

# Artificial Intelligence (AI) and the Health Workforce

This survey is a part of a study done by the health division of the OECD to better understand the possible impacts of AI on the health workforce. We are collaborating with the World Medical Association (WMA) to distribute this survey to national medical associations in order to learn about their perceptions, involvement and readiness for the adoption of AI in medicine.

We would like you, **the president or chair or secretary General of the medical association** in your country to give your perspective by filling the survey.

We thank you for completing this questionnaire. Estimated time to complete the survey is about 20 minutes. We will appreciate if you can submit your response by 29th of September 2023.

Thank you!

\* Required

## Contact person

Please provide the name, affiliation and email address of the primary contact person for this questionnaire. The OECD can follow up with the identified contact person(s) if clarification is needed.

1. Full name \*

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2. Country or Region in which your organization is active \*

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3. Role\*

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4. Organization \*

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5. E-mail address\*

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## Definition

*Artificial Intelligence (AI) system:* An AI system is a machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations, or decisions influencing real or virtual environments. AI systems are designed to operate with varying levels of autonomy. [Source: Recommendation of the Council on Artificial Intelligence (OECD Legal Instruments. OECD/LEGAL/O449) 2019 (<https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0449#mainText>)].

# Perceptions

6. How much do you agree with the following statements?

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
The risks of AI in medicine do not justify the opportunities	0	0	0	0	0
The risks of AI in medicine are well understood, well communicated, and well managed	0	0	0	0	0
Policy and regulation should explicitly deal with the implications of AI on the health workforce	0	0	0	0	0
Governments are doing enough regarding the impact of AI on the health workforce	0	0	0	0	0
Many current AI projects in my country focus on improving health workforce productivity	0	0	0	0	0

Most current AI projects in my country give enough attention to health workforce risks and challenges

0	0	0	0	0
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I am worried about ethical issues that may arise from AI applications in healthcare

0	0	0	0	0
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Physicians should require AI applications to be thoroughly evaluated, ethically reviewed and formally authorized (like pharmaceuticals)

0	0	0	0	0
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AI projects impacting the medical workforce should be required to involve physicians from its initial stages

0	0	0	0	0
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More education is needed to prepare physicians to implement and use AI based tools in their clinical work

0	0	0	0	0
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7. Looking forward 10 years on the future of AI in medicine:

(Select the most appropriate answer) \*

- Q AI will have negligible impact on healthcare
- Q It will support physicians and empower them with more tools in their hands
- Q It will change medicine dramatically, but physicians' role will still be central
- Q It will change medicine dramatically including the role of physicians, which will be different
- Q It will replace most physicians

8. Grade the **opportunities** of implementing AI applications in healthcare by the likelihood of it to happen

	Not likely at all	Not likely	Somewhat likely	Likely	Very likely
AI tools will improve quality of care	0	0	0	0	0
AI tools will improve patients' experiences	0	0	0	0	0
AI tools will improve providers' experiences - reduce burden and burnout	0	0	0	0	0
AI tools for patients will take care of common complaints, thus will reduce physicians' workload	0	0	0	0	0
AI empowering Physicians' Assistants (PAs), and Nurse Practitioners (NPs) will help physicians to work in a higher level of practice	0	0	0	0	0
AI tools will improve empathy of health workers by reducing load and enabling them to have more time with patients	0	0	0	0	0

AI tools in  
healthcare are  
the main  
solution to  
health  
workforce  
shortage

0 0 0 0 0

AI tools will  
improve  
healthcare  
efficiency and  
reduce costs

0 0 0 0 0

AI tools will  
improve  
healthcare  
equity

0 0 0 0 0



9. Grade the **risks** of implementing AI in healthcare by the likelihood of it to happen

	Not likely at all	Unlikely	Somewhat likely	Likely	Very likely
AI will displace physicians from their positions	0	0	0	0	0
AI empowerment may lead to PAs and NPs taking the place of physicians	0	0	0	0	0
AI applications in healthcare may increase the burden on physicians	0	0	0	0	0
The use of AI applications will reduce physicians' autonomy	0	0	0	0	0
The use of AI applications will cause physicians to lose their clinical and decision-making skills and eventually will impair the next generation of medical education	0	0	0	0	0
The use of AI applications may increase physicians' liability if they use incorrect AI recommendations	0	0	0	0	0

Introducing AI into healthcare will raise new ethical issues that may complicate physicians' work	0	0	0	0	0
Introducing AI into routine clinical work may impair physicians' earning	0	0	0	0	0
The use of AI in healthcare will impair physicians' status as they will be seen as technicians that use smart tools	0	0	0	0	0
AI tools in healthcare may be expensive and thus could reduce accessibility of healthcare for all	0	0	0	0	0
Targeted medical education courses to improve physicians' skills to use AI tools, might not be accessible or affordable to all physicians	0	0	0	0	0
Many physicians won't use AI applications because of the risks above	0	0	0	0	0

10. If you have any more additional opportunities or risks that you may see in implementing AI applications in healthcare or if you have any comments based on the previous questions and statements, please write it here:

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11. What do you think should be the goals of developing AI applications in health **at the national level?**

Please rank the goals by importance - the most important first and the least important last. Move the position of the goals with the arrows on the right side. \*



Develop solutions that will reform healthcare services



Improve patients' experience



Improve quality of healthcare



Mitigate health workforce shortage



Improve healthcare efficiency and reduce costs



Reduce burden and burnout of healthcare providers

## Involvement

12. Is your organization involved in adoption of AI in health:  
(select the most appropriate answer) \*

Yes, we are involved

No, but we are planning to be involved soon

No, but we are planning to be involved in the future

No, we don't have plans to deal with AI in health for now

13. How is your organization (the medical association) involved in adoption of AI in health?

	Not in our scope	Consider to be involved	Minorly involved	Moderately involved	Deeply involved
Analyzing the possible impacts of AI in healthcare and raising them to the government	0	0	0	0	0
Influencing policy for data access	0	0	0	0	0
Influencing policy for quality assurance of data	0	0	0	0	0
Influencing policy for development of AI applications	0	0	0	0	0
Influencing regulation of the ministry of health (or its equivalent) on AI in healthcare	0	0	0	0	0
Influencing governance for responsible AI	0	0	0	0	0
Improving adoption of AI applications among health providers	0	0	0	0	0
Improving design of solutions by health innovators	0	0	0	0	0

Ensuring that the respect of medical ethics is guaranteed in the development of AI tools

0

0

0

0

0

14. If your organization is involved in the domain of AI in health in other ways or you would like to add a comment on this issue, please write it here:

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15. If your organization is involved in the domain of AI in health in any way, please describe briefly a concrete example:

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16. As a Medical Association, what are your concerns about a wide deployment and use of AI applications in health?  
(select all appropriate answers) \*

- The ability of all physicians to access and use AI tools, when they are available
- The impact on physicians' earning and reimbursement
- The need to increase the budget of the healthcare system to support implementations of AI tools and their consequences
- The need to improve digital literacy of physicians and to educate them to use AI tools
- Establish special programmes for those who have difficulties coping with technological evolution
- Adding the possible impacts of AI on physicians' work to the collective agreement
- Other: \_\_\_\_\_

## Readiness

17. From your perspective, the current status of implementation of AI projects in your country is:

(select the most appropriate answer, in a case that no option is suitable, please select other and elaborate) \*

Q There are currently no meaningful AI projects in use

Q There are some pilot projects in health organizations

Q There is one or more than one regional (cross organizations) pilot implementations

Q There are regional or organizational comprehensive implementations

Q There is a national implementation

Q There are some national comprehensive implementations

Q Other: \_\_\_\_\_

18. Does the design of AI solutions in your country consider stakeholder (health workforce) perspectives?  
(select the most appropriate answer)

Yes

Partially

No

Don't know



19. What are the main barriers to systematically and efficiently use of AI for health?

	No problem at all	Creates minor difficulties	Creates moderate difficulties	Creates Major difficulties	A huge obstacle
Lack of involvement of physicians in initiating projects	0	0	0	0	0
Barriers in accessing health data to train AI algorithms	0	0	0	0	0
Difficulties in training, testing, and validating AI algorithms for use by physicians	0	0	0	0	0
Difficulties in ability to update AI algorithms periodically based on new input data	0	0	0	0	0
Insufficient scale up of local projects across health facilities	0	0	0	0	0
Insufficient inter-operability in our healthcare system	0	0	0	0	0
Barriers to authorize healthcare AI tools	0	0	0	0	0

Insufficient digital literacy of decision makers	0	0	0	0	0
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Insufficient digital literacy of health workforce	0	0	0	0	0
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Insufficient health and digital literacy of patients and the public	0	0	0	0	0
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20. Would you like to add any other barriers to use AI for health?

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21. Would you like to add anything else regarding the impact of AI on the health workforce?

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## **The end**

We would like to thank you for the time that you invested in answering this questionnaire.