

Coordinator: University of Copenhagen / Holbæk Hospital (UCPH-HOL)

Partners:

Danish Technical University (retinal imaging adaptation, AI-assisted quality control and biomarker workflow)

Heartery (app, workflow deployment, cloud/MLOps, patient-facing follow-up support).

Duration: 42 months | Total Person-Months: 249

Call: HORIZON-HLTH-2026-01-DISEASE-09

Budget: 3M EUR

Deadline: April 16, 2026

CardioRetina-Mobile – Project Summary

CardioRetina-Mobile is a Horizon Europe project aimed at improving early detection and management of cardiometabolic and eye diseases through community-based screening using smartphone-enabled retinal imaging. The project focuses on underserved populations who are often missed by traditional hospital-centered healthcare systems.

The Challenge

Chronic conditions such as type 2 diabetes, hypertension, and cardiovascular disease often occur together and require continuous monitoring. However, current screening pathways are fragmented, especially for vulnerable populations with limited access to specialist care. As a result, diseases like diabetic retinopathy and glaucoma are frequently detected too late.

The Solution

CardioRetina-Mobile introduces an integrated, community-based screening model that combines:

- Smartphone-based retinal imaging using a low-cost optical adapter
- AI-supported analysis of retinal images
- Digital workflows for screening, referral, and follow-up
- Deployment in pharmacies and non-hospital settings

This approach enables earlier detection of eye diseases and provides insights into broader cardiometabolic risk.

Key Innovations

The project advances current practice through:

- **Multi-spectral retinal imaging** using a smartphone attachment
- **AI-driven biomarker extraction**, including vascular and glaucoma indicators
- **Physics-informed analysis** of retinal tissue and blood oxygenation
- **Integrated digital platform** for workflow management and clinical decision support
- **Continuity-of-care system** linking screening to referral and follow-up

These innovations allow high-quality screening outside traditional clinical environments.

Implementation Approach

The project follows a hybrid effectiveness–implementation design:

- Deployment across multiple community sites in at least two countries
- Recruitment of 500+ participants from underserved populations
- Evaluation of real-world feasibility, safety, and effectiveness
- Focus on workflow integration, user adoption, and referral pathways

Data collected includes screening results, referral outcomes, and operational metrics to assess scalability.

Expected Results

The project will deliver:

- A **validated community screening model**
- A **field-ready digital and clinical workflow**
- Evidence on **reach, adoption, and referral effectiveness**
- A **replication toolkit** including training materials and implementation guides

These outputs are designed to support real-world adoption beyond the project.

Impact

CardioRetina-Mobile aims to:

- Improve early detection of eye and cardiometabolic diseases
- Increase access to screening for underserved populations
- Reduce delays in referral and treatment

- Support more efficient use of specialist healthcare resources

In the long term, the project will provide a scalable, cost-effective model for integrating screening into community settings across different healthcare systems.

Path to Adoption

A key focus is ensuring that results translate into practice. The project will produce:

- Implementation toolkits and training programs
- Policy recommendations and economic evaluations
- Site-readiness and deployment guidelines

This ensures that healthcare providers and policymakers can adopt the model under real-world conditions.