

# Image-Driven Oncology Can Innovation and Equity Go Hand in Hand?

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# Large burden of cancer on society

2.75 million  
diagnosed with  
cancer in 2022  
**Europe**  
accounts for  
**1/10<sup>th</sup>** of the  
**world's**  
population but  
**25%** of global  
cancer cases

**3.4 Million**  
**by 2040 in**  
**Europe**  
**If no actions**  
**taken**

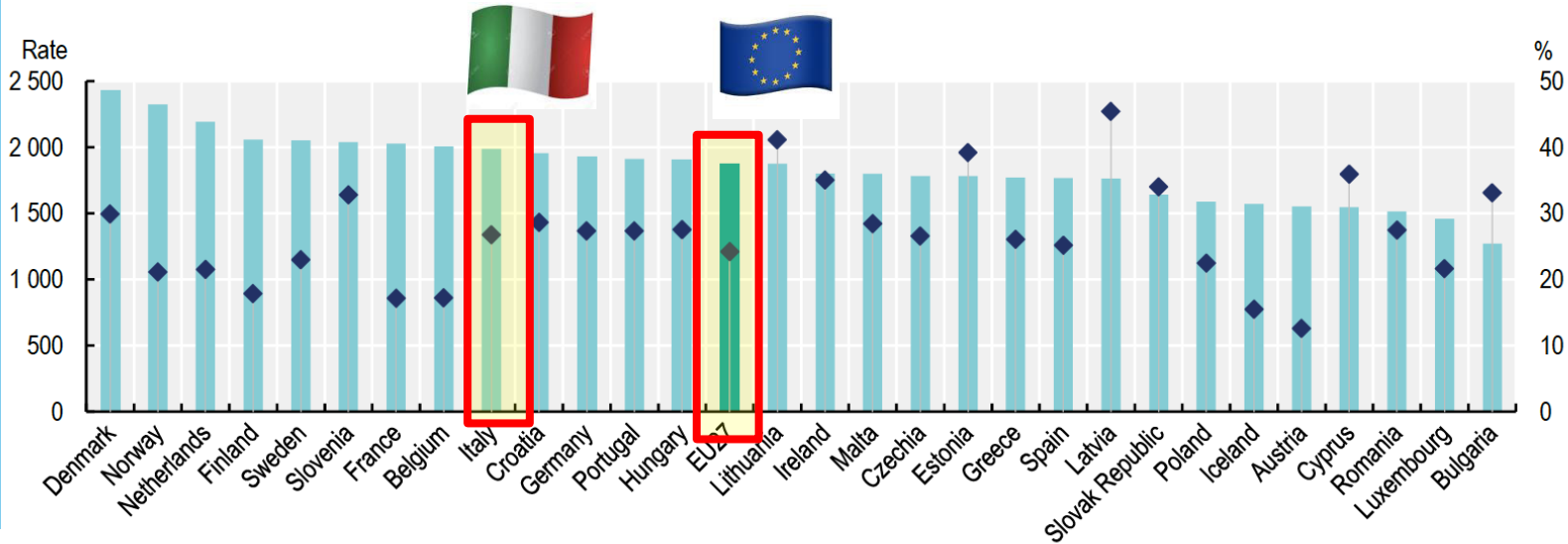
# Large burden of cancer on society

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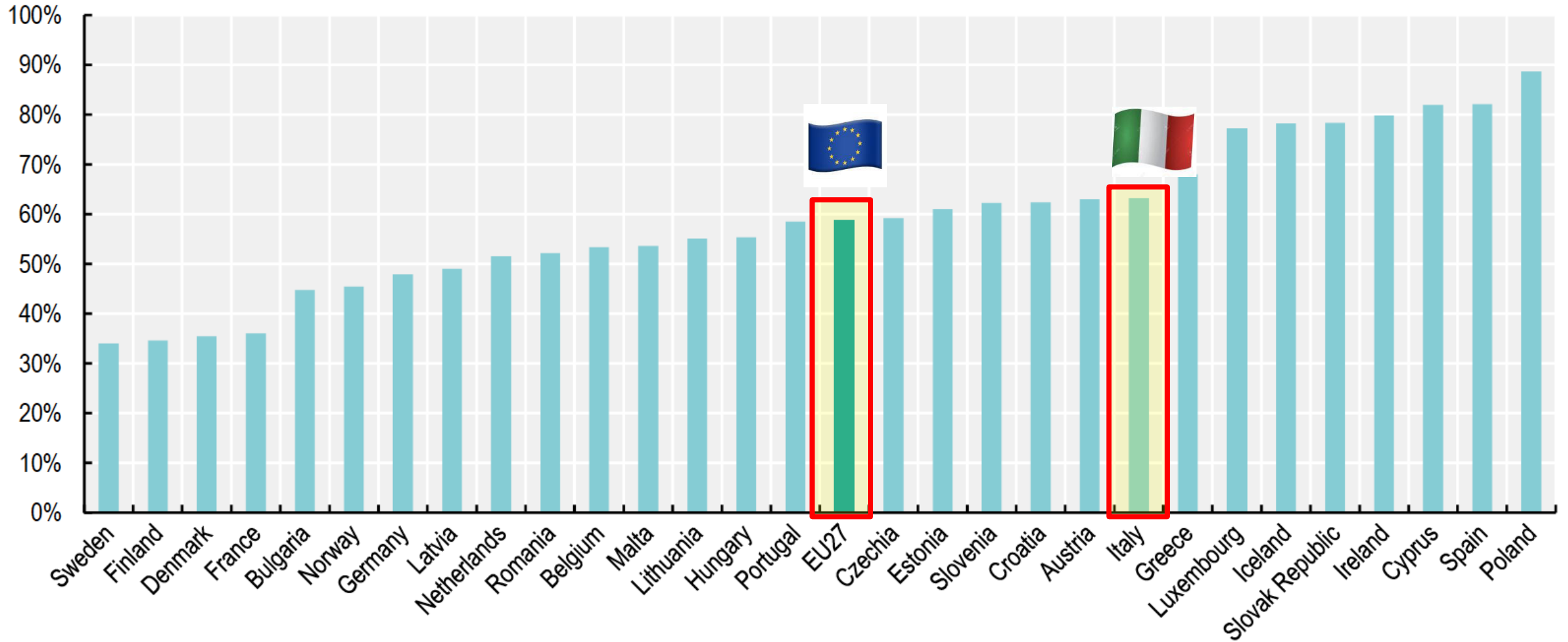
**3.4 Million by 2040 in Europe**  
If no actions taken

## prevalence

- over past 10 yrs: **+25% increase**
- 2000/100.000 living with cancer coming 5 yrs



# increase in **per-person-cancer-care-cost** by 2050: in EU **+60%**



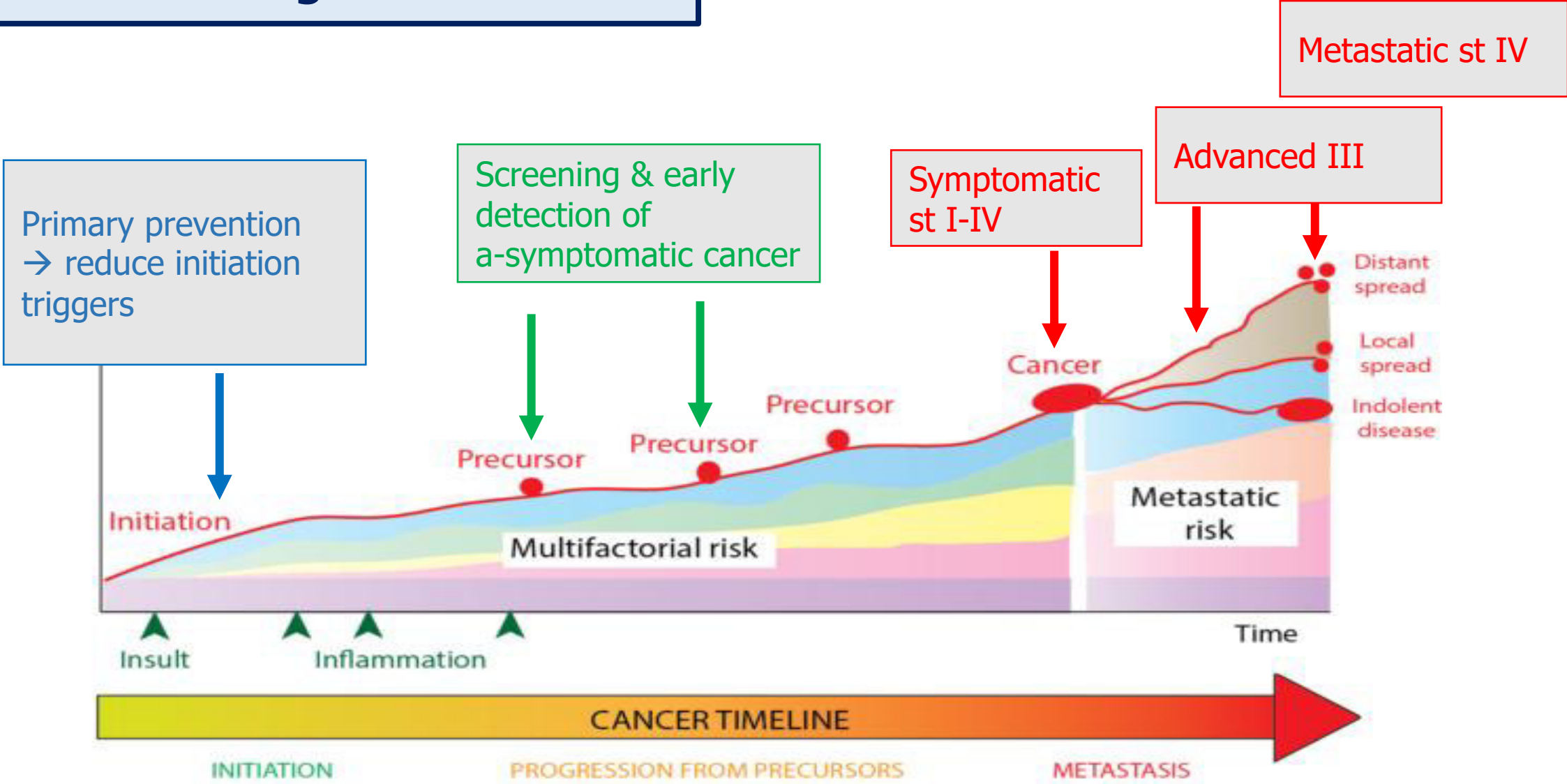
# Challenges in Healthcare

Rising  
healthcare  
costs

- aging population
- increasing implementation of new medical technologies, not always scaled back when ineffective
- inequity in access to screening & expert care
- increasing administrative burden
- persistent workforce shortages

**Need a more efficient, preventive  
and patient centered care**

# Where can we gain the most ?



Where can we gain the most?

## Digital Transformation of Healthcare

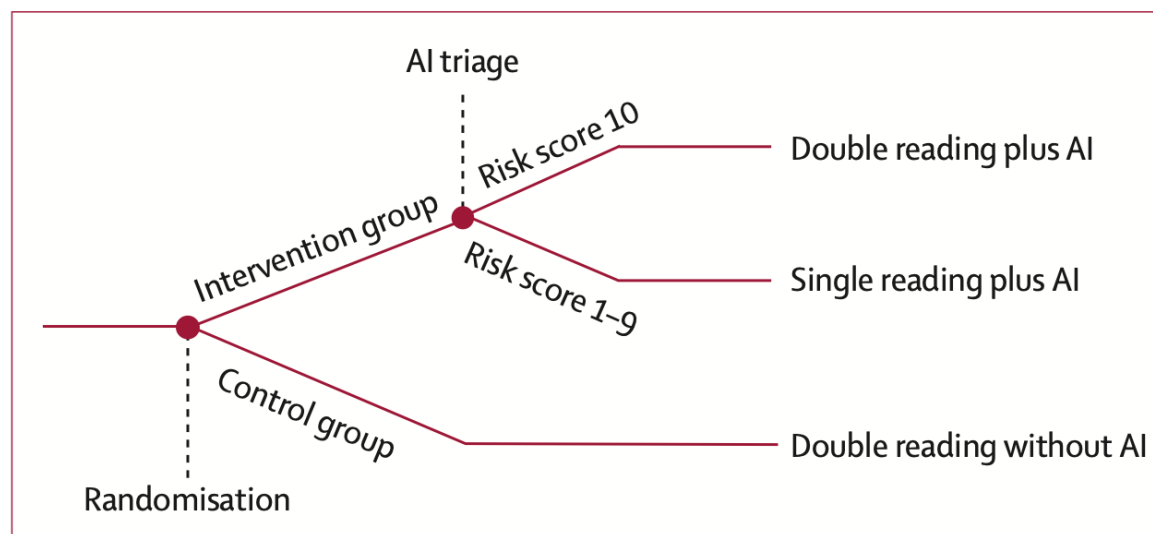
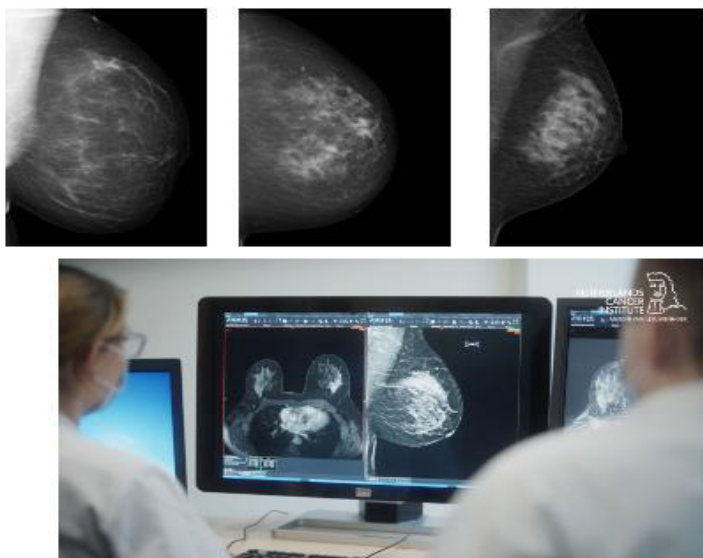
### **Transformative power of AI**

- Improve personalized treatment
- Enhance equity in care
- Improve access to screening
- Improve workflows & reduce workload

# The MASAI Trial

## AI supported breast cancer screening leads to

- 29% increase breast cancer detection
- no increase in recalls or FP
- reduces reading workload by almost half



Where can we gain the most?

Digital  
Transformation  
of Healthcare

**AI deployment in healthcare is a present demand  
....the gap is deployment at scale**

# Data & AI deployment

## AI deployment in healthcare

2015-25 **25x increase** in FDA-approved AI-tools n=221

**Only 5% of hospitals have deployed AI tools**

### Barriers

<b>Technological</b>	Data quality & interoperability
<b>Legal</b>	Regulations complex, privacy concerns
<b>Organizational</b>	Lack of strategic directions, resources, no end-user involvement
<b>Culture</b>	Job security fears, trust issues, low AI literacy

# EU's AI Apply strategy



## Apply AI Strategy

### sectoral flagships to boost AI adoption

- **healthcare**
- mobility, transport and automotive
- Robotics & manufacturing
- engineering and construction
- climate and environment
- energy
- agri-food
- defence, security and space
- electronic communications
- cultural, creative and media

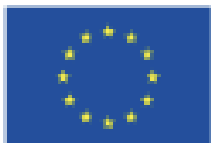


# COMPASS-AI

Community **O**f **M**ultidisciplinary **P**rofessionals **A**dvancing **S**afe & **S**uccessful **AI** in Clinical Practice

## Main objective

To accelerate the safe and effective deployment of AI in healthcare, with special attention to cancer care and health care delivery in remote areas

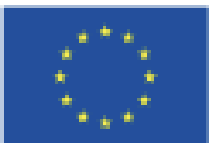


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# Unique points of COMPASS-AI

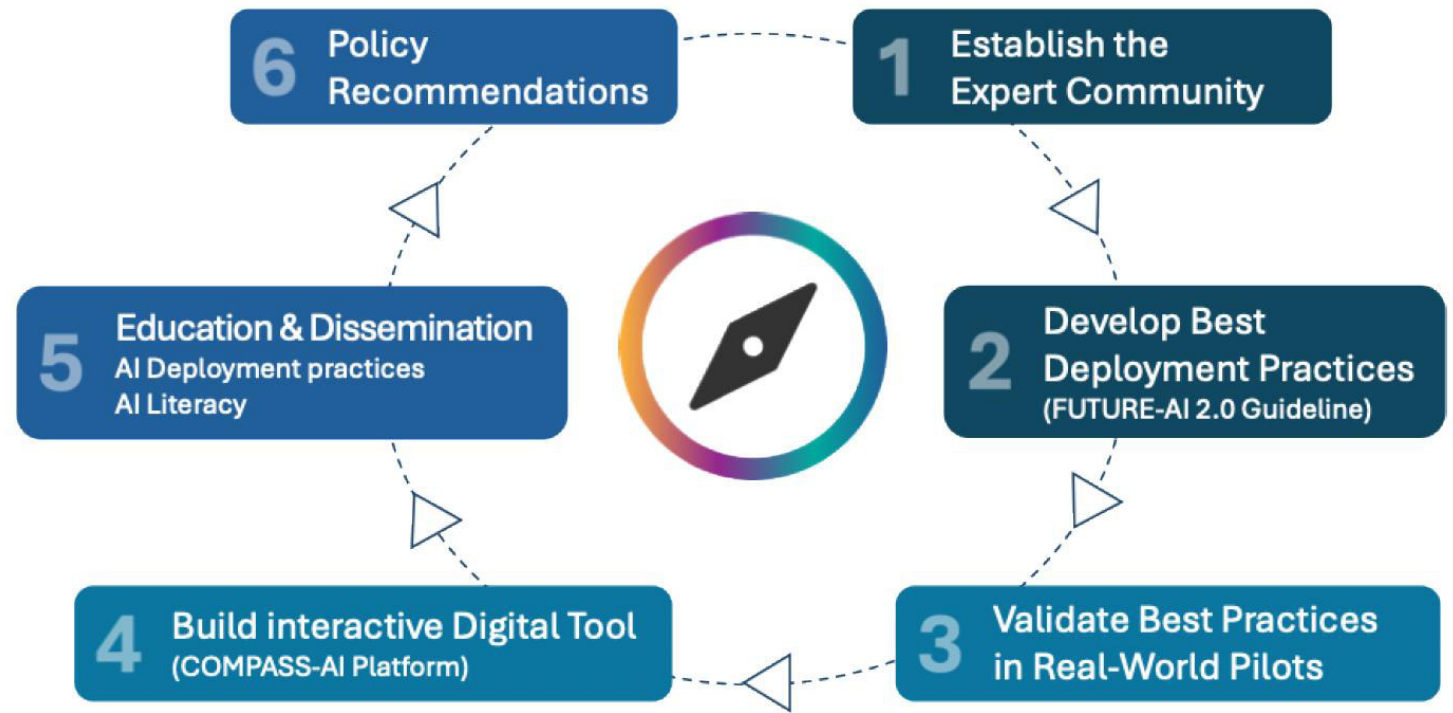
- Brings a **Multidisciplinary Approach** - integrating clinical, technical, regulatory, ethical, patient & policy perspectives
- Grounded in **Real-world Testing** - ensuring a broad coverage of the healthcare spectrum - **enabling true scalability across Europe**
- Deep alignment with **EU Apply AI strategy & related EU digital health legislation**



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# COMPASS-AI



- **Establish a Multidisciplinary Community of Experts**

will identify challenges, successes for safe & effective AI deployment

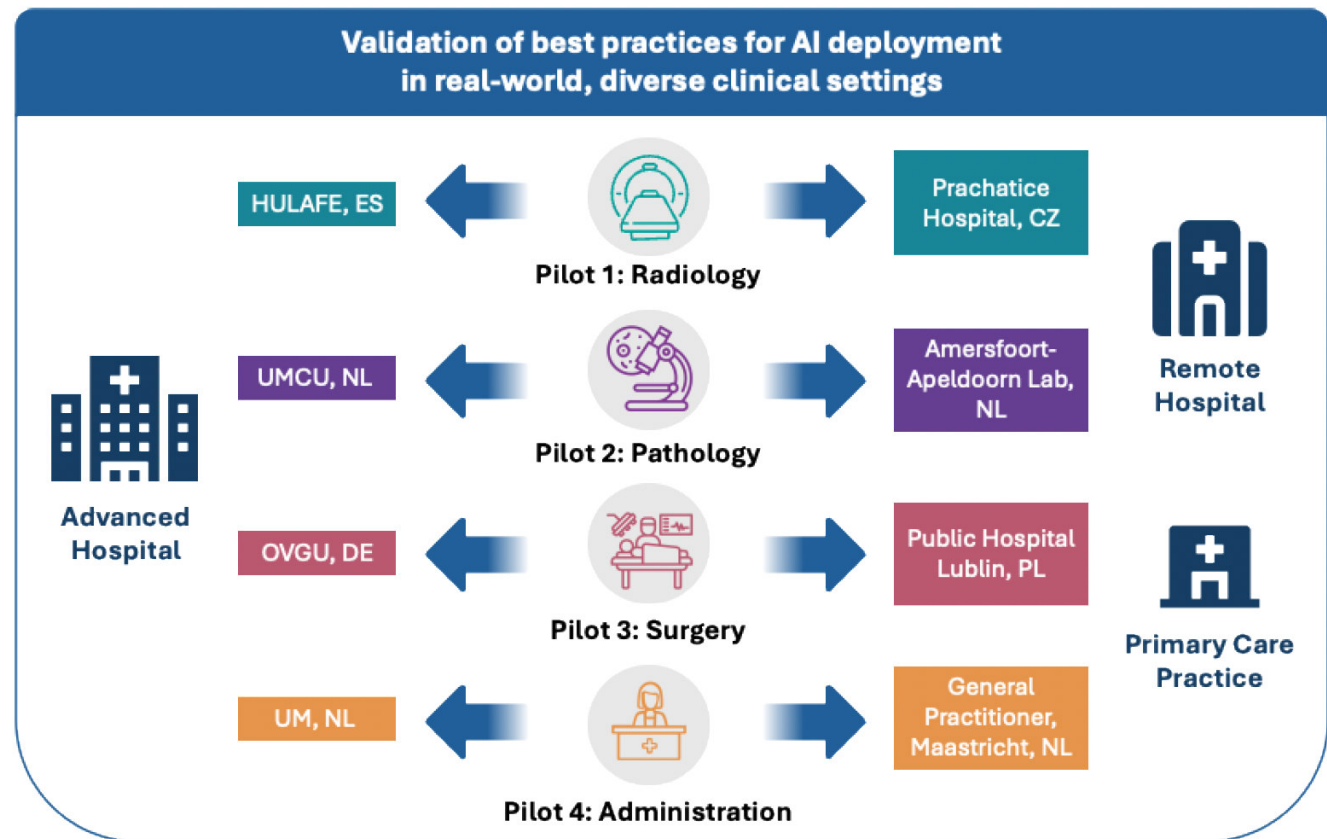
- **Develop Best deployment practice guidelines**

based on existing framework for trustworthy AI

6 pillars

# COMPASS-AI

6 pillars

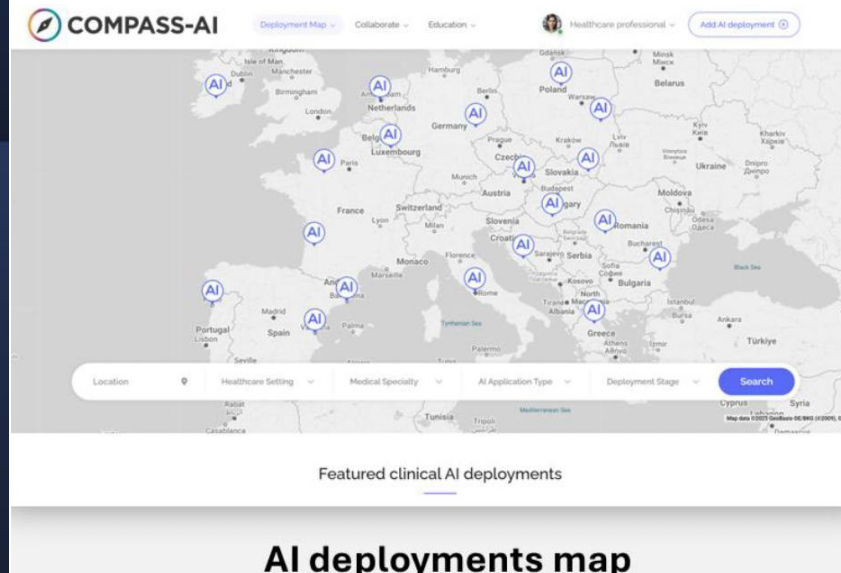
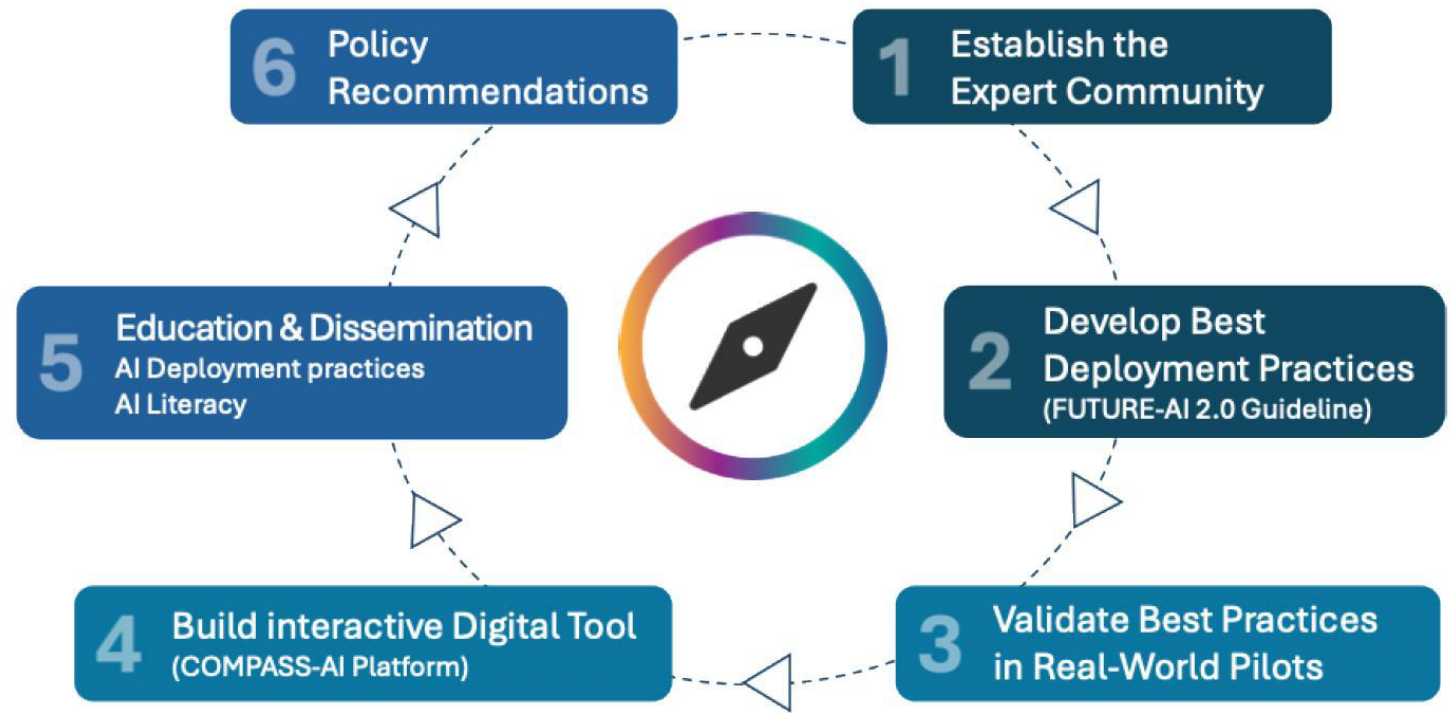


**Validate best practice guidelines in Real-World pilots in diverse clinical settings**

- radiology, pathology, surgery & primary care
- advanced & remote hospitals with basic facilities
- **local performance testing, local validation, post-deployment monitoring**

# COMPASS-AI

6 pillars



## Interactive Dashboard

Maps deployment centers  
collects & share experience

## Educational program

for end users, patients, public

- on best deployment practice
- AI literacy

# What we will deliver

- **Practical evidence-based, step-by-step AI deployment guidelines** for trustworthy AI adoption tailored to individual clinical settings
- **European Network of Expertise** on AI deployment in healthcare
- **EU-wide Interactive Dashboard** to continue collecting evidence & share best practices
- **EU reference sites** generating robust evidence for **safe, scalable & equitable adoption of AI in healthcare**
- **Policy recommendations** how to safely deploy and accelerate AI in healthcare aligned with EU Apply AI strategy, EHDS and EU digital health regulations

Prepare healthcare systems for full-scale application of AI



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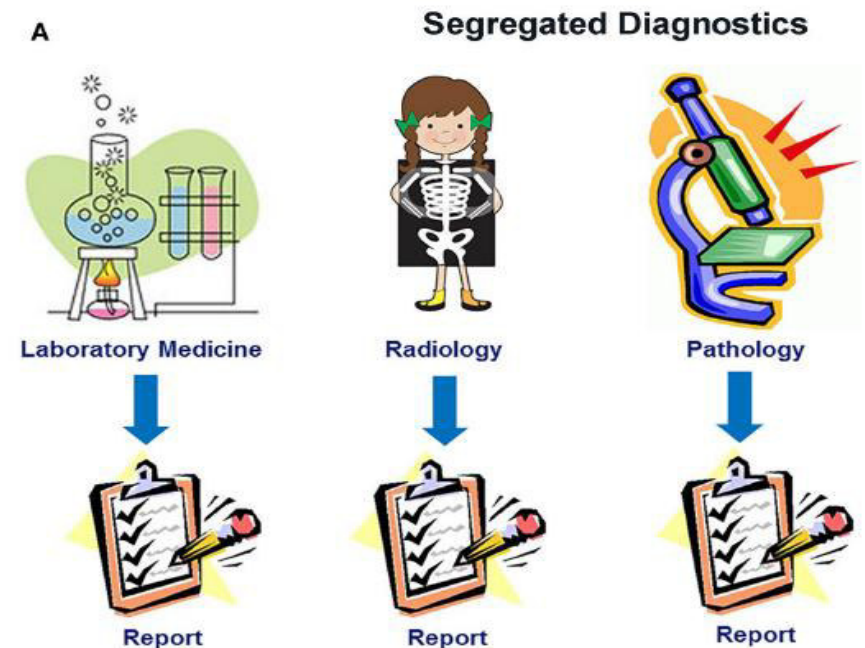
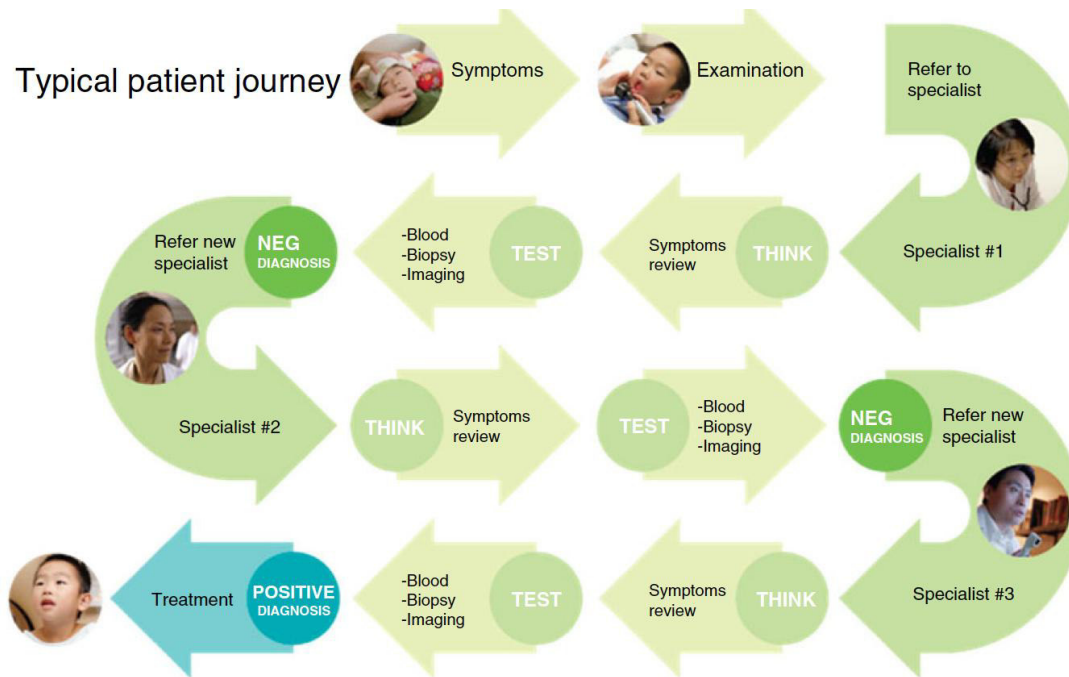
# Integrated Diagnostics – a paradigm shift...



- Diagnostic data **fused within AI framework**
- Generate **precise**, patient-specific insights
- More **efficient** use of resources

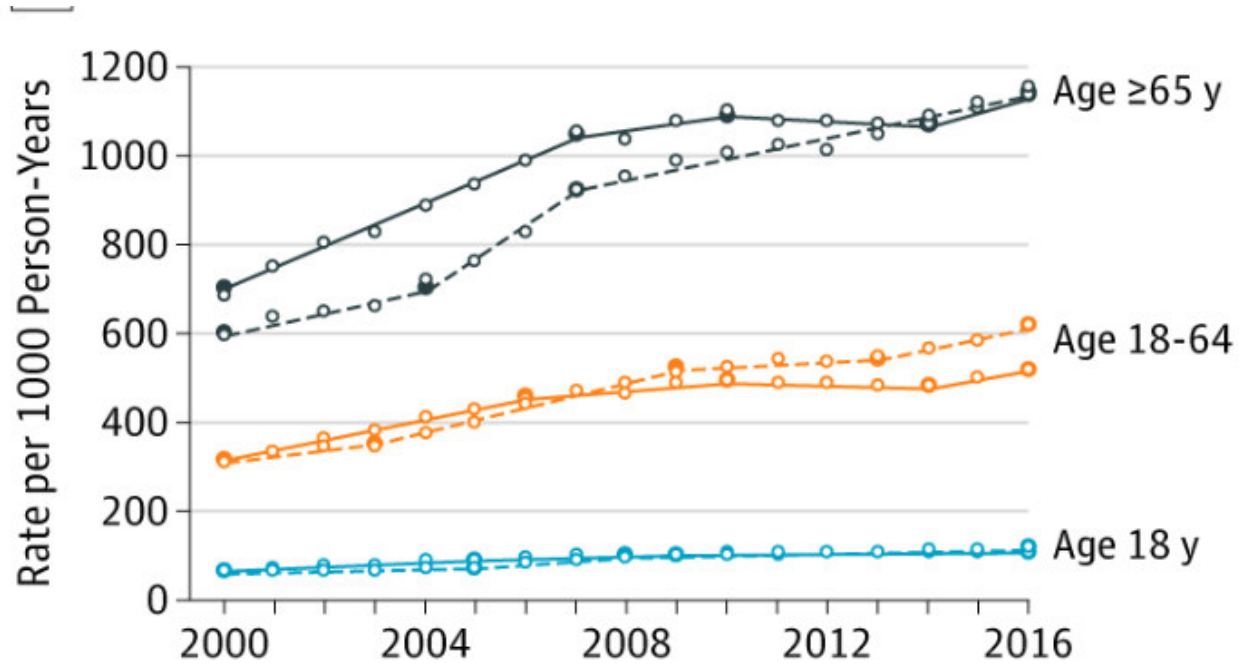
# Today's practice...

- **Segregated Diagnosis:** imaging, pathology, lab med operate in silos
- **Inefficiencies:** repeated tests – delays in diagnosis & treatment

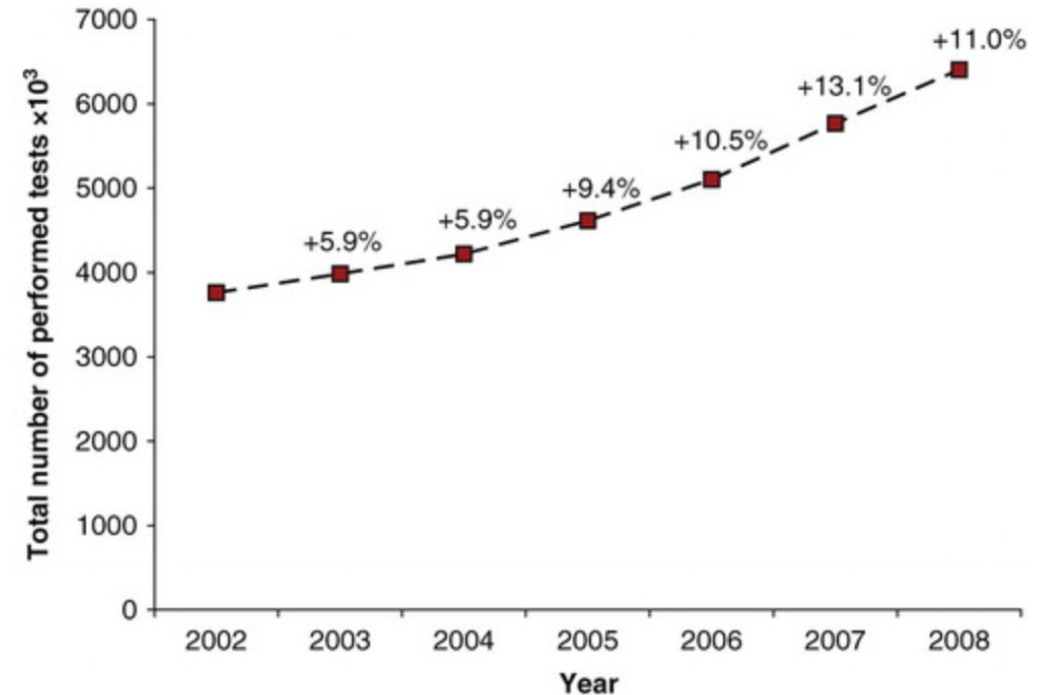


# Challenges in diagnostics

## Exponential growth of data



**medical imaging**



**laboratory tests**

# Integrated Diagnostics covers the entire patient care-pathway

	Early detection	Staging	Primary treatment	Treatment monitoring	Second treatment	Surveillance, recurrence
Conventional imaging	✓	✓	✓	✓		✓
Advanced imaging		✓	✓	✓	✓	✓
Smart biopsy		✓	✓	✓	✓	
Serial						
<b>Integrated diagnostics</b>	✓	✓	✓	✓	✓	✓
Image intervention	✓				✓	✓
Theranostics (RPT)			✓		✓	
Intraoperative imaging			✓		✓	

# Integrated Diagnostics

...no longer just a future concept  
it's a present demand



# Integrated Diagnostics

## Strategy for Collaborative Research

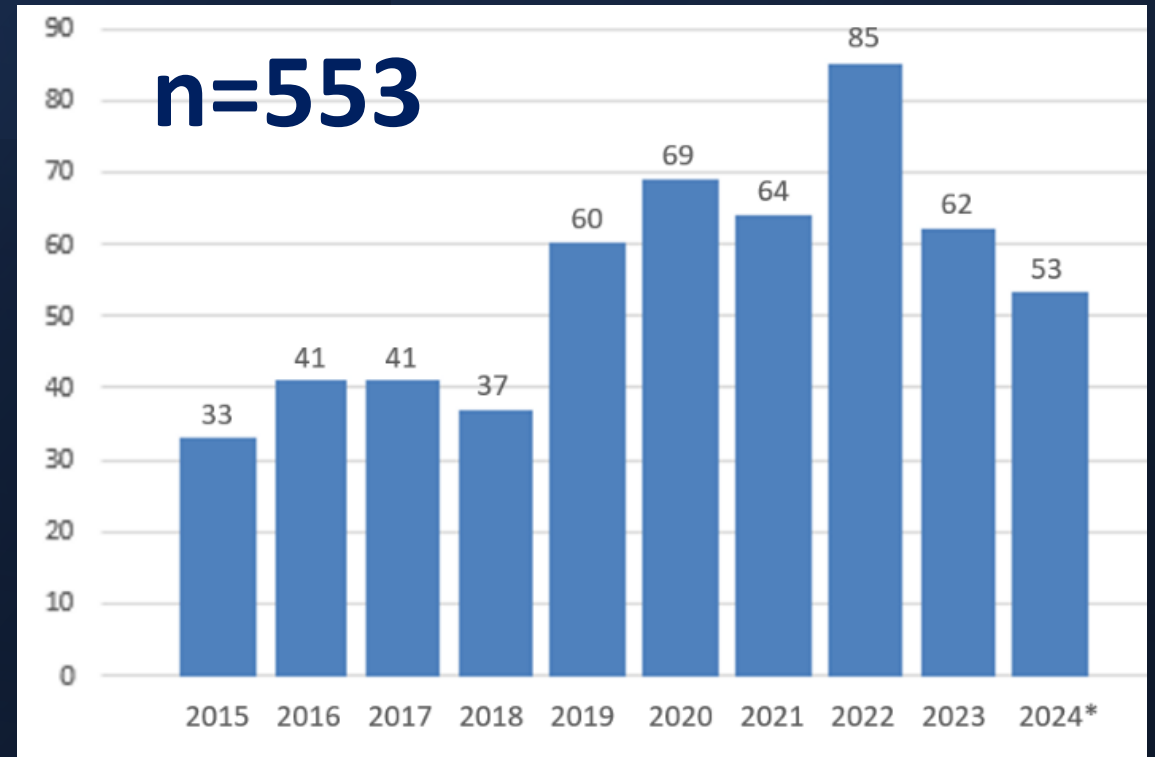
### **value of AI powered integrated diagnostics for patient & society**

- impact on quality of care & outcome
- cost-effectiveness

### move from fragmented to **coordinated multinational multidisciplinary projects public private partnership**

- Infrastructures
- multimodal AI tools

# EU-funded AI-health research projects 2015-2024



EU funding...

Multimodal AI

**Horizon 2020** health 2016-2020

**1–2% of topics on multimodal AI**

**Horizon Europe** health 2021-2024

**1–3% topics on multimodal AI**

**Innovative Health Initiative**

EC-Industry partnership

**5–10% topics on multimodal AI**

# EIBIR Strategic Research Agenda



EUROPEAN INSTITUTE  
FOR BIOMEDICAL  
IMAGING RESEARCH

**ESIR** EUROPEAN SOCIETY  
OF RADIOLOGY

**Artificial intelligence**

**Emerging technologies**

**Hybrid imaging**

**Integrated diagnostics**

**Quality & safety**

**Multidisciplinary research**

# EUROPEAN CANCER IMAGING INITIATIVE

Thursday, 6 February 2025

Albert Borschette  
Conference Centre  
Rue Froissart 36 - Brussels

#euCancerImaging



- **Flagship initiative of Europe's beating cancer plan**
- **Federated infrastructure: 60 million cancer images**
- To develop, validate and benchmark AI solutions

Genomic Data Infrastructure

1+MillionGenomes

Co-funded by  
the European Union

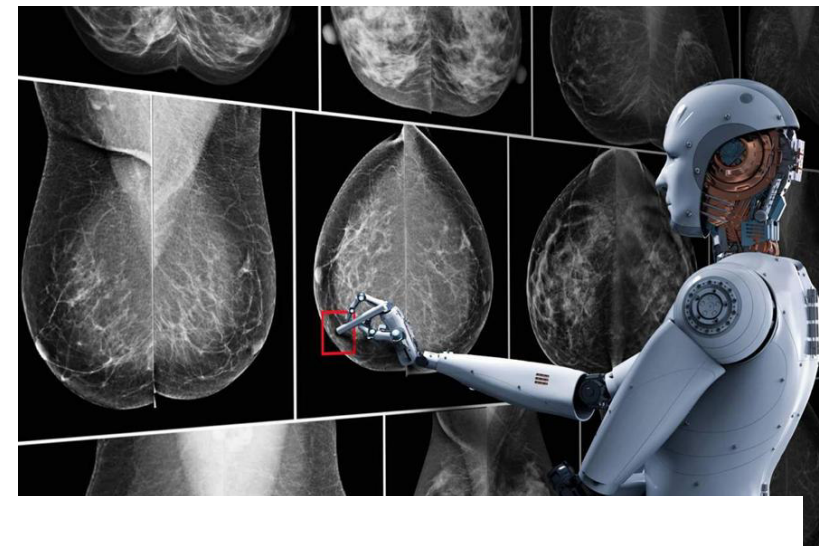


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EIR  
EUROPEAN INSTITUTE  
FOR BIOMEDICAL  
IMAGING RESEARCH



**Call: EU4H-2024-PJ-02**  
(EU4H Action Grants 2024)



## **BreastScan** aims to

- create a **large-scale, high-quality dataset from BC screening** for testing innovative AI tools for improving BC diagnosis and care
- **contributing to the Cancer Image Europe platform (EUCAIM)**

# Preventive Healthcare

## AI model to predict high polygenic risk for Cardiovasc disease & Breast ca

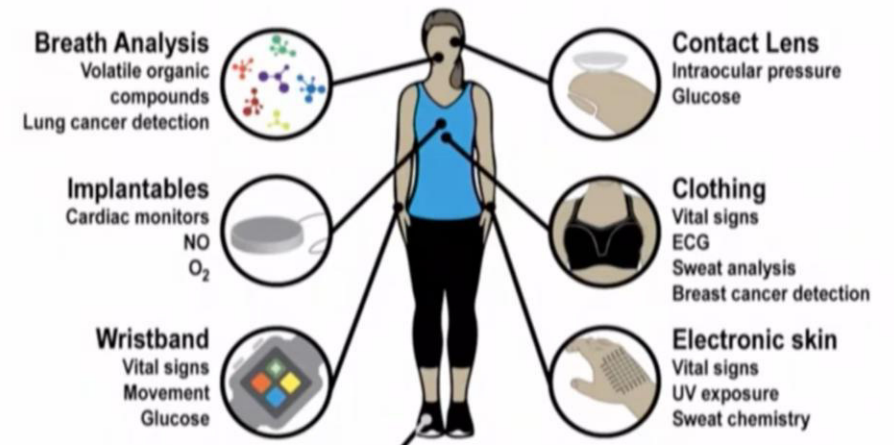
to assess whether awareness of high genetic risk will lead people to make healthier choices



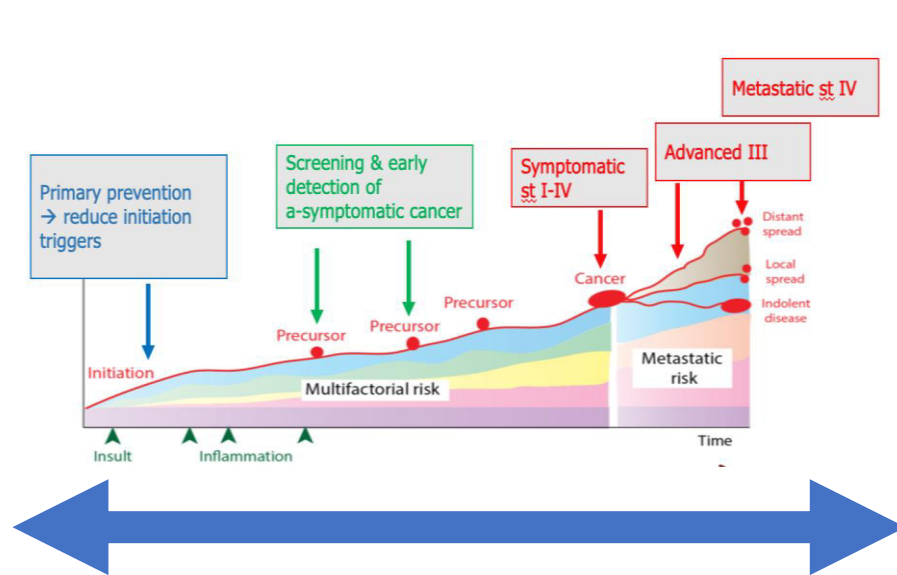
**INTERVENE**

We integrate AI and human genetics to develop tools for disease prevention, diagnosis, and personalised treatment.

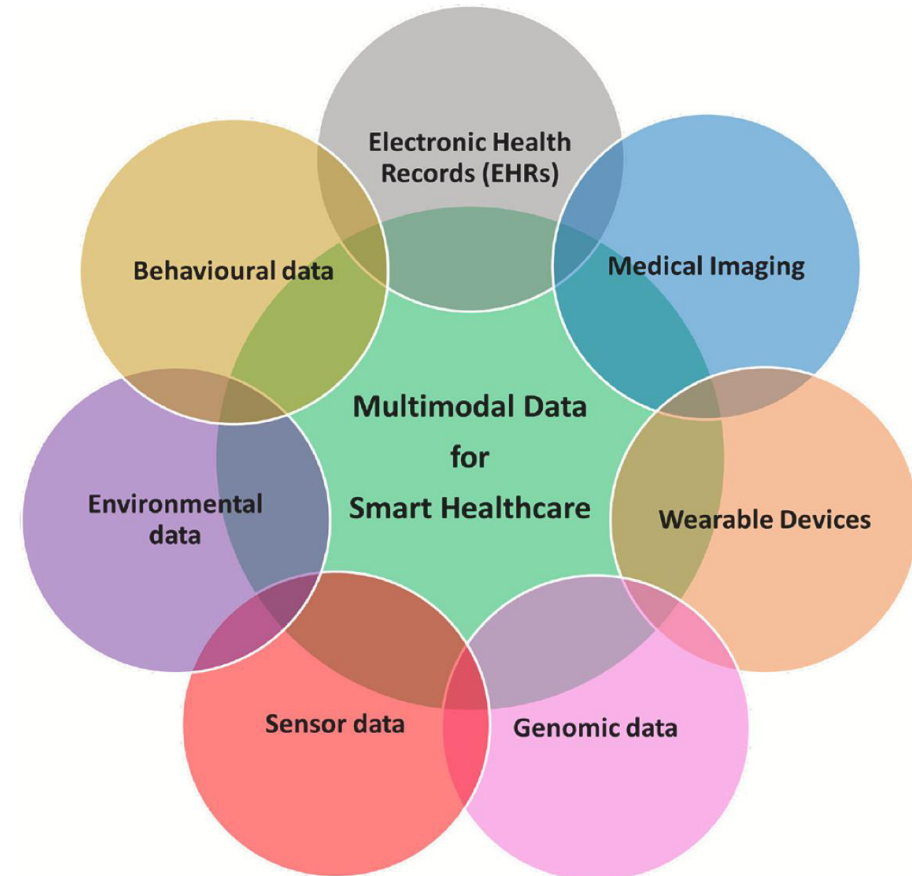
[Learn More](#)



# The transformative power of AI for preventive healthcare



- Expand our field
- Increase our expertise
- Scale our impact



## Digital Transformation of Healthcare

**a strategic necessity**

**a societal & leadership challenge, not just technical**

**strategic alliances** in science, healthcare,  
education & policy

**leadership will determine the speed & scale  
of impact**

Take Home

Image-Driven  
Oncology

**Can Innovation and Equity Go Hand in Hand?**

**YES**

**Digital transformation of healthcare  
will enhance equity across Europe**

Thank You

