

IHI Call Days | Call 12

Advanced Digital Twin for Predictive Kidney Health Management

“Predict risk, protect life—together across Europe”

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Challenges and objectives

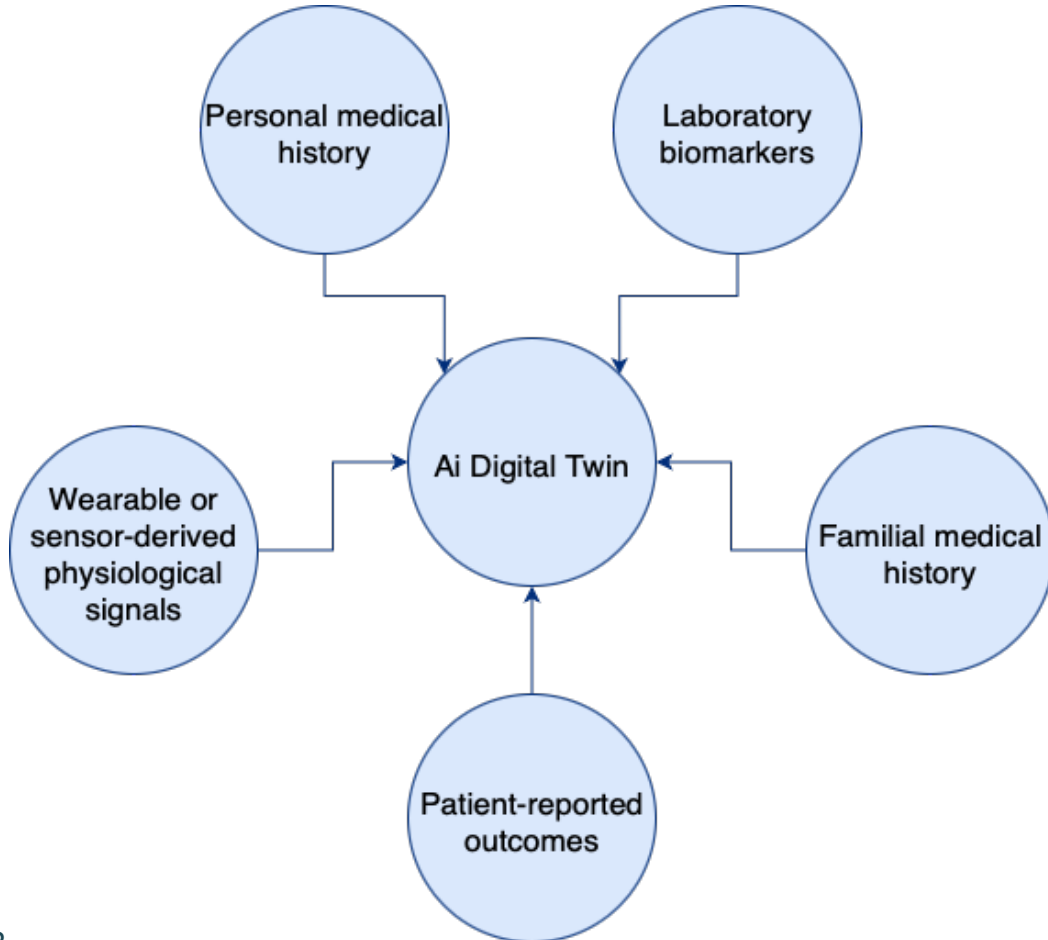


Over 75 millions europeans are affected with chronic Kidney diseases*.



Personalized, AI-driven digital twin that integrates clinical, laboratory, lifestyle, and wearable data

Our approach to solve the problem



- **Digital Twin Engine:** Builds **dynamic virtual models** of each patient's kidney health.
- **AI reasoning layer:** Uses **agentic LLMs** for multimodal learning and personalized insights.
- **Simulation module:** **Virtually tests interventions**, e.g., diet, medication, hydration.
- **Explainable AI interface:** Provides clear, **patient-specific recommendations**.

Is your project suitable for IHI?

- **Cross-sector by design:** Bridges AI, digital health, devices, diagnostics, and **clinical research**.
- **Public-private synergy:** Combines **academic excellence** with **industrial implementation**.
- **European leadership:** Boosts **EU competitiveness** in **predictive and ethical AI** health tech.
- **Patient focus:** Advances prevention and personalized **care**.



Outcomes and Impact

- **Expected results:**
 - Validated digital twin platform for CKD risk prediction.
 - Interoperable, secure infrastructure for EU-wide health data integration.
 - Clinically tested decision-support system for early intervention.
- **Impact for IHI:**
 - **Health impact:** Reduces hospitalizations, delays dialysis onset, and enhances patient quality of life.
 - **Industrial impact:** Strengthens EU competitiveness in AI-driven medtech.
 - **Societal impact:** Fosters trust in AI and empowers patients through personalized care.

Expertise and resources



- In Renal Care & Research We have:
 - Clinical and research nephrology expertise
 - SaMD & Regulatory Expertise: **Proven track record in developing SaMD and preparing MDR-compliant technical documentation.**
- We are looking for:
 - **Medtech, wearables & diagnostics** partners for multimodal data integration.
 - **Pharma/biotech** collaborators for treatment simulation and validation.
 - **Patient associations** for co-design and user engagement.

Thank you for your attention.

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