GUIDE.MRD

Europe's Opportunity: Personalizing Cancer Follow-Up with ctDNA MRD Testing

Europe Has the Tools to Detect Cancer Relapse Earlier — Will We Use Them?

"After treatment, I felt like I was in the dark. No one followed up on the side effects or explained what was happening in my body. I just wanted clarity — what's going on and what comes next?"

- Colorectal Cancer Patient, Latvia

"My cancer is stabilized since 5 years. Primary tumor located in my lung is invisible and so every 6 months the CT-SCAN does not report anything new. Nevertheless I'm not relieved as how can I be sure I'm not facing a relapse ? A simple blood test link to NGS analysis could comfort me! "

- Metastatic Lung Cancer Patient, France

Context

Each year, around 2.7 million people in Europe are diagnosed with cancer and about 1.3 million die (EU/EC estimates). Despite progress in the EU, many relapses are detected too late, with serious consequences for patients, families, and health systems.

When detection comes too late, patients often require stronger treatments and experience more severe side effects. Families and carers are pulled away from work and daily life, and health systems face extra pressure from avoidable hospitalisations, emergency care, and higher overall costs. Acting earlier can change this: it helps people recover faster, protects families from the ripple effects of advanced illness, and allows health systems to deliver care more efficiently and sustainably.

Project Coordinator:

Prof. Dr. Klaus Pantel

Director, Institute of Tumor Biology, University Medical Center Hamburg-Eppendorf, Germany

innovative health initiative | Co-funded by the European Union | COCIR | efpia | EuropaBio | MedTech Europe | Vaccines Europe | LGC Clinical Diagnostics

This project is supported by the innovative Health Initiative Joint Undertaking (JU) under grant agreement No 101112066. The JU receives support from the European Union's Horizon Europe research and programme and EFPIA (including Vaccines Europe). MedTech Europe and LGC Clinical Diagnostics INC. Funded by European Union, the private members, and those contributing partners of the IHI JU. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the aforementioned parties. Neither of the aforementioned parties can be held responsible for them.

The Opportunity: A New Generation of Personalised Cancer Care

Minimal Residual Disease (MRD) testing offers a cost-effective way to improve outcomes. By monitoring treatment impact and detecting recurrence months earlier than existing methods, it can reduce over-treatment and the high costs of late-stage care — while giving patients and clinicians greater confidence in every decision.

Personalised medicine is about moving away from standardised pathways and tailoring care to the individual. New technologies are making this possible, including liquid biopsies, simple blood tests that can detect fragments of circulating tumour DNA (ctDNA) in the bloodstream.

Within this field, researchers are exploring how to detect MRD — the small number of cancer cells that may remain after treatment and can cause relapse. This emerging science suggests that, in some cancers and contexts, MRD testing may provide earlier warnings than traditional follow-up methods, such as imaging, or before symptoms appear.

For patients

- Detect recurrence much earlier than current methods
- Reduce unnecessary treatment and the burden of side effects
- Strengthen shared decision-making with clearer, personalised information
- Improve outcomes and quality of life

For clinicians

- More precise and timely guidance for follow-up
- Improved monitoring of treatment effectiveness
- Earlier notice of recurrence, enabling more proactive interventions
- Ability in some protocols to safely de-escalate treatment when side effects become difficult to tolerate — shifting to a medically supervised “stop, wait & watch” approach
- Confidence to **restart therapy promptly** when ctDNA-based monitoring shows disease progression

For health systems

- Significant reduction in unnecessary treatments
- More efficient use of resources, including in protocols where monitoring through simple blood tests replaces prolonged heavy therapy
- A cost-effective approach to achieving better outcomes
- Anticipated reduction in the price of ctDNA tests as they scale, with a favourable socio-economic effect: the cost of monitoring becomes lower than the cost of continued treatment — while also improving patient quality of life

Evidence and utility vary by tumour type and clinical context; integration should follow evolving evidence, guidance, and country contexts.

It is important to note: this is not about promoting one specific product or test. ctDNA-based MRD testing is a proof of concept for how Europe can prepare its health systems to responsibly adopt new innovations in early detection and monitoring.

Why Now

Europe’s Beating Cancer Plan and Cancer Mission have advanced prevention and treatment. However, follow-up care remains a blind spot: it is one-size-fits-all, unequal across Member States, and not sufficiently personalized.

Patients are asking for care that reflects their risks and realities. Clinicians want earlier, actionable signals. Health systems need tools to help target resources more efficiently.

Invitation to Policymakers

GUIDE.MRD is EU-funded work designed to support European patients and health systems.

Goal: Address the lack of personalised approaches for early detection of cancer relapse and therapy response, helping Europe deliver on the ambitions of the Beating Cancer Plan, the Cancer Mission, and EU4Health by enabling earlier detection, more personalised care, and more sustainable health systems for all.

We invite you to:

- Share your perspective on priorities and challenges.
- Join conversations on how ctDNA-based MRD testing can fit national and EU strategies.
- Explore opportunities to integrate this into cancer policy and care.

Let’s make personalized cancer follow-ups a European success story.

GUIDE.MRD

Europe's Partnership in Action

GUIDE.MRD is an EU-funded collaboration (Innovative Health Initiative, IHI) involving researchers, clinicians, patient organisations, diagnostics developers, pharmaceutical industries and policy experts across Europe (including InoMed, European Patients Forum, Lung Cancer Europe, Digestive Cancers Europe, and multiple academic/clinical partners).

The project is focused on creating the system conditions for adoption: regulatory, infrastructural, financial, and social pathways that allow innovative tools like ctDNA-based MRD testing for solid tumours to be integrated into real-world cancer care, where evidence and context support their use.

Momentum Already Underway

GUIDE.MRD has:

- Co-created an ideal pathway for MRD testing in cancer follow-up.
- Built a dynamic systems map to identify barriers and leverage points.
- Shared early insights at ASCO 2025 and is engaging patients, clinicians, and decision-makers across the EU.

Case stories from patients and clinical partners illustrate how follow-up could evolve: from generalized, imaging-focused routines to a more precise, molecular-based, patient-centered model — offering clearer guidance for follow-up, supporting better outcomes, more efficient use of resources, and improved quality of life.

Europe's Shared Investment in Smarter Cancer Care

GUIDE.MRD is part of Europe's own investment in smarter, people-centred cancer care. It aligns and advances:

- Europe's Beating Cancer Plan (earlier detection, better outcomes).
- The Cancer Mission (innovation for patients).
- EU4Health and Horizon Europe (health system sustainability and leadership in precision medicine).

This is about connecting science, systems, and citizens — turning Europe's investment into visible impact for patients.

What's needed now:

Policymakers can help turn this ambition into action by:

- Championing dialogue across Member States to remove barriers and support the integration of ctDNA-based MRD testing into cancer follow-up care.
- Embedding MRD within national cancer control and research strategies, ensuring equitable access across Europe.
- Supporting data and evidence generation to inform future guidance and reimbursement decisions.
- Engaging with GUIDE.MRD as a platform to co-create solutions, share national insights, and align European efforts.

A Future Within Reach
(If Evidence and Policy Align)

TODAY

Standardised follow-up, late detection, unequal access.

TOMORROW

More personalised monitoring, earlier intervention where indicated, reduced overtreatment where risk is low; stronger patient trust.

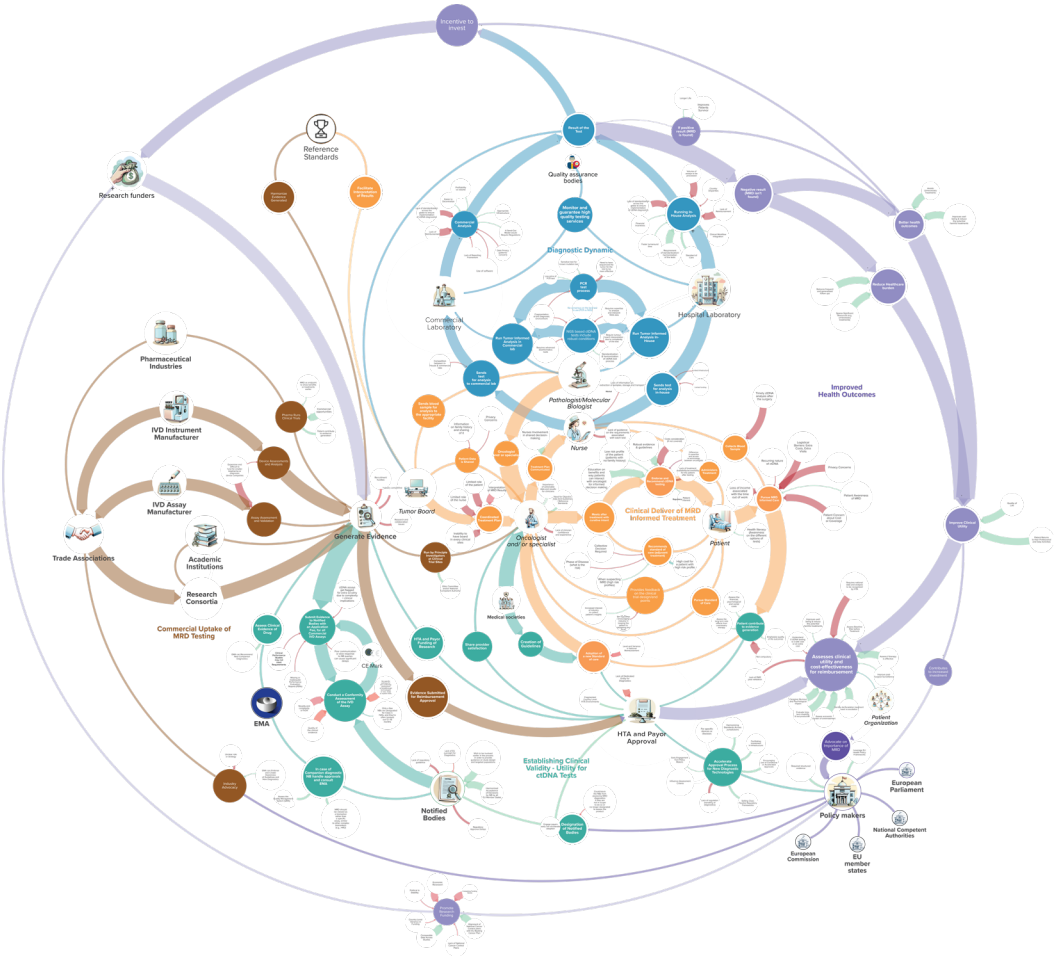
This is the future GUIDE.MRD is helping Europe prepare for.

What's Holding Back Adoption, and How Progress Can Accelerate

Challenges remain:

- Regulatory expectations remain fragmented
- Reimbursement frameworks differ between countries
- Clinical guidelines are evolving across tumour types and countries

GUIDE.MRD's system map shows how the different parts of healthcare — doctors, labs, evidence, regulations, business models, and policies — interact and shape each other. Progress in one area, such as evidence or reimbursement, can accelerate adoption; gaps in another can slow it down. These reinforcing or blocking loops reveal where alignment is needed to build confidence and enable responsible uptake across Europe.



Conclusion: A Shared European Opportunity

GUIDE.MRD is about more than one innovation or one test, it's about preparing Europe's health systems for a new generation of personalised tools that can improve outcomes for patients and make care more efficient and cost-effective.

As an EU-funded initiative aligned with the Beating Cancer Plan, the Cancer Mission, and EU4Health, GUIDE.MRD offers policymakers a concrete opportunity to shape smarter, earlier, and more equitable cancer follow-up.

We invite you to take part in this European effort, by joining the upcoming exchanges, with MEPS, EU institutions, supporting dialogue with the EMA and national authorities to accelerate integration and reimbursement, and bringing this conversation into your own national or regional cancer strategies.

innovative health initiative

Co-funded by the European Union

COCIR Advancing healthcare · efpia · EuropaBio · MedTech Europe from diagnosis to cure · Vaccines Europe An industry for healthy lives · LGC Clinical Diagnostics

This project is supported by the innovative Health Initiative Joint Undertaking (JU) under grant agreement No 101112066. The JU receives support from the European Union's Horizon Europe research and programme and EFPIA (including Vaccines Europe). MedTech Europe and LGC Clinical Diagnostics INC. Funded by European Union, the private members, and those contributing partners of the IHI JU. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the aforementioned parties. Neither of the aforementioned parties can be held responsible for them.