



# European Medical Students' Association

Association Européenne des Étudiants en Médecine

emsa-europe.eu | Rue Guimard 15, 1040 Brussels | info@emsa-europe.eu

---

---

This policy was adopted by the **34th EMSA Autumn** Assembly in **Porto (Portugal)** on **12th of October 2024**. Valid until: **12th of October 2028**

---

## Use of Artificial Intelligence in Clinical Practice

**Authors:** Ayşenaz Kahveci, Finn Fassbender, João Magalhães, Joanna Farnicka, Feray Ekin  
Cicek

---

*The European Medical Students' Association (EMSA) represents medical students across Europe. We envision a healthy and solidary Europe in which medical students actively promote health. EMSA empowers medical students to advocate health in all policies, excellence in medical research, interprofessional healthcare education and the protection of human rights across Europe.*

---

**EMSA. HEALTH. EUROPE. TOGETHER.**

Rue Guimard 15

1040 Brussels, Belgium

Tel : +32 2732 72 02

www.emsa-europe.eu

info@emsa-europe.eu

## **Problem statement**

The use of artificial intelligence (AI) in health is very broad. AI systems can support clinical decisions, assess triage, and be utilised in disease prevention, clinical research, or drug development (WHO, 2023). According to the OECD, implementing AI into healthcare and clinical practices can be of help to handle some of its major issues such as “a depleted workforce, future threats to public health, ageing populations, and increasing complexity of health due to multiple chronic conditions” (OECD, 2024). Like with many innovative technologies, AI in healthcare, if not regulated correctly, comes with risks which include “exacerbating digital and health inequities, increasing privacy risk, slowing scientific advancement, and hampering trust with the public”, as well as displacing certain job groups, changing their functions or making certain skills obsolete in time (OECD, 2024).

Firstly, the integration of AI into clinical practice raises several ethical considerations that must be addressed; specifically all four medical ethics principles including autonomy, beneficence, nonmaleficence, and justice (Farhud and Zokaei, 2021). Some concerns worth considering are patient information privacy, bias, informed consent, empathy, and sympathy.

- The use of AI in healthcare implicates the management of vast amounts of sensitive patient data. This means that any breach could potentially provoke severe consequences for patient trust and data integrity (Elendu et al., 2023). Also, responsible practices for collecting, storing, and utilising such data require well-developed techniques to ensure its anonymization and encryption. In the end, safeguarding patient information is crucial to any healthcare institution (Farhud and Zokaei, 2021).
- AI algorithms are in constant development, meaning they can still introduce and perpetuate biases and make incorrect alterations in prior healthcare data. They also might not always provide the most recent healthcare protocols and information, thus encouraging bad practices (Elendu et al., 2023).
- Informed consent may be challenging to establish in an AI healthcare provider scenario since this decision includes decision capacity and competency, documenting informed consent, and ethical disclosure. Patients should be able to ask all the questions they have to ensure they are confident to make such a decision (Farhud and Zokaei, 2021).
- It seems unlikely that patients will easily adapt to machine relations instead of the typical human interaction. Providing good healthcare involves empathy, kindness, and a

compassionate environment, and AI systems do not possess these human attributes (Farhud and Zokaei, 2021).

In addition to ethics, legal concerns are also worth mentioning. Current legal regulations in place and regulations that need further work in terms of AI in clinical practices are a big worry for the safety of such practices now and in the future. The EU Artificial Intelligence Act has stated that AI-containing medical products “might present risks not addressed by the essential health and safety requirements set out in the relevant Union harmonized legislation”, as these legislations were not made AI-specific and might not completely cover its capabilities. To what extent pre-existing regulations and laws will address AI-related concerns is a serious topic of discussion (da Silva et al., 2022). Medical device regulation, malpractice laws, human rights and anti-discrimination laws, laws of informed consent, and medical error liability rules are among other areas where the use of AI intersects with the law and requires further consideration (da Silva et al., 2022).

Trust is the next concern. In the healthcare domain, the integration of AI presents a dichotomy between transformative potential and the imperative of trust. The advent of AI challenges the foundational trust in healthcare systems, necessitating a nuanced approach to mitigate risks associated with data biases and algorithmic opacity (Quinn et al., 2021). Interdisciplinary collaboration emerges as crucial, involving AI technologists, medical professionals, and ethicists, alongside robust regulatory frameworks. This collective endeavour aims to address AI's multifaceted challenges, ensuring its alignment with healthcare's ethical standards (Quinn et al., 2021). The Assuring Autonomy International Programme (AAIP) exemplifies efforts towards the ethical integration and safety assurance of AI in high-stakes healthcare settings (York University, 2018).

In terms of medical education, the incorporation of AI -both for medical education purposes and the teaching of AI itself- there are many opinions and initiatives. Artificial intelligence in medical education curricula “is a transformative step that will shape the future of healthcare practitioners” and can ultimately equip the medical professionals of tomorrow with “enhanced diagnostic precision, personalized learning prospects, and heightened ethical awareness” (Naqvi et al., 2024).

The path forward requires a balanced approach, emphasising education, ethical vigilance, and regulatory adherence, to maintain trust as AI redefines healthcare paradigms.

## **Our view. Aim**

Medicine in its very nature is dealing with ambiguities. Each patient is unique. Each test is sensitive and specific only to a certain degree. Diagnosis and treatment are fraught with uncertainty and possible mistakes. It is not yet known if introducing another party into the process, AI, as an agent next to the physician and the patient, will reduce the complexities inherent in practising medicine or not, and that is what should be definitive for AI to be safe and trusted in healthcare.

EMSA is of the opinion that any such action needs to be evaluated carefully for its risks and benefits, as any innovation must ultimately have the improvement of patient outcomes at heart.

EMSA is of the opinion that adherence to the four bioethical principles of autonomy, beneficence, nonmaleficence, and justice is of the utmost importance.

EMSA is of the opinion that AI-knowledge and correct usage of it by medical professionals is key to the ever-digitalizing future of healthcare, and that this starts with its adequate inclusion in the higher education level.

With this policy paper, EMSA aims to increase awareness surrounding AI in clinical practice and encourage appropriate regulations from our stakeholders.

## **Recommendations**

EMSA calls on the European Parliament and European Commission to:

- establish clear and objective regulations and oversight mechanisms regarding the use of AI in healthcare;
- provide up-to-date guidelines regarding the safe use of AI in clinical practice;
- promote transparency and traceability of AI mechanisms;
- decide in detail who is to be held accountable when AI in healthcare causes harm;
- implement safeguards to ensure that data being given to AI for healthcare purposes does not violate their right to privacy of personal information;
- integrate AI-related malpractice into pre-existing malpractice laws.

EMSA calls on the World Health Organization to:

- promote AI literacy among the general population;

**EMSA . HEALTH . EUROPE . TOGETHER.**

---

- promote AI literacy among healthcare professionals and students;
- increase the reach of the WHO guidance for “Ethics and Governance of Artificial Intelligence for Health”;
- collaborate with governments to explore their capacities for AI integration into healthcare and provide them with the necessary guidance.

EMSA calls on Ministries of Health to:

- detect the amount of AI being adopted in healthcare;
- detect the factors that challenge the adoption of AI in healthcare;
- detect the amount of negative incidents in healthcare caused by the use of AI;
- create adequate financial support to
  - implement lawful AI policies into healthcare,
  - and enhance the accessibility to AI in clinical practices;
- oversee the congruence of AI usage in healthcare with the current guidelines.

EMSA calls on Medical Facilities to:

- increase AI literacy among staff by educating them about the current AI legislation and its extent in healthcare;
- implement AI into clinical practices while integrating healthcare professionals smoothly and keeping respect towards their skillsets;
- regularly surveil the concerns healthcare professionals might have about AI systems being used;
- increase staff capacity for AI integration into healthcare systems via regular training sessions;
- surveil staff capacity for AI periodically to ensure the smooth incorporation of AI into healthcare and the efficiency of these practices.

EMSA calls on Medical Faculties to:

- integrate the teaching of artificial intelligence into the medical curriculum;
- integrate the teaching of the use of AI in healthcare into medical curricula;
- aid in the research of AI in its facilities and share related opportunities, involving medical students in the subject;
- collaborate with the technological industries to stay updated with the most recent advances in the area and provide students with hands-on experience.

EMSA calls on EMSA and its FMOs to:

- educate and inform its members on the latest scientific advancements and best practices of AI in healthcare;

**EMSA . HEALTH . EUROPE . TOGETHER.**

- create spaces for the discussion of the dangers and benefits of AI in healthcare;
- educate and inform its members on the latest regulations of AI in healthcare.

## References

1. Da Silva, M., Horsley, T., Singh, D., Da Silva, E., Ly, V., Thomas, B., Daniel, R. C., Chagal-Feferkorn, K. A., Iantomasi, S., White, K., Kent, A., & Flood, C. M. (2022). Legal concerns in health-related Artificial Intelligence: A scoping review protocol. *Systematic Reviews*, 11(1). <https://doi.org/10.1186/s13643-022-01939-y>
2. Elendu, C., Amaechi, D. C., Elendu, T. C., Jingwa, K. A., Okoye, O. K., John Okah, M., Ladele, J. A., Farah, A. H., & Alimi, H. A. (2023). Ethical implications of AI and robotics in healthcare: A review. *Medicine*, 102(50), e36671. <https://doi.org/10.1097/MD.00000000000036671>
3. European Union. (2024). Regulation (EU) 2021/0106 of the European Parliament and of the Council of the European Union, laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) and amending certain union legislative acts. *Official Journal of the European Union*. <https://data.consilium.europa.eu/doc/document/ST-5662-2024-INIT/en/pdf>
4. Farhud, D. D., & Zokaei, S. (2021). Ethical Issues of Artificial Intelligence in Medicine and Healthcare. *Iranian journal of public health*, 50(11), i-v. <https://doi.org/10.18502/ijph.v50i11.7600>
5. Flynn, Jennifer, "Theory and Bioethics", *The Stanford Encyclopedia of Philosophy* (Winter 2022 Edition), Edward N. Zalta & Uri Nodelman (eds.), URL: <https://plato.stanford.edu/archives/win2022/entries/theory-bioethics>.
6. Naqvi, W. M., Sundus, H., Mishra, G., Muthukrishnan, R., & Kandakurti, P. K. (2024). AI in Medical Education Curriculum: The Future of Healthcare Learning. *European Journal of Therapeutics*, 30(2), e23-e25. <https://doi.org/10.58600/eurjther1995>.
7. OECD. (2024). AI in Health: Huge Potential, Huge Risks. OECD Publishing. Retrieved from <https://www.oecd.org/health/AI-in-health-huge-potential-huge-risks.pdf>
8. Quinn, T.P. et al. (2021) Trust and medical ai: The challenges we face and the expertise needed to overcome them, *Journal of the American Medical Informatics Association : JAMIA*. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7973477/>.
9. World Health Organization. (2023, October 19). WHO outlines considerations for regulation of artificial intelligence for health. <https://www.who.int/news/item/19-10-2023-who-outlines-considerations-for-regulation-of-artificial-intelligence-for-health>
10. World Health Organization (2023). Regulatory considerations on artificial intelligence for health. <https://iris.who.int/bitstream/handle/10665/373421/9789240078871-eng.pdf?sequence=1>

11. York University (2018) Who decides when AI is safe enough? Balancing the technical and ethical sides of assuring the safety of AI in the complex world of healthcare.

<https://features.york.ac.uk/who-decides-when-ai-is-safe-enough/index.html#group-section-lrUoNzbxNT>.