



## EFN Policy Statement on Sustainable Application of AI and Digitalisation

While being supportive for the digitalisation of healthcare ecosystems as a means of improving the quality and safety of patients care, as well as a means to improving frontline nurses' time for direct patient care (2024 [EFN Policy Statement on improving frontline nurses' time for direct patient care with digitalisation and responsible AI](#)), the EFN and the EFN Members are concerned with regards to the possible negative impacts of digitalisation and AI on the carbon footprint of healthcare ecosystems. For nurses, being aware of the connection between digitalisation, technology use, and climate impact is not only a matter of efficiency, but also an ethical responsibility, as climate and health are tightly connected. As nurses, we are responsible for the whole picture; therefore, when choosing digital solutions and AI, we must do so in a way that carefully considers potential negative effects on the climate and carbon footprint.

COVID-19 has put digital healthcare tools in the spotlight, highlighting how, for example, telehealth and virtual appointments could lead to carbon savings by reducing the need for travelling to reach the hospital, particularly in more rural areas (Thompson, 2023). As a consequence, digital healthcare tools are more frequently being associated with strategies to reach net-zero goals. While this argument has become more and more common among healthcare leaders, it fails to consider what may be the negative consequences associated with irresponsible healthcare digitalisation and AI.

Currently the healthcare sector is associated with nearly 5% of global greenhouse gases emissions (Alami et al., 2023), but if healthcare digitalisation continues at its current pace, this number is set to increase, unless careful planning is put in place. As it stands, the largest sources of carbon emissions and pollution related to healthcare digitalisation include:

- the emissions produced during the production of hardware tools, starting from the mining of rare-earth minerals, down all the way throughout the supply chain;
- the emissions produced because of the transfer and storage of data. The healthcare sector is responsible for generation of 30% of the world's data volume (Thomason, 2023), and in the EU this number is only set to increase as the [European Health Data Space \(EHDS\)](#) is set to enter into force in the upcoming years. Furthermore, also AI technologies, which are being labelled as a possible way to fill the gap left by health workforce shortages, are

driven by huge amounts of data (Thompson, 2021). The combination of all these factors is leading to increasingly greater carbon emissions related to healthcare data.

- cloud and big data services, which, despite appearing immaterial, depend on huge data centers, which consume energy and generate heat, requiring constant cooling.
- The emissions related to the generation of electronic waste, of which only between 10% and 40% are currently recycled, while the remainder becomes landfill waste, releasing dangerous toxins into the environment (Thompson, 2021).

Taking these factors into consideration shows why EU policymakers and healthcare leaders have a duty to carefully plan healthcare digitalisation in a way that its benefits do not exceed the benefits for the health outcomes of patients and citizens, and for the quality and safety of work of frontline nurses and allied healthcare professionals.

Therefore, the EFN calls on the European Institutions and Member States to:

1. Engage nurses at all stages in the planning of healthcare digitalisation – with their extensive frontline knowledge they can ensure that the digital tools, including AI, provide an added value to quality and safety of patients' care, thus avoiding unjustified climate impacts.
2. Invest in a highly resilient, domestically educated, highly qualified and competent nursing workforce, including in the digital and green skills, in line with the [Directive 2013/55/EU](#) and [updated Annex V](#). Responsible AI and healthcare tools may support frontline nurses and allied healthcare professionals in increasing the time for direct patients care. AI and digital solutions must support and contribute to increasing the quality and efficiency of nursing care, and it cannot be seen as a solution to the shortage of nurses.
3. Invest in supply chain efficiency initiatives, for which the Nordic countries can be taken as a good practice example (Thompson, 2021), ensuring the eHealth devices are produced, utilised, and disposed of in the most ethical ways.
4. Ensure that climate sustainability considerations are taken into account at all stages of the implementation phase of the European Health Data Space Directive and the [AI Act](#), including by engaging frontline nurses and nurses representatives through co-creation.
5. Achieve the development of trustworthy AI, through more reliable and lightweight algorithms, which would greatly reduce AI's energy and gas consumption, by supporting and investing in research that explores ways to reduce the energy consumption of AI, but also clouding, and digitalisation more broadly, as this will be key to the success of the twin digital and green transition in the EU and Europe.
6. Use renewable energy in healthcare units and data centres.
7. Recycle and dispose of electronic equipment's correctly to avoid heavy metal pollution.

8. Optimise servers and networks to reduce unnecessary energy consumption.
9. Extend the lifetime of digital devices with proper maintenance and reuse.
10. Use technology consciously, prioritising truly necessary solutions to avoid digital waste.

#### **Further readings:**

- Alami, H., Rivard, L., Lehoux, P., Ag Ahmed, M. A., Fortin, J. P., & Fleet, R. (2023). Integrating environmental considerations in digital health technology assessment and procurement: Stakeholders' perspectives. *Digital health*, 9, 20552076231219113. <https://doi.org/10.1177/20552076231219113>
- Thompson M. (2021). The environmentally impacts of digital health. *Digital health*, 7, 20552076211033421. <https://doi.org/10.1177/20552076211033421>
- Thomason J. (2024). Data, digital worlds, and the avatarization of health care. *Global Health Journal*, Volume 8, Issue 1, March 2024, Pages 1–3. <https://doi.org/10.1016/j.glohj.2024.02.003>
- EFN Policy Statement on improving frontline nurses' time for direct patient care with digitalisation and responsible AI (2024). Available at: <https://efn.eu/wp-content/uploads/2024/10/EFN-PS-improving-frontline-nurses-time-for-direct-patient-care-with-digitalisation-responsible-AI-Oct.-2024.pdf>
- EFN Policy Statement on EHDS (2023). Available at: <https://efn.eu/wp-content/uploads/2023/04/EFN-Policy-Statement-on-EHDS-April-2023.pdf>
- EFN Position Statement on Nurses Co-Designing Artificial Intelligence Tools (2021). Available at: <https://efn.eu/wp-content/uploads/EFN-PS-on-Nurses-CoDesigning-Artificial-Intelligence-Tools.pdf>
- EFN Policy Statement on Nurses Digital Competencies (2019). Available at: <https://efn.eu/wp-content/uploads/EFN-Policy-Statement-on-Nurses-DigitalCompetencies-Nov.2019.pdf>

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