Interreg Danube Region

Co-funded by the European Union

DIGI4Care

Bridging the screening gap with AI

Policy Factsheet

Recommendations to support national decision making in introducing AI-supported diabetic retinopathy screening into patient pathways of diabetic patients, prepared by Semmelweis University

Key messages

1. **In Hungary, approximately 54% of diabetic patients over the age of 50 do not undergo the recommended at least annual fundus examination**
2. **The AI-supported pre-screening in a GP environment in the Hungarian pilot site demonstrated a 20% positive rate for DR, with reaching also patients who have not taken part in ophthalmology check-up in the past 3 years.**
3. **Providing diabetic patients with access to AI-supported DR screening at regularly visited points of care can improve screening uptake, provided that appropriate protocols and the necessary resources are in place.**

Learnings & Results

The DTP INTERREG project **DIGI4Care** aimed to reshape healthcare systems in the Danube Region by strategically integrating digital and AI solutions into patient pathways. Through **four transnational pilots** spanning from prevention to rehabilitation, the project tested and validated novel technologies to improve care quality and institutional efficiency.

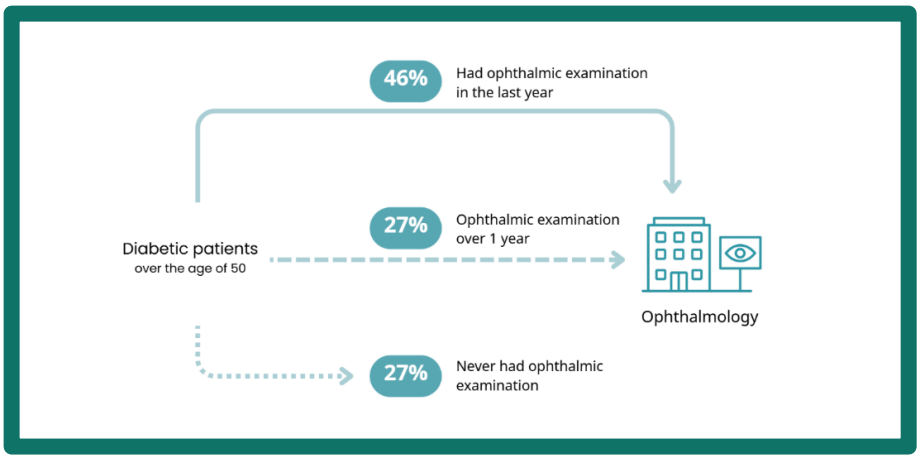
Within this framework, Pilot 1 focused on enhancing prevention by integrating AI-based non-mydriatic fundus camera screening for diabetic retinopathy into outpatient workflows as a common technology across participating countries. The Hungarian pilot site of Pilot 1 enrolled **85 diabetic patients** (average age 62.6 years) and confirmed the feasibility of AI based pre-screening outside of ophthalmology offices. While a traditional pupil-dilated exam takes 30-40 minutes, the fundus image capture and AI analysis required only **~10 minutes per patient**, plus 5-10 minutes patient education and appointment organisation The results showed a **20% positive rate** for DR. The ophthalmology supervision identified some false-positive cases and also identified additional conditions like AMD or hypertensive signs. The project proved that the workflow is feasible only outside regular office hours without the need of on-site ophthalmology specialists.

Main results achieved through the participation in the project include:

- **Increase of institutional capacity:** The project has significantly strengthened the institution's capacity as a **digital health knowledge hub**. By coordinating the pilot, the centre developed a specialized methodology for integrating AI into existing care models and established a robust professional **collaboration between primary care and specialized university department**.
- **Use of Digi4Care strategies and action plans:** Semmelweis University utilizes its **Institutional Action Plan** to integrate the project's data management protocols into its permanent procedures. This ensures that the specialized knowledge on AI-driven health data

handling becomes a mandatory reference for future research and development projects managed by the centre.

- **Uptake and use of Digi4Care solutions:** The institution directly applies the **Training Toolbox** and the **Knowledge Platform** in its educational activities. These solutions are used to train future health managers and to provide **evidence-based policy recommendations** to national decision-makers, bridging the gap between clinical innovation and system-level implementation.



Benefits for policymakers

Shifting screening to primary care may reach the 54% of patients currently falling through the cracks. Early detection through AI can contribute to avoiding severe vision impairment, which **reduces long-term medical and social costs**. Screening diabetic patients closer to routine diabetes care locations, such as GP practices and diabetology clinics, may reduce pressure on ophthalmology outpatient services. Integrating screening into these routine visits also ensures improved access by reducing travel and logistical barriers, particularly in rural areas. However, strengthening primary care and allocating the necessary resources are preconditions for implementation, alongside protocols, guidelines, and policy alignment.

Recommendations for policymakers

Introduce and provide diabetic retinopathy screening at the point of routine care, such as **GP practices** and **outpatient diabetology offices**, to effectively reach populations that do not attend traditional annual ophthalmology check-ups. Support this shift by establishing **telemedicine-based links** for remote expert consultation and ensuring **fast-track, structured access to specialist ophthalmology care** for patients requiring time-sensitive assessment or treatment.

Establish **supportive regulatory frameworks and financial incentives** to institutionalize the role of **artificial intelligence** in this field.

Expand the scope of fundus-based screening to include age-related macular degeneration and glaucoma alongside diabetic retinopathy.