

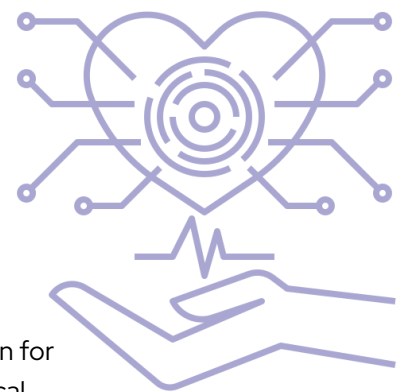
POLICY BRIEF

Reinforcing Cancer Care in Belgium through Artificial Intelligence

This policy brief assesses the potential of Artificial Intelligence in Belgian oncology, focusing on the transition gap between research and clinical practice, and outlines key recommendations across governance, data infrastructure, and regulatory frameworks to accelerate systemic adoption.

Artificial Intelligence (AI) could play a **pivotal role in modernizing healthcare**, in particular oncology, **by enhancing early detection, diagnosis, treatment personalization, patient monitoring, and research through improved efficiency and accuracy.**

Despite maturity in areas like neurology, chest imaging, mammography, and fracture detection, most AI (~60–80% in Europe) remains in testing/pilot phases, with only 20–40% in clinical use, and uptake may be even lower in Belgium. The country faces several key challenges (medical, technical, organisational, financial and regulatory) with regard to AI adoption for healthcare and oncology. These hinder the transition from research to clinical practice.



Methodology

This brief has been developed based on the diverse experiences of members of the Belgian Europe's Beating Cancer Plan (EBCP) Mirror Group thematic working group (TWG) on AI, as well as current evidence. The Belgian EBCP TWG on AI currently consists of 50 members, with representatives from hospitals, universities, cancer care organisations, patient advocacy and representative organisations, as well as public institutes and industry. Online group meetings were held to bring together these experts, and an online survey was conducted to identify priorities and gaps in the application of AI in oncology. The outcomes of the meetings and the survey have been synthesized by the TWG lead and members of the Cancer Centre's Implementation, Monitoring and Evaluation Team.

KEYWORDS

Artificial Intelligence
Oncology
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Regulation
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AUTHORSHIP

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GAPS & RECOMMENDATIONS

Resource limitations and economic barriers



RECOMMENDATION

- » **Sustainable investment** pathways for AI, based on real evidence of its potential for long-term savings and efficiency;
- » **Evaluate cost-benefit ratios** using proven pilots and measurable impacts for sustainability.

Absence of unified national AI strategy



RECOMMENDATION

- » Create a **centralized governance body** that ensures regional strategies are aligned and coherent. This body should allow for coordinating decision-making on adopting, regulating, reimbursing AI, integrating it with the national digital health infrastructure, and accessing the underlying data. Top-down guidance, structural support and a long-term vision are needed to realize the implementation of AI into the clinic.

Fragmented data frameworks



RECOMMENDATIONS

- » Identify Belgium's healthcare sector **priorities**, both for primary and secondary data usage.
- » Implement clearer **national structures for EHDS implementation**, including Health Data Access Bodies (HDABs) organized by data types (e.g., imaging, genomics), alongside **structured, standardized and synoptic reporting** (e.g., SNOMED level 5) for interoperability and AI model training/validation.

Insufficient training and skills



RECOMMENDATION

- » Provide **targeted education** on healthcare data usage (primary/secondary) and AI applications across public, professionals, researchers, data scientists, and bioinformaticians to bridge research and clinical practice.

Lack of regulatory sandboxes



RECOMMENDATIONS

- » Establish **national regulatory sandboxes** to safely test and validate AI technologies, following EU encouragement;
- » Create a national AI data platform connecting diagnostic, imaging, biomarker, molecular, and therapy outcome data;
- » Use sandboxes to build local expertise, conduct real-world validation, and define quality and safety requirements practice.