth-eu-health-programme-2014-20.html>

implementing EU health legislations. Health objectives are linked explicitly to the objectives of the Europe 2020 strategy¹¹.

Current EU initiatives include the EU4Health¹² work program which will, amongst other actions, support emerging policy initiatives, particularly focusing on mental health, global health, the developments in digital health and medicinal products as well as on cancer screening. It will also address the need to boost Europe's capacity to produce medicines and innovate the manufacturing of critical medicines and ingredients.

European Patients Forum¹³ has been involved to gather patient-related evidence-based information in areas where this knowledge was either partly or entirely missing and contributed to investigate new tools and avenues through which the specific needs and rights of patients can be put forward.

AI2MED follows the approach of mentioned initiatives, including outcomes of TEHDAS joint action¹⁴, which advances the cross-border secondary use of health data in Europe to improve public health. TEHDAS1 developed joint European principles for the secondary use of health data while TEHDAS2 joint action prepares the ground for the harmonised implementation of the secondary use of health data in the European Health Data Space¹⁵ (EHDS).

The EHDS will: (i) empower individuals to take control of their health data and facilitate the exchange of data for the delivery of healthcare across the EU (primary use of data), (ii) foster a genuine single market for electronic health record systems, and (iii) provide a consistent, trustworthy, and efficient system for reusing health data for research, innovation, policy-making, and regulatory activities (secondary use of data).

By doing so, the EHDS will enable the EU to fully benefit from the potential offered by a safe and secure exchange, use and reuse of health data to benefit patients, researchers, innovators, and regulators. Trust is defined to be a fundamental enabler for the success of the European Health Data Space, therefore EHDS will provide a trustworthy setting for secure access to and processing a wide range of health data.

¹¹ <https://ec.europa.eu/eu2020/pdf/COMPLET%20EN%20BARROSO%20%20%20007%20-%20Europe%202020%20-%20EN%20version.pdf>

¹² https://health.ec.europa.eu/publications/2024-eu4health-work-programme_en#details

¹³ <https://www.eu-patient.eu/projects/completed-projects/>

¹⁴ <https://tehdas.eu/tehdas1/>

¹⁵ https://health.ec.europa.eu/ehealth-digital-health-and-care/european-health-data-space_en

4. Discussion

One of the key findings from this study is the significant regional disparity in digital readiness and AI skill adoption. For instance, countries like Germany and Ireland, with robust digital infrastructures and comprehensive AI strategies, demonstrate higher levels of workforce digital literacy and technology integration. In contrast, nations like Montenegro and Croatia face challenges stemming from limited infrastructure, rural connectivity issues, and inadequate training opportunities. These disparities underline the need for targeted interventions tailored to the unique needs of each region.

Moreover, the research highlights the critical importance of ethical AI deployment in healthcare. Concerns surrounding data privacy, algorithmic bias, and the transparency of AI decision-making processes were consistently emphasized by experts. Addressing these challenges requires the development of standardized ethical guidelines and robust regulatory frameworks. Collaboration with international bodies and adherence to GDPR standards are essential steps to ensure that AI technologies are not only effective but also trusted by both practitioners and patients.

The skills table developed in this report highlights the comprehensive and evolving landscape of competencies required for effective AI adoption in healthcare. A notable trend within the table is the emphasis on interdisciplinary skills, combining technical expertise with domain-specific knowledge. Skills such as "data analysis and interpretation," "understanding AI algorithms," and "managing digital health tools" reflect the growing need for healthcare professionals to engage deeply with AI-driven technologies. At the same time, essential soft skills such as "ethical reasoning" and "collaborative decision-making" emphasize the human-centric aspects of AI, ensuring that technology is deployed responsibly and in alignment with patient safety standards.

A key strength of the skills table lies in its alignment with established frameworks like ESCO and DigComp 2.2, providing a structured taxonomy for categorizing and prioritizing skills. However, it also reveals gaps in the current workforce's readiness, particularly in advanced AI-specific skills such as machine learning optimization and ethical AI governance. These gaps underscore the urgency of targeted training programmes and curriculum development. By addressing these deficiencies, the healthcare sector can better prepare its workforce to navigate the complexities of AI integration, ensuring that technological advancements translate into meaningful improvements in patient care and operational efficiency.

4.1 Challenges and Barriers

The integration of AI into healthcare systems presents significant challenges, particularly in terms of data accessibility and quality. AI systems rely heavily on high-quality, diverse datasets to function effectively, yet healthcare data is often fragmented, inconsistent, or siloed across institutions. This lack of standardized data formats and interoperability hinders the development and deployment of robust AI models. Moreover, privacy regulations, while critical for protecting patient rights, can further complicate data sharing and collaboration. Balancing the need for data access with stringent compliance requirements under frameworks like GDPR remains a persistent challenge for healthcare organizations.

Another barrier to adopting AI for patient safety is the lack of workforce readiness and training. Many healthcare professionals lack the necessary digital literacy or AI-specific skills to effectively implement and utilize AI technologies. This skills gap extends beyond technical knowledge to include understanding AI's ethical implications, navigating algorithmic decision-making, and fostering interdisciplinary collaboration. Without targeted educational initiatives and comprehensive training programmes, the potential benefits of AI in healthcare risk being underutilized, particularly in regions with limited resources or underdeveloped digital infrastructure.

Lastly, the high costs associated with AI implementation pose a significant challenge for healthcare systems. Developing, deploying, and maintaining AI technologies often requires substantial financial investment, making it particularly burdensome for smaller institutions or those in low-income regions. Additionally, the lack of clear regulatory pathways for AI in healthcare creates uncertainty for developers and providers, further inhibiting widespread adoption. Concerns about algorithmic bias, liability in cases of AI-related errors, and the need for continuous monitoring also add layers of complexity. Addressing these barriers requires a multi-faceted approach, combining policy interventions, funding mechanisms, and international collaboration to create a supportive ecosystem for AI integration in patient safety.

5. Conclusion

The adoption of Artificial Intelligence (AI) in healthcare holds transformative potential to enhance patient safety, optimize operational efficiency, and deliver more equitable healthcare outcomes across Europe. However, realizing this potential requires overcoming significant challenges, including workforce skill gaps, data accessibility issues, and regulatory uncertainties. The regional disparities observed among the seven countries – Austria, Croatia, Germany, Ireland, Italy, Montenegro, and Slovenia – highlight the importance of tailoring AI strategies to the unique needs of each healthcare system. By addressing these disparities through targeted investments in infrastructure, education, and collaborative frameworks, stakeholders can create a solid foundation for AI to thrive in diverse healthcare contexts.

Moving forward, a multi-stakeholder approach will be critical to ensuring that AI integration in healthcare remains patient-centric, ethical, and sustainable. Governments, healthcare providers, and technology developers must work together to establish robust regulatory frameworks, foster interdisciplinary collaboration, and prioritize workforce development. By focusing on these key areas, European countries can collectively harness AI's potential to revolutionize patient safety while minimizing risks. This report serves as a call to action for all stakeholders to engage in thoughtful planning and proactive measures, paving the way for a healthcare landscape where innovation and safety coexist seamlessly.



6. References

1. 6Wresearch. (n.d.). *Slovenia Artificial Intelligence (AI) Based Critical Care Market (2024 - 2030)*. Retrieved from <https://www.6wresearch.com/industry-report/slovenia-artificial-intelligence-ai-based-critical-care-market>
2. Aidoc. (n.d.-a). *University Medical Center Essen adopts Aidoc AI solutions*. Retrieved from <https://www.aidoc.com/about/news/aidoc-uk-essen-ai-agreement>
3. Aidoc. (n.d.-b). *Reif & Möller: Success story*. Retrieved from <https://www.aidoc.com/learn/blog/reif-moller-success-story>
4. Austrian Institute of Technology. (2023). *AI in healthcare innovation*. Retrieved from <https://www.ait.ac.at>
5. Austrian Ministry of Health. (2023). *Digital health and AI in Austria*. Retrieved from <https://www.gesundheit.gv.at>
6. Bundesinstitut für Bevölkerungsforschung. (2021). *Public trust in AI in Germany*. Retrieved from <https://www.bib.bund.de>
7. Chambers and Partners. (2024). *Artificial Intelligence 2024 - Montenegro*. Retrieved from <https://practiceguides.chambers.com/practice-guides/artificial-intelligence-2024/montenegro/trends-and-developments>
8. Croatian Ministry of Health. (2023). *AI and digital health in Croatia*. Retrieved from <https://zdravstvo.gov.hr>
9. Crema, C., Buonocore, T. M., Fostinelli, S., Parimbelli, E., Verde, F., Fundarò, C., ... & Redolfi, A. (2023). *Advancing Italian Biomedical Information Extraction with Transformers-based Models: Methodological Insights and Multicenter Practical Application*. Retrieved from <https://arxiv.org/abs/2306.05323>
10. Designveloper. (n.d.). *Case studies of AI in healthcare*. Retrieved from <https://www.designveloper.com/guide/case-studies-of-ai-in-healthcare>
11. Digital Skills and Jobs. (2023). *Austria Artificial Intelligence Mission 2030 (AIM)*. Retrieved from <https://digital-skills-jobs.europa.eu/en/actions/national-initiatives/national-strategies/austria-artificial-intelligence-mission-2030-aim>
12. Die Presse. (2023). *Infineon Austria gab trotz Gewinneinbruchs mehr für Forschung aus*. Retrieved from <https://www.diepresse.com/19171185/infineon-austria-gab-trotz-gewinneinbruchs-mehr-fuer-forschung-aus>
13. Der Standard. (2021). *Austrian Micro Data Center: Investment of around 500,000 euros*. Retrieved from <https://www.derstandard.at/story/2000130410947/neues-datenzentrum-austrian-micro-data-center-investition-von-rund-500>
14. European Commission. (n.d.). *ESCO – European Skills, Competences, and Occupations*. Retrieved from <https://esco.ec.europa.eu/en>
15. European Commission. (2022). *DigComp 2.2: The Digital Competence Framework for Citizens*. Retrieved from https://employment-social-affairs.ec.europa.eu/news/digital-competences-framework-digcomp-22-update-published-2022-03-22_en



16. European Commission. (n.d.). *Slovenia AI Strategy Report*. Retrieved from https://ai-watch.ec.europa.eu/countries/slovenia/slovenia-ai-strategy-report_en
17. European Commission. (2022). *Digital Economy and Society Index*. Retrieved from <https://ec.europa.eu/digital-desi>
18. Federal Ministry of Health. (2022). *AI in medicine: Strategies and applications*. Retrieved from <https://www.bmg.bund.de>
19. Fraunhofer Society. (2023). *AI research in Germany*. Retrieved from <https://www.fraunhofer.de>
20. Fraunhofer. (n.d.). *AI in medical documentation*. Retrieved from <https://www.fraunhofer.de/en/research/current-research/ai-in-medicine.html>
21. Health Service Executive. (2023). *Digital health and AI in Ireland*. Retrieved from <https://www.hse.ie>
20. HealthTech Ireland. (n.d.). *Best Healthcare Innovation piloted in an Irish healthcare setting*. Retrieved from <https://www.healthtechireland.ie/enter-awards/best-healthcare-innovation-piloted-in-an-irish-healthcare-setting>
21. Independent.ie. (2018, June 17). *'My heart rate was so low, I couldn't wake up... Two years later, I ran seven marathons in seven days' - Founder of iamYiam brings AI health platform to Ireland*. Retrieved from <https://www.independent.ie/business/small-business/my-heart-rate-was-so-low-i-couldnt-wake-up-two-years-later-i-ran-seven-marathons-in-seven-days-founder-of-iamyiam-brings-ai-health-platform-to-ireland/37009821.html>
22. Italian Ministry of Health. (2022). *AI and digital transformation in healthcare*. Retrieved from <https://www.salute.gov.it>
23. Montenegrin Ministry of Health. (2023). *AI and digital health in Montenegro*. Retrieved from <https://www.gov.me>
24. Nature. (2023). *The AI revolution in healthcare will need new regulatory pathways*. Retrieved from <https://www.nature.com/articles/d43978-023-00099-4>
25. O*NET. (n.d.). O*NET inline Occupation. Retrieved from <https://www.onetonline.org>
26. OECD. (2023). *AI principles*from. Retrieved from <https://www.oecd.org/en/topics/sub-issues/ai-principles.html>
27. OECD. (n.d.). *AI Strategies and Policies in Slovenia*. Retrieved from <https://oecd.ai/en/dashboards/countries/Slovenia>
28. OECD. (2023). *AI policy observatory: Croatia*. Retrieved from <https://oecd.ai>
29. OECD. (2023). *AI policy observatory: Germany*. Retrieved from <https://oecd.ai>
30. OECD. (2023). *AI policy observatory: Ireland*. Retrieved from <https://oecd.ai>
31. OECD. (2023). *AI policy observatory: Italy*. Retrieved from <https://oecd.ai>
32. OECD. (2023). *AI policy observatory: Montenegro*. Retrieved from <https://oecd.ai>
33. OECD. (2023). *AI policy observatory: Slovenia*. Retrieved from <https://oecd.ai>
34. ORF Steiermark. (2023). *CHIPS Competence Center in Graz to focus on medical technology*. Retrieved from <https://steiermark.orf.at/stories/3282954/>



35. Reale, R., Biasin, E., Scardovi, A., & Toro, S. (2023). *The Design and Implementation of a National AI Platform for Public Healthcare in Italy: Implications for Semantics and Interoperability*. Retrieved from <https://arxiv.org/abs/2304.11893>
36. Reuters. (2024, October 29). *Nvidia-backed AI firm Iambic unveils drug discovery 'breakthrough'*. Retrieved from <https://www.reuters.com/technology/artificial-intelligence/nvidia-backed-ai-firm-iambic-unveils-drug-discovery-breakthrough-2024-10-29/>
37. RTÉ. (2023, December 13). *Successful use of AI to assess patient scans at Mater hospital*. Retrieved from <https://www.rte.ie/news/health/2023/1213/1421765-mater-hospital-ai/>
38. RTÉ. (2024, November 28). *AI accountability lab launched at Trinity College Dublin*. Retrieved from <https://www.rte.ie/news/ireland/2024/1128/1483457-ai-lab-trinity/>
39. Siemens Healthineers. (2022). *AI in diagnostics: Innovations and challenges*. Retrieved from <https://www.siemens-healthineers.com>
40. Slovenian Ministry of Health. (2023). *AI and digital health in Slovenia*. Retrieved from <https://www.gov.si>
41. Soda, P., D'Amico, N. C., Tessadori, J., Valbusa, G., Guarrasi, V., Bortolotto, C., ... & Papa, S. (2020). *AIforCOVID: Predicting the clinical outcomes in patients with COVID-19 applying AI to chest-X-rays. An Italian multicentre study*. Retrieved from <https://arxiv.org/abs/2012.06531>
42. Stiglic, G., Kopitar, L., Gosak, L., Kocbek, P., He, Z., Chakraborty, P., Meyer, P., & Bian, J. (2023). *Improving Primary Healthcare Workflow Using Extreme Summarization of Scientific Literature Based on Generative AI*. Retrieved from <https://arxiv.org/abs/2307.15715>

7. Appendices

Appendix A: AI and Medicine – Scoping Questionnaire

Experts Background

1. In what town or city do you currently work in, and in which country?
2. What is the expert's current job title?
3. How many years of experience do you have working in medicine or medical technology?
4. What areas of medicine do you work in?

Expertise in Patient Safety Domains

5. On a scale of 1-5 (Novice = 1, Intermediate = 2, Proficient = 3, Advanced = 4, Master = 5), how would you rate your expertise and understanding of:

Overall patient safety

- Medication errors
- Surgical errors
- Healthcare-associated infections
- Sepsis
- Diagnostic errors
- Patient falls
- Venous thromboembolism
- Pressure ulcers
- Unsafe transfusion practices
- Patient misidentification
- Unsafe injection practices
- Other

Artificial Intelligence Related Questions

6. On the master scale of 1-5 (Novice = 1, Master = 5), how would you rate your expertise and understanding of how artificial intelligence is being used in medicine?
7. What AI systems can you identify within your expertise that are currently used to help improve patient safety?
8. If you identified AI systems, when were these AI systems introduced?
9. What has been the impact of these systems on patient safety?
10. What AI systems can you identify that are being planned to be used to help improve patient safety in the future?
11. In your area of expertise, who are the key decision-makers involved in the decision-making process to implement and use a new AI system?

AI Skills Training

12. Have you undertaken or provided any training that covers how AI can be used to improve patient safety?



13. If yes, can you provide an overview of what the training covered? Try and include curriculum topics, time spent training, and AI tools used in the training.
14. In your opinion, what are the key skills required for understanding and using AI effectively in the workplace to improve patient safety?
15. With respect to patient safety, what are the key challenges and limitations faced when introducing AI into medicine?
16. Do you have any other comments, thoughts, or ideas you wish to add?

Appendix B: List of ESCO analysed skills

Skill	Frequency	Detailed AI Impact	DigComp	OECD AI Principles	O*NET	DigComp Level 1	DigComp Level 2	DigComp Code	AI Skill Match	ESCO ConceptUri
Communicate in healthcare	6	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Communication and Collaboration	Interacting through digital technologies	2.1	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/7110bf9f-b245-4adc-9159-5081013fd64d
Communicate with a non-scientific audience	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Communication and Collaboration	Interacting through digital technologies	2.1	Matched with: Collaboration with AI developers and engineers	
Communicate with customers	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Communication and Collaboration	Interacting through digital technologies	2.1	Matched with: Collaboration with AI developers and engineers	http://data.europa.eu/esco/skill/0da516ee-e70e-4384-be13-f5ff80be8127
Communicate by telephone	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Communication and Collaboration	Interacting through digital technologies	2.1	No Match	http://data.europa.eu/esco/skill/de2f0ce8-f8d6-48c5-a213-4d065251cecf
Manage healthcare users' data	5	High Automation	Basic Digital Tasks	Operational Tasks	High Exposure	Information and Data Literacy	Managing data, information, and digital content	1.3	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/4d614c92-0c48-4a11-a5ed-416b34fd50d2
Manage research data	3	High Automation	Basic Digital Tasks	Operational Tasks	High Exposure	Information and Data Literacy	Managing data, information, and digital content	1.3	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/08b04e53-ed25-41a2-9f90-0b9cd939ba3d
Interact professionally in research and professional environments	3	Moderate Automation	Information Management	Oversight	Mixed Exposure	Information and Data Literacy	Browsing, searching, and filtering data, information, and digital content	1.1	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/20a8fe89-d4eb-4698-8521-8881c13377e0

Perform scientific research	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Information and Data Literacy	Browsing, searching, and filtering data, information, and digital content	1.1	Matched with: Basic programming and data analysis for healthcare	http://data.europa.eu/esco/skill/4fabca9a-7435-4f33-b1da-3cdb00340fdc
Promote open innovation in research	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Information and Data Literacy	Browsing, searching, and filtering data, information, and digital content	1.1	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/872a1632-f1db-4feb-bb27-0a6a359b7591
Integrate gender dimension in research	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Information and Data Literacy	Browsing, searching, and filtering data, information, and digital content	1.1	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/cd50d616-1f8b-481e-983f-68d2674ff82d
Publish academic research	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Information and Data Literacy	Browsing, searching, and filtering data, information, and digital content	1.1	No Match	http://data.europa.eu/esco/skill/979cf728-896f-4f2c-8fa8-2698ca0d4930
Promote the participation of citizens in scientific and research activities	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Information and Data Literacy	Browsing, searching, and filtering data, information, and digital content	1.1	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/fa642fc3-5cc5-41cf-8926-6617a8b976a7
Manage findable accessible interoperable and reusable data	1	High Automation	Basic Digital Tasks	Operational Tasks	High Exposure	Information and Data Literacy	Managing data, information, and digital content	1.3	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/4f5c1208-62fd-4e5a-a51e-306c06947e11
Apply for research funding	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Information and Data Literacy	Browsing, searching, and filtering data, information, and digital content	1.1	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/5f0082ab-2131-49b5-94d6-a1821daf57d6
Apply research ethics and scientific integrity principles in research activities	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Information and Data Literacy	Browsing, searching, and filtering data, information, and digital content	1.1	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/833289fa-3646-4010-9d9e-93ba8c9ef2d8
Conduct research across disciplines	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Information and Data Literacy	Browsing, searching, and filtering data, information, and digital content	1.1	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/f7b071bf-4882-4cfc-ae0a-7e0e0ab94c61

Develop professional network with researchers and scientists	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Information and Data Literacy	Browsing, searching, and filtering data, information, and digital content	1.1	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/cc61f9e5-d4fc-470e-8606-1ce865ff8386
Evaluate research activities	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Information and Data Literacy	Browsing, searching, and filtering data, information, and digital content	1.1	No Match	http://data.europa.eu/esco/skill/39f67488-cfd3-4370-8d7e-da98163102d9
Evaluate scientific data concerning medicines	1	High Automation	Basic Digital Tasks	Operational Tasks	High Exposure	Information and Data Literacy	Managing data, information, and digital content	1.3	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/9622b720-ee2b-44fb-8cd0-37afc9c183a4
Conduct research on reproductive medicine	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Information and Data Literacy	Browsing, searching, and filtering data, information, and digital content	1.1	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/c9df1379-028e-4d52-b9d2-469877049172
Collect healthcare user's general data	1	High Automation	Basic Digital Tasks	Operational Tasks	High Exposure	Information and Data Literacy	Managing data, information, and digital content	1.3	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/7d08e3cd-3a68-4568-8273-5b53ac0cbc71
Maintain healthcare user data confidentiality	1	High Automation	Basic Digital Tasks	Operational Tasks	High Exposure	Information and Data Literacy	Managing data, information, and digital content	1.3	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/51ece34f-c24e-4183-9bf4-9b6f28748aec
Record test data	1	High Automation	Basic Digital Tasks	Operational Tasks	High Exposure	Information and Data Literacy	Managing data, information, and digital content	1.3	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/328733a7-6d84-420d-a65c-2a8014fadc60
Evaluate nursing care	1	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Information and Data Literacy	Evaluating data, information, and digital content	1.2	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/e98a5096-de98-46d2-88c8-951f4029c038
Manage personal professional development	4	Moderate Automation	Information Management	Oversight	Mixed Exposure	Problem Solving	Identifying needs and technological responses	5.2	Matched with: Knowledge of machine learning concepts	http://data.europa.eu/esco/skill/a8d24a95-47b3-4f88-92e7-06600bcd3612
Perform project management	2	Moderate Automation	Information Management	Oversight	Mixed Exposure	Problem Solving	Identifying needs and technological responses	5.2	Matched with: Basic programming and data analysis for healthcare	http://data.europa.eu/esco/skill/cd5efa8c-e44d-4cbc-91c6-796018dbed68

		Automa tion								
Manage intellectual property rights	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Problem Solving	Identifying needs and technological responses	5.2	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/518dc04d-092d-4fa1-bd82-88b7a9278ef7
Manage medical supply chains	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Problem Solving	Identifying needs and technological responses	5.2	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/71d441c3-163a-41b6-b713-074d69362c27
Manage medication safety issues	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Problem Solving	Identifying needs and technological responses	5.2	No Match	http://data.europa.eu/esco/skill/d97880ee-434d-4085-aeff-1a76ac21071e
Manage open publications	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Problem Solving	Identifying needs and technological responses	5.2	No Match	http://data.europa.eu/esco/skill/da930e2f-6047-4616-a598-bba8ecef3039
Manage acute oncology patients	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Problem Solving	Identifying needs and technological responses	5.2	Matched with: Telemedicine and remote patient monitoring	http://data.europa.eu/esco/skill/9a350a15-0f93-4c3b-9954-32bd19c8e91e
Manage adverse reactions to drugs	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Problem Solving	Identifying needs and technological responses	5.2	No Match	http://data.europa.eu/esco/skill/cae8a697-1047-4da2-ac7d-77065dade235
Manage communicable disease	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Problem Solving	Identifying needs and technological responses	5.2	No Match	http://data.europa.eu/esco/skill/298a166c-24d6-4635-9731-8376617fb0ff
Manage hospital-acquired infections	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Problem Solving	Identifying needs and technological responses	5.2	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/05befef9-cb0b-410c-b5fc-f8a3c3598fca

Manage the neuropsychiatric sequelae of stroke	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Problem Solving	Identifying needs and technological responses	5.2	Matched with: Knowledge of machine learning concepts	http://data.europa.eu/esco/skill/84324095-c722-44c4-a662-7155312f153f
Manage trauma through surgical means	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Problem Solving	Identifying needs and technological responses	5.2	No Match	http://data.europa.eu/esco/skill/5986140f-daac-4a44-9c77-756db279e3ac
Manage treatment for HIV affected patients	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Problem Solving	Identifying needs and technological responses	5.2	Matched with: Basic programming and data analysis for healthcare	http://data.europa.eu/esco/skill/334a91db-48a1-4fee-bbb0-82e97f48c07d
Manage radiology information system	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Problem Solving	Identifying needs and technological responses	5.2	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/479944ef-8d2c-4279-b3d1-2b85c761fb30
Manage major incidents	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Problem Solving	Identifying needs and technological responses	5.2	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/8071881c-d652-46e7-9cf4-e06a7f1e57c7
Manage patients with acute illnesses	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Problem Solving	Identifying needs and technological responses	5.2	Matched with: Telemedicine and remote patient monitoring	http://data.europa.eu/esco/skill/135488ce-f5ba-4238-b7d1-8a1197664ab6
Manage acute pain	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Problem Solving	Identifying needs and technological responses	5.2	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/ea8aa053-2ac6-4f8e-b5d7-8e52b55966c2
Manage budgets	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Problem Solving	Identifying needs and technological responses	5.2	No Match	http://data.europa.eu/esco/skill/21c5790c-0930-4d74-b3b0-84caf5af12ea
Manage personnel agenda	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Problem Solving	Identifying needs and technological responses	5.2	No Match	http://data.europa.eu/esco/skill/7ec3c77b-1955-4397-9bd3-7b7b9d0b8531

		Automa tion								
Identify patients' medical records	1	High Automa tion	Basic Digital Tasks	Operatio nal Tasks	High Expos ure	Problem Solving	Identifying digital competence gaps	5.4	Matched with: Proficiency in using electronic health records (EHR)	http://data.europa.eu/esco/skill/9ec07ba9-f876-4dce-92b1-9e0cd68aa969
Manage edentulous patients	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Problem Solving	Identifying needs and technological responses	5.2	Matched with: Telemedicine and remote patient monitoring	http://data.europa.eu/esco/skill/2f1b740a-8b2c-48c0-a38a-64d347370d1f
Manage adverse reactions to anaesthesia	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Problem Solving	Identifying needs and technological responses	5.2	No Match	http://data.europa.eu/esco/skill/445f384e-c0bb-4362-8e44-22f65821f9b6
Manage dental emergencies	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Problem Solving	Identifying needs and technological responses	5.2	No Match	http://data.europa.eu/esco/skill/ff1c55da-2436-4b6c-a978-a0255e12d39b
Manage infection control in the facility	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Problem Solving	Identifying needs and technological responses	5.2	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/ce086892-462b-45b3-80e7-33bdb5d2db4d
Manage occlusion	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Problem Solving	Identifying needs and technological responses	5.2	No Match	http://data.europa.eu/esco/skill/4eae43eb-bf68-4f29-998a-dc48627bb905
Manage information in health care	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Problem Solving	Identifying needs and technological responses	5.2	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/6c3e28d6-e3cc-4b25-a5da-a0dce043cf17
Manage multiple patients simultaneously	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Problem Solving	Identifying needs and technological responses	5.2	Matched with: Telemedicine and remote patient monitoring	http://data.europa.eu/esco/skill/f735e153-1f57-4841-afe9-4712cc740054

Solve problems in healthcare	1	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Problem Solving	Solving technical problems	5.1	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/a32e7fb1-af9e-4c09-8ea7-72b7442e9cda
Apply radiation protection procedures	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Safety	Protecting personal data and privacy	4.2	No Match	http://data.europa.eu/esco/skill/2ebf1ab5-1088-492a-96f7-51d308b75c76
Ensure compliance with radiation protection regulations	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Safety	Protecting personal data and privacy	4.2	Matched with: Collaboration with AI developers and engineers	http://data.europa.eu/esco/skill/dc07021c-7528-4351-809a-1525904466ba
Wear appropriate protective gear	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Safety	Protecting personal data and privacy	4.2	No Match	http://data.europa.eu/esco/skill/6122d586-5978-431f-8e7a-96e61fc1f3fc
Apply organisational techniques	7	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/d3eccb86-f02d-4950-bfbd-20b9510774a1
Use e-health and mobile health technologies	6	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/16636767-c215-4cf0-b126-e144fea20926
Work in multidisciplinary health teams	6	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/eba85523-6ad2-4cd9-9b27-a0b6a39b8cfa
Respond to changing situations in health care	6	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/049c8caf-dd12-45fc-9bfa-b64051f32a19
Ensure safety of healthcare users	6	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/ce0d6a42-59c1-433e-ab62-adfc969c46bb

Listen actively	6	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/a17286c5-238d-4f0b-bc24-29e9121345de
Deal with emergency care situations	6	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unknown	Matched with: Collaboration with AI developers and engineers	http://data.europa.eu/esco/skill/51e79cb4-fab3-404c-88f3-cd4a1bd5879e
Follow clinical guidelines	6	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/76395873-7fe2-4f9a-b4b6-9932f8cbd0b4
Contribute to continuity of health care	6	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/13724e7d-b946-4773-915e-9621340237bc
Promote inclusion	6	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/bcd2ce08-ba12-4d66-865f-f4ba36419707
Comply with quality standards related to healthcare practice	6	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/98eb1f3b-3480-416b-bd4b-811946f7e347
Comply with legislation related to health care	6	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unknown	Matched with: Proficiency in using electronic health records (EHR)	http://data.europa.eu/esco/skill/9fcf9918-fdef-49c3-aedc-518eb1e7e1f5
Apply context specific clinical competences	6	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/e18a6a3c-4f26-4141-8c72-4b4f01d77914
Provide health education	6	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Proficiency in using electronic health records (EHR)	http://data.europa.eu/esco/skill/60b2dd49-c677-4f47-816e-aff3b577e113

Interact with healthcare users	5	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/c65aa043-98da-4136-9877-494e72d9e4cf
Empathise with the healthcare user	5	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/2475cd27-8d6c-4318-a364-21395b23acba
Accept own accountability	5	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unkn own	No Match	http://data.europa.eu/esco/skill/f90d4810-8bac-4e5e-b870-3e35a4138ff7
Develop a collaborative therapeutic relationship	5	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unkn own	No Match	http://data.europa.eu/esco/skill/d93f9e29-9740-4231-8486-13d377b99f05
Work in a multicultural environment in health care	5	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/b55f61a4-5f9e-4741-ba95-9ac04b64119b
Provide treatment strategies for challenges to human health	4	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unkn own	Matched with: Proficiency in using electronic health records (EHR)	http://data.europa.eu/esco/skill/c82f9319-cf46-4257-a8ce-542d0a7fed8f
Advise on healthcare users' informed consent	4	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/8232979d-6aa4-40c9-a12b-5152a52a76b8
Inform policy makers on health-related challenges	4	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/0b5aaee4-c948-4853-bf8d-b9cd6c4917ee
Educate on the prevention of illness	4	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unkn own	Matched with: Knowledge of machine learning concepts	http://data.europa.eu/esco/skill/097098fc-6d89-44e9-9305-98ac5c0a78ac

Adhere to organisational guidelines	4	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/aa238394-8126-4ada-be2f-9dfe065cf314
Address problems critically	3	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/b9f16465-56a9-426b-a047-0f9f1f95ec92
Demonstrate disciplinary expertise	3	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/4134622c-c3fb-4a41-beb6-6d58ba5107db
Operate open source software	3	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Knowledge of machine learning concepts	http://data.europa.eu/esco/skill/2b34764d-637c-48f5-aa70-31e15c965db6
Synthesise information	3	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/f715be1d-5fc4-49d3-82a5-0b8090d12849
Think abstractly	3	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/9a58cd26-58eb-4a1c-b1b6-64037fe9cfa1
Delegate emergency care	3	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/092f44f6-8631-460c-a862-f79f5c15dc03
Refer healthcare users	2	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/eb9f8a48-4be4-434b-be9d-293ff5c07f97
Conduct cancer screening tests	2	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/1bd03b9b-835e-4719-ac20-d2d547840061

Send samples to laboratory	2	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/819c55a7-8bc7-423a-9b3b-7adf5a6e6a5b
Monitor children's physical development	2	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Continuous professional development in digital skills	http://data.europa.eu/esco/skill/3ff9d956-3e26-40d1-ae0e-f5f247943042
Perform reconstructive oral surgery	2	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Basic programming and data analysis for healthcare	http://data.europa.eu/esco/skill/d4b14482-e5c2-48a2-a3f6-f4ba37a6e588
Mentor individuals	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/a584a638-a2c0-4b3c-bdf3-a64f87225be9
Maintain adequate medication storage conditions	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/540a1886-ab91-4324-9f63-568533fad853
Prepare doses of medication according to patient needs	1	Augmentation	Data Handling / Collaboration	Human-AI Collaboration	Augmented Tasks	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/be5d0d1c-780c-49f9-a809-e72458e5be38
Perform therapeutic drug monitoring	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/f83cc89f-30a3-4674-a4ce-a1be2a3c0bd2
Provide pharmaceutical advice	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/705ec490-d4e8-4792-a230-82182f53d14a
Participate in medical inventory control	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/bf2be07f-2290-4d5d-84ec-fbc3b1001d1

			Automa tion							
Maintain pharmacy records	1	High Automa tion	Basic Digital Tasks	Operatio nal Tasks	High Expos ure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/c2ce5a8e-7885-48b7-81fe-3e8a057c47a9
Provide medicines information	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/077fb5d5-a9a2-4e27-b1b0-fe3149ba3da0
Process medical insurance claims	1	High Automa tion	Basic Digital Tasks	Operatio nal Tasks	High Expos ure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/7361c086-443c-43c2-8215-31ef8e8895e5
Obtain healthcare user's medical status information	1	Minimal Impact	Interperson al / Cultural Sensitivity	Ethical Reasoni ng	Low Expos ure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/2a8c1070-b7a6-4e4b-998a-21e885b6fb13
Promote the transfer of knowledge	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Unknown	Unknown	Unkn own	Matched with: Knowledge of machine learning concepts	http://data.europa.eu/esco/skill/988f4ac3-a37c-4b0a-a40f-4e0e56b5919e
Manufacture medicines	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/8ee6763c-ca7b-4c0d-9208-b8f26f100e72
Monitor patients' medication	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Unknown	Unknown	Unkn own	Matched with: Telemedicine and remote patient monitoring	http://data.europa.eu/esco/skill/fa01b6c3-82e0-43f1-af78-fd57f832e09a
Prepare medication from prescription	1	Augme ntation	Data Handling / Collaboratio n	Human- AI Collabor ation	Augm ented Tasks	Unknown	Unknown	Unkn own	No Match	http://data.europa.eu/esco/skill/ad32ac81-7dff-48c0-ac27-062d62b08861
Ensure pharmacovigilance	1	Moderate	Information Managemen t	Oversigh t	Mixed Expos ure	Unknown	Unknown	Unkn own	No Match	http://data.europa.eu/esco/skill/979fdc05-7bfe-41f8-b071-7d3ec4c9540b

		Automa tion								
Increase the impact of science on policy and society	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	
Select hazard control	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unkn own	No Match	http://data.europa.eu/esco/skill/2399e65b-cf2b-4f5b-9002-607e790fcf2a
Advise on poisoning incidents	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/592bb88c-c063-48a7-9dca-c81f37f724a5
Write reports on emergency cases	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unkn own	No Match	http://data.europa.eu/esco/skill/7cb8cb58-aae4-4625-9e8c-744560474241
Transfer patients to and from ambulance vehicles	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/64cb2785-974b-4aa3-818a-0310602185cb
Transfer patients	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unkn own	Matched with: Telemedicine and remote patient monitoring	http://data.europa.eu/esco/skill/949c119b-3433-439f-8ca9-1a9ce04b696d
Tolerate stress	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unkn own	No Match	http://data.europa.eu/esco/skill/d15f8745-28f8-4abf-a7b6-6cb8a304efd2
Provide first aid	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unkn own	Matched with: Understanding AI bias and fairness in algorithms	http://data.europa.eu/esco/skill/1d21f6ad-340f-45da-a0a3-4e83867f47a6

Handle the logistics of medicinal products	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/0d85dc6f-ea26-49a9-85b9-532441b000e2
Prioritise emergencies	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/f3c38c0f-eef5-443f-be68-14d74eaa695b
Position patients undergoing interventions	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/e2e398af-6449-48e7-9fd5-ebe202dd157f
Operate specialised equipment in emergency	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/03500955-88a6-4c3d-a8c0-7594409dcff0
Operate an emergency communication system	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Patient-centered communication using AI tools	http://data.europa.eu/esco/skill/f39336a8-8bf3-4a36-ac40-2f88836f5112
Observe confidentiality	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/8d202e22-85e9-47b1-a1e0-3296d17244cd
Monitor basic patients signs	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Basic programming and data analysis for healthcare	http://data.europa.eu/esco/skill/d3b74d50-7fc9-4051-9335-58d129a4a064
Check information on prescriptions	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/030de41b-bb8b-4e4b-859c-9afd4c17605b
Contribute to public health campaigns	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Understanding AI bias	http://data.europa.eu/esco/skill/b77b7ac5-f25f-4baf-8e49-dcd4f31899f2

		Automa tion							and fairness in algorithms	
Counsel healthcare users on medicines	1	Minimal Impact	Interperson al / Cultural Sensitivity	Ethical Reasoni ng	Low Expos ure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/1024388a-5601-4d18-bae9-4531a12b774b
Dispense medicines	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/46b391a6-bbd9-4e80-afb0-ad205101af59
Disseminate results to the scientific community	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/2b1e2927-3542-48da-9063-02925e7562c1
Draft scientific or academic papers and technical documentation	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/00b9a3aa-7070-4bb5-8020-f228a97cf42f
Ensure client orientation	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Unknown	Unknown	Unkn own	No Match	http://data.europa.eu/esco/skill/b7c8f418-08d5-45d6-b697-ab26c6ecbf4
Supervise pharmaceutical staff	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Unknown	Unknown	Unkn own	No Match	http://data.europa.eu/esco/skill/e394b68e-576e-48d3-9d8f-a7ead7dfb008
Ensure the appropriate supply in pharmacy	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/509fedda-d520-46b5-a801-b3d36221a645
Follow procedures to control substances hazardous to health	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Unknown	Unknown	Unkn own	Matched with: Proficiency in using electronic health records (EHR)	http://data.europa.eu/esco/skill/02e235f4-a30a-412a-a06e-1c471ad28678

Speak different languages	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/2de4572a-4724-4f76-afc2-72a568a264ac
Post-process medical images	1	High Automation	Basic Digital Tasks	Operational Tasks	High Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/ba1f42f2-da96-40d2-b052-7f92d5889b72
Test medicinal products	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/6b6c1537-58c1-45e1-b4e4-f5193fb0a6dc
Interpret electromyograms	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/7940ede6-5656-41da-8961-bacc2492a35f
Operate patients with thoracic diseases	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Telemedicine and remote patient monitoring	http://data.europa.eu/esco/skill/05d529f7-a76a-4d45-b681-5e03eb505845
Perform antepartum fetal monitoring	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/1c218559-82fd-45f9-b2db-1734321b3edc
Perform bronchoscopy	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Basic programming and data analysis for healthcare	http://data.europa.eu/esco/skill/2057cf5f-4aa7-4094-bbf0-819777405eb7
Perform endoscopy	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Basic programming and data analysis for healthcare	http://data.europa.eu/esco/skill/f22cfa92-9336-4205-a691-4d5290701463
Perform esophagoscopy	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Basic programming and data analysis for healthcare	http://data.europa.eu/esco/skill/511025b5-8f29-402b-9d90-49a874eb6ac3

Perform eye surgery	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Basic programming and data analysis for healthcare	http://data.europa.eu/esco/skill/5889c7dd-d33d-4cda-93d6-84b61577cc98
Perform gynecological examination	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/1d4975d3-3278-4a35-ab2f-92215876ae73
Perform intra-operative neuromonitoring	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/79e64cc4-75f2-4b92-b579-fb127ca17091
Perform pathology consultations	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Basic programming and data analysis for healthcare	http://data.europa.eu/esco/skill/cc62c334-f5f6-492a-87ab-02a13122bd44
Perform reconstructive microsurgery	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Basic programming and data analysis for healthcare	http://data.europa.eu/esco/skill/60358919-aa4c-4fc4-b687-14597dbbc752
Perform reconstructive plastic surgery	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Basic programming and data analysis for healthcare	http://data.europa.eu/esco/skill/3a48fc82-f199-45eb-81d8-4ae250505009
Perform skin surgery	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/2c632ab6-5548-4af1-a026-92d655201156
Perform stem cell transplantation	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Basic programming and data analysis for healthcare	http://data.europa.eu/esco/skill/835a88b8-3a49-47b2-8a86-6d58cf42757c
Perform vascular surgery therapeutic procedures	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Basic programming and data analysis for healthcare	http://data.europa.eu/esco/skill/fe358ce4-bbe7-45d8-94e6-11a86a75dfab

			Automa tion								
Provide anti-cancer medical treatment	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unkn own	No Match	http://data.europa.eu/esco/skill/0e685cc5-df53-451f-b987-7fd6d7025447	
Provide clinical advice to team members	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/5fd64399-aff4-459e-8d78-510acf1abba1	
Provide healthcare services to patients in specialised medicine	1	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/e77eab3f-ff23-4b93-9911-e6c86477f12d	
Treat endocrine disorders	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/a196d64e-214a-4be3-9451-88eadb0498cd	
Use laser therapy for skin conditions	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/09e8e770-b467-4fba-80dd-7e896ada0d5e	
Use obstetric sonography	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unkn own	No Match	http://data.europa.eu/esco/skill/ea57d35d-cdb2-42cf-a2aa-1b23ae39be32	
Use specialised instruments in otorhinolaryngology	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare		
Use ophthalmic instruments	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/12a105f9-8288-48b5-91e3-ac886c5f77fe	

Interpret urology diagnostic tests	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: AI-assisted diagnostic interpretation	http://data.europa.eu/esco/skill/9ab25f31-8aa8-4367-bff0-b7c6ca07ac0b
Interpret diagnostic tests in otorhinolaryngology	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: AI-assisted diagnostic interpretation	http://data.europa.eu/esco/skill/8ed02827-a49f-488a-b5b9-34201dd4fbee
Write scientific publications	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/c3c2420c-ce9a-4371-8eed-1db479c3a562
Implant brachytherapy treatments	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/d60a1a1b-d697-4bda-b410-c43815194a4d
Adhere to organisational code of ethics	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Knowledge of machine learning concepts	http://data.europa.eu/esco/skill/d2564da5-c21f-4c02-8887-c78a001bb183
Analyse X-ray imagery	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/2ebcd941-fdb5-410d-8346-a5b85833331d
Apply radiological health sciences	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Proficiency in using electronic health records (EHR)	http://data.europa.eu/esco/skill/b61124b7-3a6d-4f76-96cb-8e2214b79484
Calculate exposure to radiation	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/f46220aa-ad70-4c18-99dc-cb978f2850d2
Conduct radiotherapy computer planning	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/df538078-0ccb-4125-a61d-ebaa648b39f2

		Automa tion								
Determine imaging techniques to be performed	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/d1bffe87-5020-4199-bcea-50108b040809
Interact with healthcare suppliers	1	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/1854ad4a-9789-4596-9a9e-fed7b8a29c50
Interpret requests for imaging examinations	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/5b871642-a03d-452d-885c-bbf7b2be671c
Maintain imaging equipment	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/2f20ffb0-f701-4189-b4f4-620e9745e8a2
Operate medical imaging equipment	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/8d17898e-cd9c-444d-b084-8708a5447747
Prepare patients for imaging procedures	1	Augmentation	Data Handling / Collaboration	Human-AI Collaboration	Augmented Tasks	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/f94ccbcc-a818-4151-82ff-9440bf59b88c
Provide information	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/732cb4dd-af91-4c88-9a9f-5fc62144e500
Provide psychological support to patients	1	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unkn own	Matched with: Telemedicine and remote patient monitoring	http://data.europa.eu/esco/skill/108112e0-a3df-43bf-91ec-d9614ca4224c

Interpret diagnostic procedures for vascular surgery	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: AI-assisted diagnostic interpretation	http://data.europa.eu/esco/skill/fce2f0ae-7cd5-4b0b-8e41-e2a01ec0b2e9
Conduct polysomnography	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/ba73ea7b-3e80-446d-898a-f8ec07437cb3
Conduct preoperative investigations	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/6af2f535-433b-4c38-b31b-ab14a8bac266
Counsel patients on fertility treatments	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Telemedicine and remote patient monitoring	http://data.europa.eu/esco/skill/e6881443-3b59-4198-a3e0-61a814424bf4
Demonstrate technical skills during neurological surgery	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/4319f251-014f-4b0d-b78a-1fac68057b58
Determine eye disease progression	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/32bfacd9-51b7-4757-952e-7f2be2671632
Develop long-term treatment course for disorders in the glandular system	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/2c9a8493-6a2d-4613-9d4c-03663cc15c1c
Diagnose brain death	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/3164ecc3-1ccc-43c6-8d7e-9e9e80b46ae4
Diagnose disorders of the urogenital system	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Knowledge of machine learning concepts	http://data.europa.eu/esco/skill/b7d292ca-b873-407e-a1cf-0e7d1a2149cf

		Automa tion								
Diagnose rheumatic diseases	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/2633d227-076a-4e71-a96a-f81ccba7a554
Follow-up patients with heart attack	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Telemedicine and remote patient monitoring	http://data.europa.eu/esco/skill/527b4d56-76f9-470a-9a90-cc5203501083
Promote a positive image of nursing	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/1b3370df-c280-470c-ac35-951f42ca8b19
Apply safety procedures in laboratory	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/6f571969-3640-4774-a9bc-fd2ef583fdec
Use orthodontic tools	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Patient-centered communication using AI tools	http://data.europa.eu/esco/skill/1e186b86-9ef9-405b-94d0-73593c5f6dc2
Write prescriptions for medication in dentistry	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/ef69c0d3-0203-4de5-848f-9329c7fe8440
Assess physical conditions of clients	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Knowledge of machine learning concepts	http://data.europa.eu/esco/skill/1b9899a4-5b50-44b0-a21a-e2f86c51ac5a
Provide healthcare services to patients in general medical practice	1	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/371f44ba-4a83-4726-89d1-cb527d7ced5c

Answer patients' questions	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Telemedicine and remote patient monitoring	http://data.europa.eu/esco/skill/38cd93b5-af8a-4528-a0f0-f8439ccb4b09
Type on electronic devices	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Proficiency in using electronic health records (EHR)	http://data.europa.eu/esco/skill/d181042e-c531-4461-af7c-4071c53418fe
Use communication techniques	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Patient-centered communication using AI tools	http://data.europa.eu/esco/skill/7ff2c668-0e86-418a-a962-4958262ee337
Use spreadsheets software	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Knowledge of machine learning concepts	http://data.europa.eu/esco/skill/1973c966-f236-40c9-b2d4-5d71a89019be
Archive healthcare users' records	1	High Automation	Basic Digital Tasks	Operational Tasks	High Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/2e040fb0-66b9-4529-bec6-466472b60773
Treat tooth decay	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/24e3d6ad-3357-4c6e-af8d-909f0e22f1bf
Calibrate laboratory equipment	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/82fadde2-45cc-4734-bace-dadafdeaa41f
Check the received biological samples	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/e0e86af6-ecb7-446b-acdd-d70cf2e7daad
Conduct routine blood testing	1	High Automation	Basic Digital Tasks	Operational Tasks	High Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/1dc72b51-0428-4d28-b44f-2b8d55f25599

Examine cell specimens microscopically	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/41ef4b15-1c8c-488e-9abc-6731d8011312
Label blood samples	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/6cf8c56c-4db6-4f6b-88b6-331f9902acea
Maintain laboratory equipment	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/3529d640-5d49-45fe-8ede-491e9c8e0447
Maintain medical laboratory equipment	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/8557f2f8-7ff3-47d8-bdb4-b9608dee906e
Mix chemicals	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/2fffc0e3-3e79-4e85-8af4-c0ae327ce2f8
Operate scientific measuring equipment	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/cb1a2fbf-242d-4a4e-a466-588378f124c1
Perform cerebrospinal fluid analysis	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/b8e0e484-955f-4396-b9b4-aaadde86017f
Perform laboratory tests	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Basic programming and data analysis for healthcare	http://data.europa.eu/esco/skill/0b917c3e-e49f-40d9-8f95-3bc8e9c06fd2
Perform sample testing	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/b5a1fc87-c9f2-41f4-a1ae-28e023715592

		Automa tion								
Undertake clinical audit	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/0c8c1e58-1c48-4efc-9359-9a28f803c52d
Treat snoring problems	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/1273b436-800b-49f5-91ad-82e22f5ebe57
Carry out local anesthesia in dental procedures	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/b82ffce-9874-4c6f-b1b9-e8b61d7ecfdb
Correct temporomandibular joint abnormalities	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/a5d88c63-853a-4f4e-80c3-1e793bb42051
Counsel on nutrition and its impact on oral health	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/7f2cb89b-cd07-48d3-8e29-0082942284ef
Deal with patients' anxiety	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Unknown	Unknown	Unkn own	Matched with: Telemedicine and remote patient monitoring	http://data.europa.eu/esco/skill/6c77aeef-327e-440f-8510-74ce5a73bd8a
Diagnose abnormalities of dental-facial structures	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Unknown	Unknown	Unkn own	Matched with: Knowledge of machine learning concepts	http://data.europa.eu/esco/skill/bc916b78-2b53-4850-a4aa-7d748e99cc0a
Differentiate between maxillofacial tissues	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Unknown	Unknown	Unkn own	Matched with: Knowledge of machine learning concepts	http://data.europa.eu/esco/skill/083c139e-3228-413e-93f0-71fe5e301421

Discuss dental treatment options with patient	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Telemedicine and remote patient monitoring	http://data.europa.eu/esco/skill/1ccb6921-3599-4d58-86ee-b659b5fa1c2a
Fit dental appliances	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/9b9e03bd-b8cd-45d1-8983-7a68e0e63e1f
Interpret findings from medical examinations	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/88323c78-204d-4b96-81ad-6b52add135c0
Keep records for dental prostheses	1	High Automation	Basic Digital Tasks	Operational Tasks	High Exposure	Unknown	Unknown	Unknown	Matched with: Proficiency in using electronic health records (EHR)	http://data.europa.eu/esco/skill/7bab3575-28d7-4b29-9429-350cdf214a6f
Lead the dental team	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/06ec0ecb-87fc-47a4-8348-81df2470ff3d
Treat exposure of dental pulp	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Knowledge of machine learning concepts	http://data.europa.eu/esco/skill/ae04aae5-968e-4b05-ae3a-a38d61964528
Minimise occupational hazards in dentistry practice	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/5a70f4b8-0e70-4432-b052-6aa33345154f
Perform dental clinical examination	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/972465ce-3f6a-45c2-9a79-98b9ce97bdd2
Perform multiple tasks at the same time	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Basic programming and data analysis for healthcare	http://data.europa.eu/esco/skill/0b144726-21c2-46ed-8d13-c03d27f61604

Perform oral health diagnosis	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Proficiency in using electronic health records (EHR)	http://data.europa.eu/esco/skill/023e4b09-a193-4c2b-9009-f7dc9326a19b
Promote health and safety policies in health services	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/14d88fae-ead0-4d19-8519-04b154b46987
Provide instruction in orthodontic procedures	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/c8e42fdb-ac7f-4494-acea-f29561c19ab6
Provide periodontal treatment	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/08f5c290-a81f-4614-89d2-bb5e81e82276
Rehabilitate worn dentition	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/04ba2e0a-a939-43ab-92fe-63f50b55c798
Restore teeth' natural colour	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/0ddce721-52dd-485d-a2da-f3237c65dec7
Select materials for orthodontic appliances	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Basic programming and data analysis for healthcare	http://data.europa.eu/esco/skill/6717f75b-1c16-4e5f-80c2-b7c02280f87f
Supervise dental staff	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/7718ad50-18ab-45a6-9eda-91e7634e3b4b
Treat cases of malocclusion	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Knowledge of machine learning concepts	http://data.europa.eu/esco/skill/87635702-302f-47a5-8f3f-30c2cde8742a

		Automa tion								
Prepare samples for testing	1	Augme ntation	Data Handling / Collaboratio n	Human- AI Collabor ation	Augm ented Tasks	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/cd4b9e72-a18d-44bd-b227-14bbdd162dc1
Test chemical samples	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Unknown	Unknown	Unkn own	No Match	http://data.europa.eu/esco/skill/ab2e56f3-24f0-413b-a67b-291a67fc2d1f
Maintain order at scenes of accidents	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/51c9eb38-e148-4094-b23a-6b8e31c3bfa8
Provide comprehensive care for patients with surgical conditions	1	Minimal Impact	Interperson al / Cultural Sensitivity	Ethical Reasoni ng	Low Expos ure	Unknown	Unknown	Unkn own	Matched with: Basic programming and data analysis for healthcare	http://data.europa.eu/esco/skill/848c6821-5578-4104-9060-f1bf75bb3a80
Diagnose nursing care	1	Minimal Impact	Interperson al / Cultural Sensitivity	Ethical Reasoni ng	Low Expos ure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/46003629-a579-4d0a-b3ea-80ef890699d6
Empower individuals, families and groups	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/441707bb-9ad3-406c-9975-a6bec96f537b
Have computer literacy	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Unknown	Unknown	Unkn own	No Match	http://data.europa.eu/esco/skill/d15ce60f-ddab-41ce-ba56-398451b77b60
Implement fundamentals of nursing	1	Moderate Automa tion	Information Managemen t	Oversigh t	Mixed Expos ure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/516e324b-03fc-4d3b-9986-e46e9834cd43

Implement nursing care	1	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/f98e06f5-a09a-4356-b6a8-d55a7d3c5356
Implement scientific decision making in healthcare	1	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/8e0bfbbba-6e9d-48e0-b152-2cc949e5022a
Initiate life preserving measures	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/5cc97a45-69fc-4f37-a973-402d5ac561ac
Participate in health personnel training	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/4be3c34e-47ba-4881-ac74-8bd244e0b04c
Plan nursing care	1	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/6acf652c-33b2-4e28-8f79-1e553f255229
Promote human rights	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unkn own	No Match	http://data.europa.eu/esco/skill/646d871b-4503-4dc8-a076-06d7085e4cde
Provide nursing advice on healthcare	1	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/6063652e-22c4-472e-bb96-6e5ec1e7c5de
Apply sustainability principles in health care	1	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/e6bf6e73-230a-434c-97b2-a0c042a8b7ac
Provide professional care in nursing	1	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unkn own	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/1023ac61-250f-4eef-b7a9-238cf071685f
Provide stroke rehabilitation services	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unkn own	No Match	http://data.europa.eu/esco/skill/81b6d428-028b-4bf5-89a2-5e5cb4a8c444

Use electronic health records in nursing	1	High Automation	Basic Digital Tasks	Operational Tasks	High Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/a46743b7-ff8c-49b6-99f7-7fa5bc241771
Adapt to emergency care environment	1	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/21c35dda-555a-4db7-8984-c01dcd8ad865
Administer medication in emergency	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/f199955e-870e-4f44-aa65-51694449b6ce
Apply first response	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/0dcea846-04b4-4ffc-8c75-a35c991454b1
Assess nature of injury in emergency	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/b6d7afec-bee3-46e8-8651-c6b1f38d435d
Brief hospital staff	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/8dd866b9-ec50-4037-ba4e-bb56defc1bd2
Conduct physical examination in emergency	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/852e6830-f87c-4f35-b6d3-6aee31dc518c
Cope with blood	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Collaboration with AI developers and engineers	http://data.europa.eu/esco/skill/9a5b670b-81b5-4807-8db6-a5d5b8413f83
Employ specific paramedic techniques in out-of-hospital care	1	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/a48a4b0b-e092-4267-b8df-ee382446a2f4

Immobilise patients for emergency intervention	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/9d00803f-5dde-4803-8111-416ed174676f
Coordinate care	1	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/71480db1-a706-47f9-952f-bdc5036e3df3
Apply person-centred care	1	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/7a63f944-6948-4ae4-9c1f-d08e492535c9
Transport blood samples	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/24e09e11-49f4-4e65-86a9-d8179eb6f4ee
Empathise with the woman's family during and after pregnancy	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/3f13dda5-f504-4997-a595-f0d60719897c
Use chemical analysis equipment	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Basic programming and data analysis for healthcare	http://data.europa.eu/esco/skill/c3fb1757-a529-4336-8898-4e96cd99f95f
Work safely with chemicals	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Collaboration with AI developers and engineers	http://data.europa.eu/esco/skill/89d2bb53-67fc-4b9e-80c7-07b6c587bc0d
Advise on childbirth	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/dcf69ae9-a56e-4563-ad2c-c61dda8215f9
Advise on family planning	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/2f31126e-b6c9-4a20-8747-3b1eeb0ba426

Advise on pregnancies at risk	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/acd54bcb-4c69-4ee9-a27f-732aec62804d
Advise on pregnancy	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/49ba1b34-ae1a-4a6d-8d66-8f1f029d361d
Assess the course of breast-feeding period	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/4a8492b8-55ba-4ffa-b187-4b16d20bacc4
Assist on pregnancy abnormality	1	Augmentation	Data Handling / Collaboration	Human-AI Collaboration	Augmented Tasks	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/d562c400-953a-4620-a191-ffefb5c322b8
Care for the new-born infant	1	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/b2b31eeb-a6b6-49cf-aa4a-3307d13fbac2
Carry out treatment prescribed by doctors	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/7666e121-32a4-40c9-90a7-6dc024985475
Collect biological samples from patients	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Telemedicine and remote patient monitoring	http://data.europa.eu/esco/skill/1f6579b0-11e6-4eb2-82d0-5f2d27cc11d6
Conduct spontaneous child deliveries	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/ec04e800-4f4a-4c53-994d-316215daf9c6
Examine the new-born infant	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/1eb9469c-a11a-4595-be46-96ab15f1397a

Apply nursing care in long-term care	1	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/a28e8141-89ee-4b24-a3bb-1aebcc56c72d
Monitor pregnancy	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/6aa0f78f-2d68-432b-ab08-e3f504571076
Prescribe medication	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/8eab4e4f-03f8-4a66-a830-ec4e5db43253
Provide care for the mother during labour	1	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/bdee6867-b76a-4652-bd15-824fce9dc792
Provide education on family life	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/8762380a-893e-459c-a028-44122c94b737
Provide information on the effects of childbirth on sexuality	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/68f909bf-1b0f-45f4-bbea-b5edb6747740
Provide postnatal care	1	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/947f34a6-fb18-4b0a-9e89-5d38cbbc7abe
Provide pre-natal care	1	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unknown	No Match	http://data.europa.eu/esco/skill/2c108d0d-c489-4321-8bc4-992954a9faa4
Provide pregnancy termination care	1	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/b459f803-ddbf-4a90-9419-fb92acf12e14
Support informed consent	1	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/cb871f4d-d878-43f6-97a2-b334824146fd

Take emergency measures in pregnancy	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/be1b93a1-dda7-436e-b291-7fe28ae9a450
Adapt leadership styles in healthcare	1	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unknown	Matched with: Data privacy and cybersecurity practices in healthcare	http://data.europa.eu/esco/skill/79c012c7-4b09-497e-8152-e73e5d1d3384
Advise on healthy lifestyles	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Proficiency in using electronic health records (EHR)	http://data.europa.eu/esco/skill/78de3e5f-e3ea-4da2-aa09-3704d03ba622
Analyse quality of nurse care	1	Minimal Impact	Interpersonal / Cultural Sensitivity	Ethical Reasoning	Low Exposure	Unknown	Unknown	Unknown	Matched with: Knowledge of machine learning concepts	http://data.europa.eu/esco/skill/ae965e49-06f1-442f-87bf-e48fc1e1d8b6
Use photodynamic therapy for cancer	1	Moderate Automation	Information Management	Oversight	Mixed Exposure	Unknown	Unknown	Unknown	Matched with: Basic programming and data analysis for healthcare	http://data.europa.eu/esco/skill/e7be825a-1fba-4da1-ace9-d1ca8e7875ea