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DATA-CAN
The Health Data Research Hub for Cancer

QUEEN'S UNIVERSITY BELFAST

Groundshot: a pan-European, patient-centered, and data-driven approach to tackling cancer : a *Lancet Oncology* Commission

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OECI Oncology Days Paris 14th July 2023

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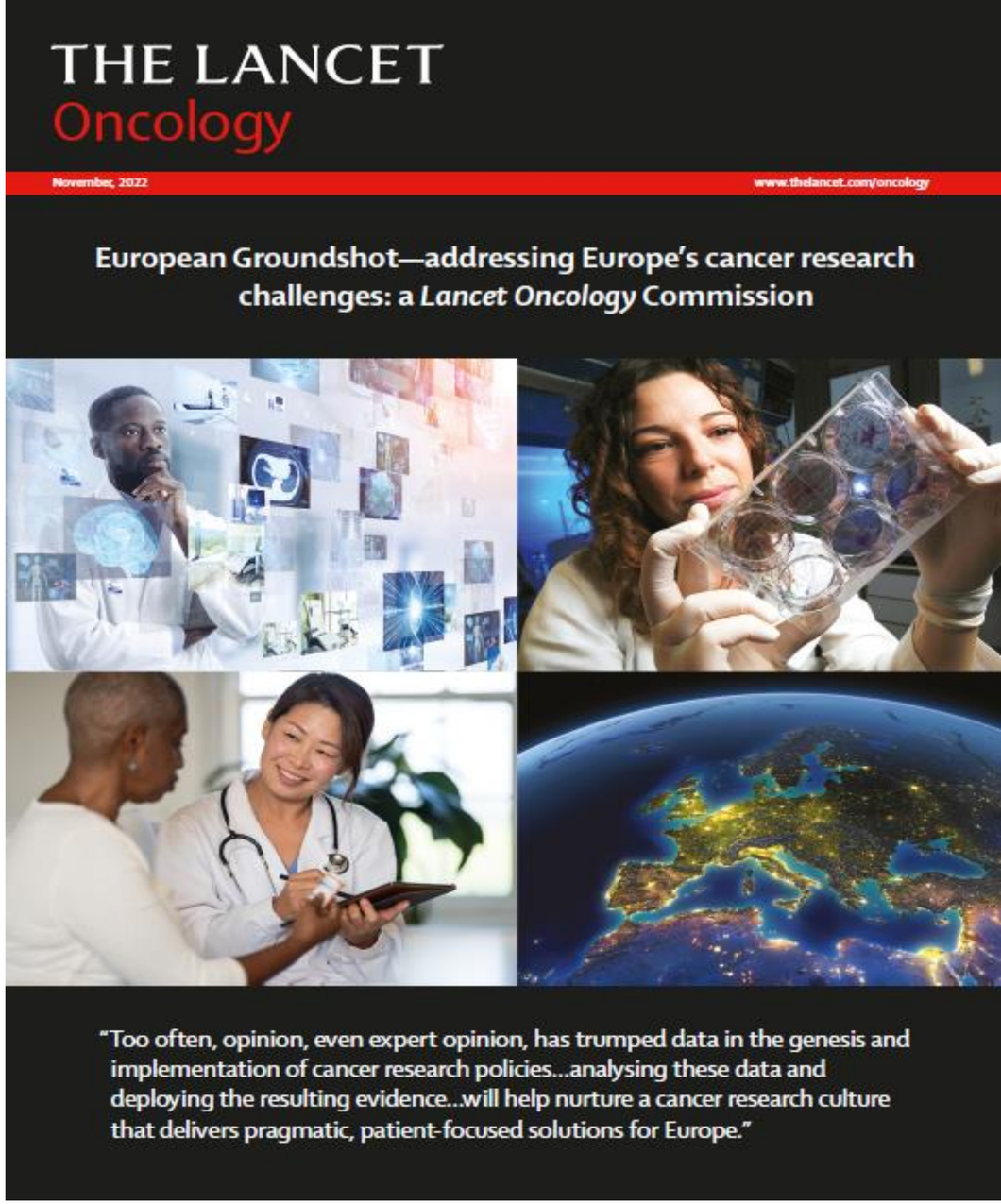
Beating Cancer: The Need for Action

- Europe is facing a **cancer crisis**
  - **COVID-19 pandemic** and subsequent **national lockdowns**
  - the **Russian Invasion** of Ukraine
  - The global **economic downturn**
- We need to **Act Now**
- Critically **challenge today's efforts** and **how we might do better** in the future.
- **Data into intelligence** informing **12 Recommendations.**
- **Call for Action: Reimagine cancer research and its implementation across Europe**
- Addressing the realities **"on the ground"**



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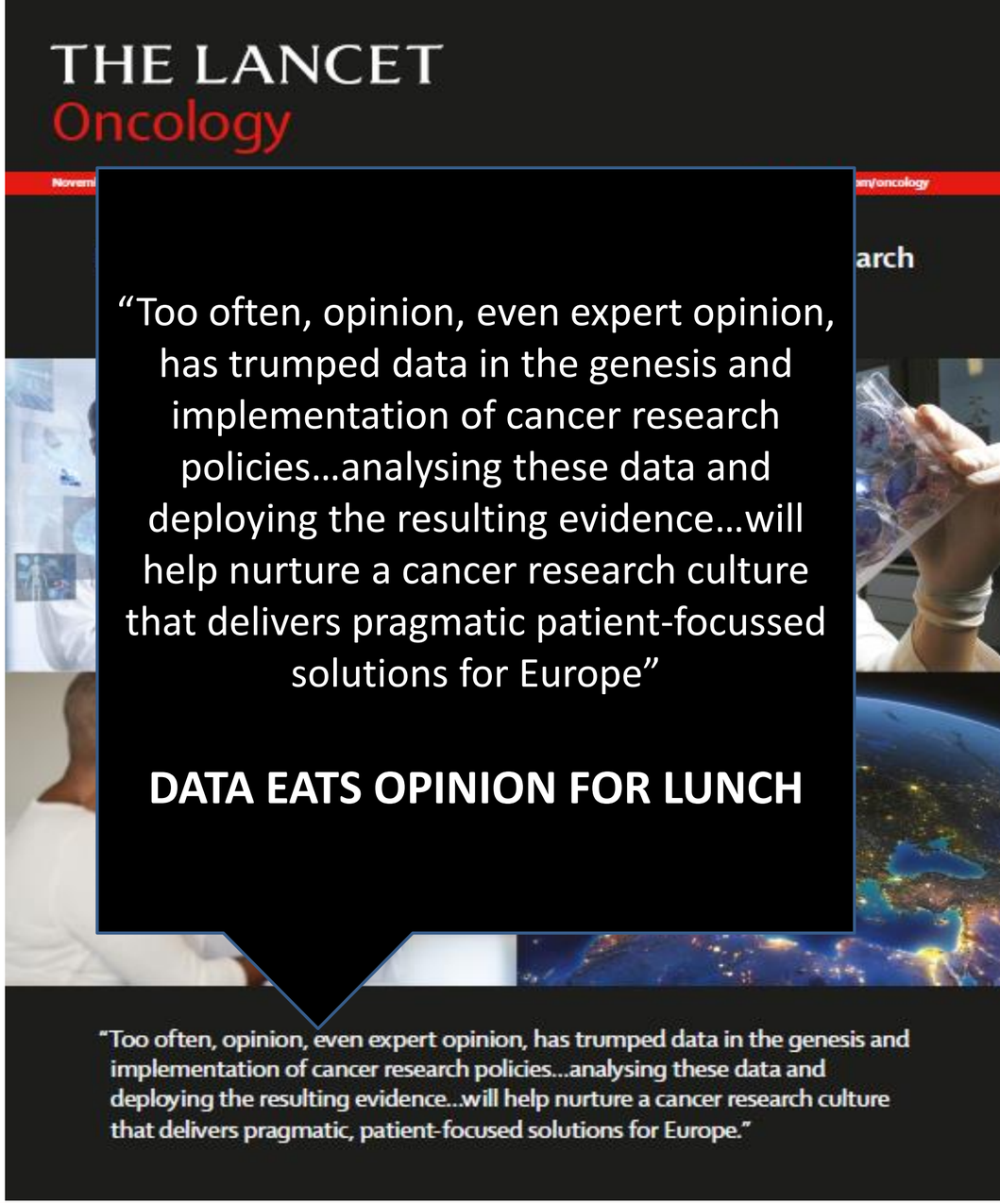
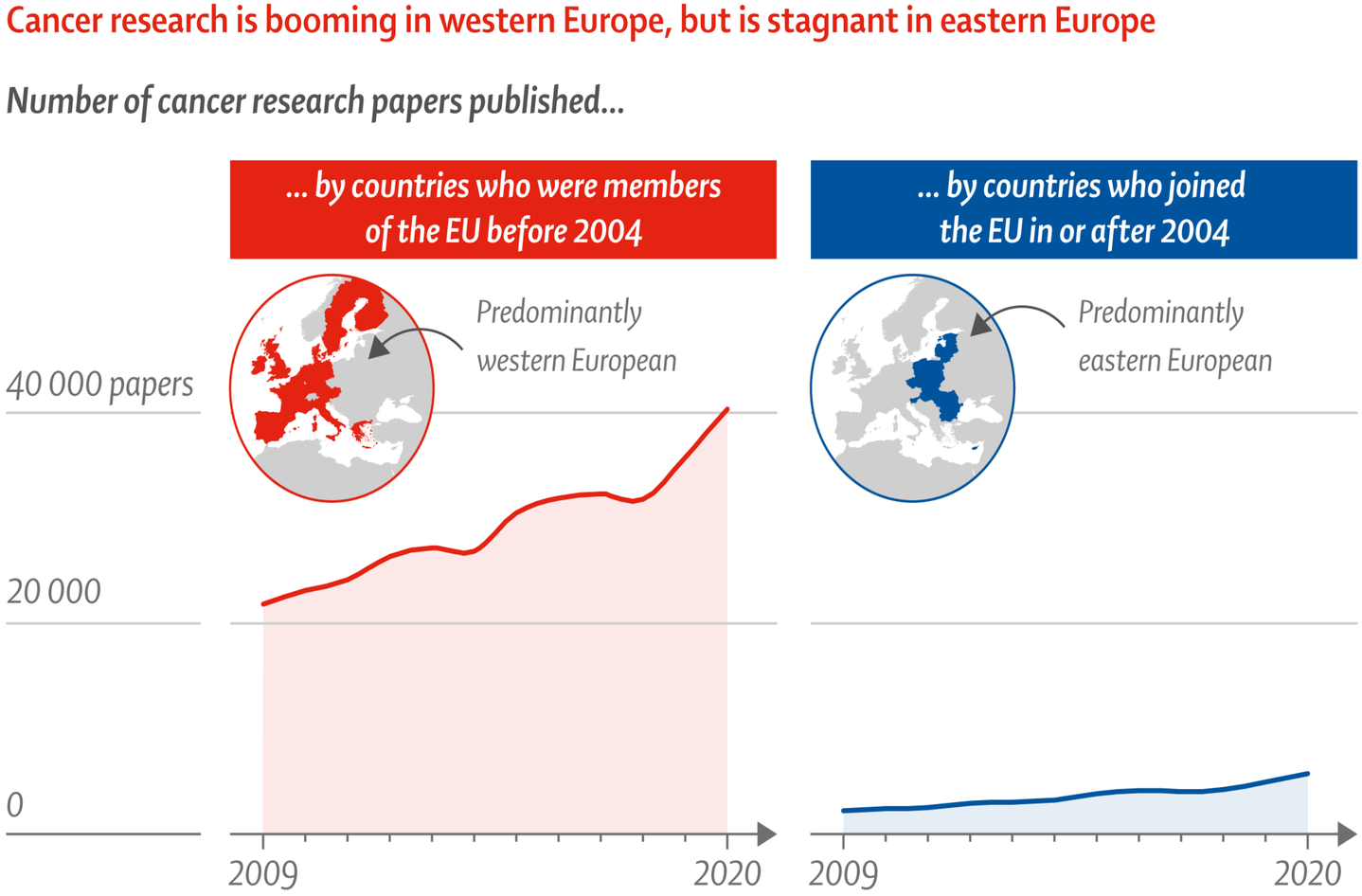


Our 70:35 Vision – 70% Long Term Cancer survival by 2035

- This is **not shooting for the moon**, it is firmly **grounded in reality** (hence the **Groundshot**)
- Help **achieve our 70:35 Vision**; 70% long term survival by 2035 for the 20M people in Europe living with cancer **(Recommendation 1)**
- **Patients treated in research-active hospitals** have better outcomes than those who are not.
- Research is **not a luxury**, it is an **essential and integral part** of modern European cancer care.

Closing the Cancer Divide

- **EU15** : **doubling of cancer research**
- **EU13** : **Stagnation,** little or no progress
- Direct impact on **survival and outcomes**
- **Capacity-building**, **directed funding**, and **twinning** to enhance research activity, quality, and translation
- All citizens and patients, **no matter where they live**, to benefit equally from advances in cancer research **(Recommendations 2, 3)**



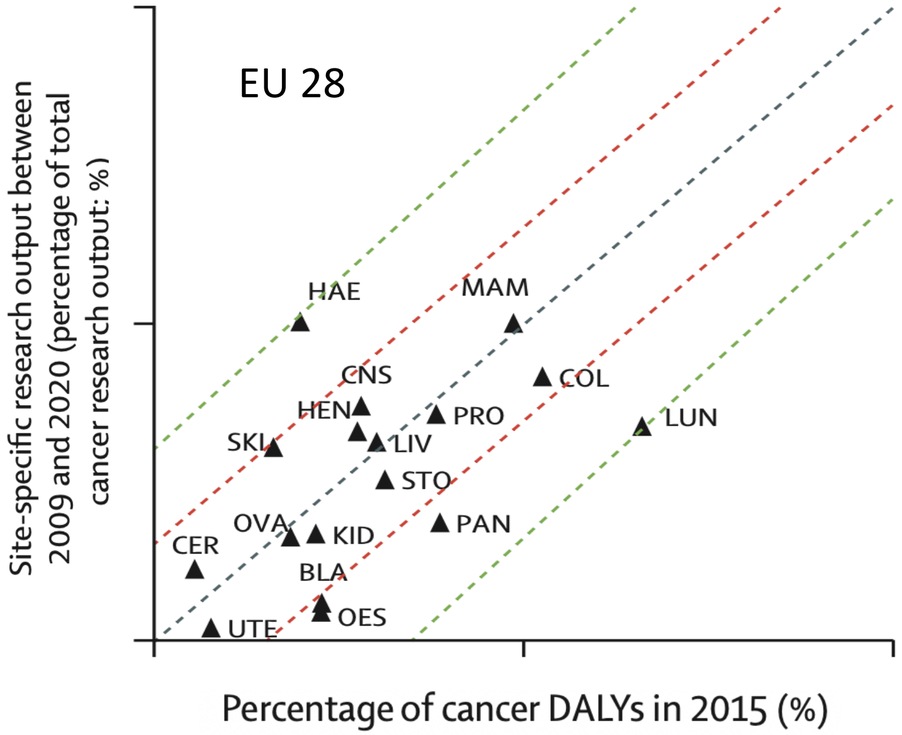
Addressing the Funding Gap

- **Significant mismatch** in cancer research funding between Europe and US
- **Europe:** **~€26** per head on cancer research
- **USA:** per capita spend is **€234**
- **Double** European cancer research budget to **€50 per head** by 2030 **(Recommendation 4)**
- Not **what** you spend, it's **how** you spend it
- Need to invest where the **investment is most needed**

Widen the cancer research portfolio in Europe

- Too narrow focus on discovery science and biopharmaceutical research
- need to embrace a **more comprehensive research portfolio**,
  - **all disease phases,** from prevention and early diagnosis to survivorship
  - **all cancer types,** proportionate to cancer incidence and burden
  - **all modalities** of cancer treatment and care, including non-systemic treatment interventions
- need for a greater emphasis on **health policy** and **systems research**, including **implementation science**

Align cancer research to European cancer incidence and burden



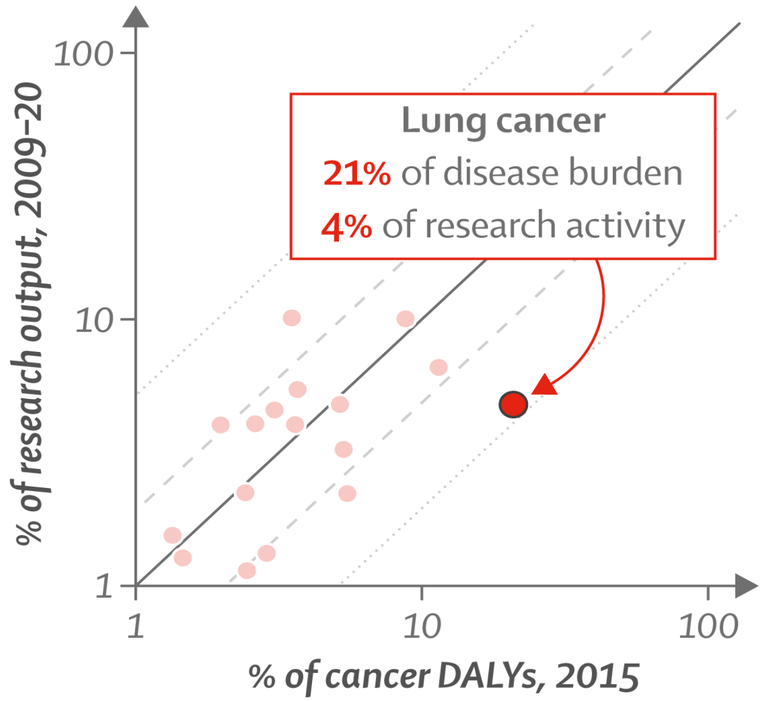
- Make **decisions based on data intelligence**, not opinion
- **Follow the data** and act on what it tells us

Most frequent cancers: breast, colorectal, lung and prostate
Highest cancer mortality: lung, colorectal, breast and pancreas

Research activity compared to the **relative disease burden**
in line with expected (e.g., breast and H&N cancer)
- higher than expected (e.g., haemato-oncology, CNS)

Make decisions based on data intelligence, not opinion

Lung cancer merits greater research attention than it currently receives



DALYs=disability-adjusted life years.

- **Follow the data** and act on what it tells us

Most frequent cancers: breast, colorectal, lung and prostate
Highest cancer mortality: lung, colorectal, breast and pancreas

Research activity compared to **relative disease burden**

- in line with expected (e.g., breast and H&N cancer)
- higher than expected (e.g., haemato-oncology, CNS)
- **some major cancer anatomical sites are severely under-researched** (e.g., colorectal, pancreas and **lung** cancer)

Gender equality in cancer research – time to end the discrimination

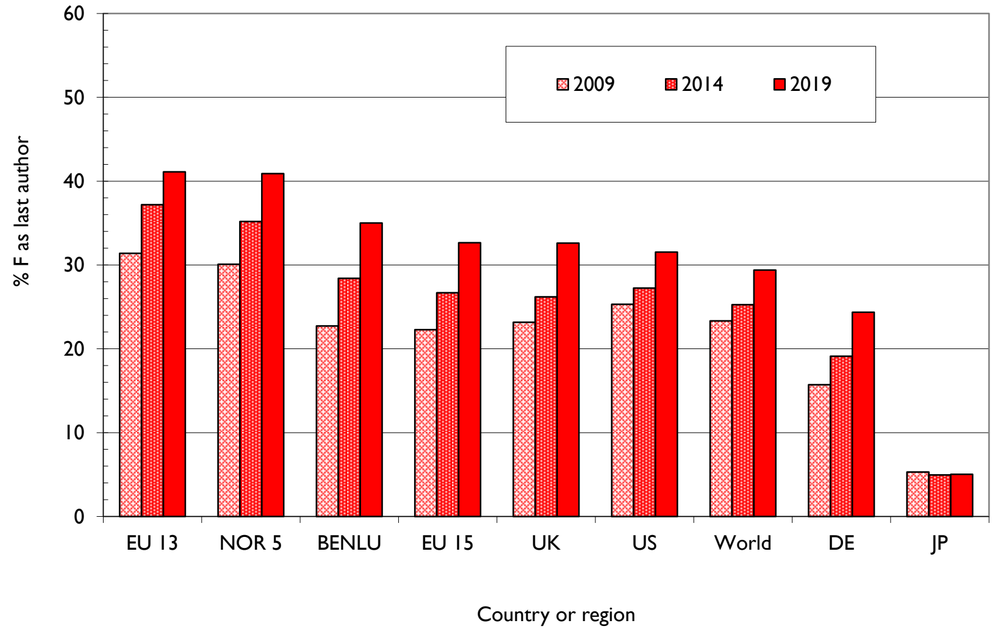
Disappointing figures particularly on **senior author female publications** in cancer research

Similar story for **research funding - 65% M v 35% F**

Learn from **CEE** and **Nordic** countries

Must develop **proactive mechanisms** to enhance gender equality in cancer research

Increase female senior authorship from **33% to 45% by 2028 (Recommendation 6)**



Mandating a Step Change in Prevention, Screening and Early Diagnosis Research

Substantial mismatch in funding focus

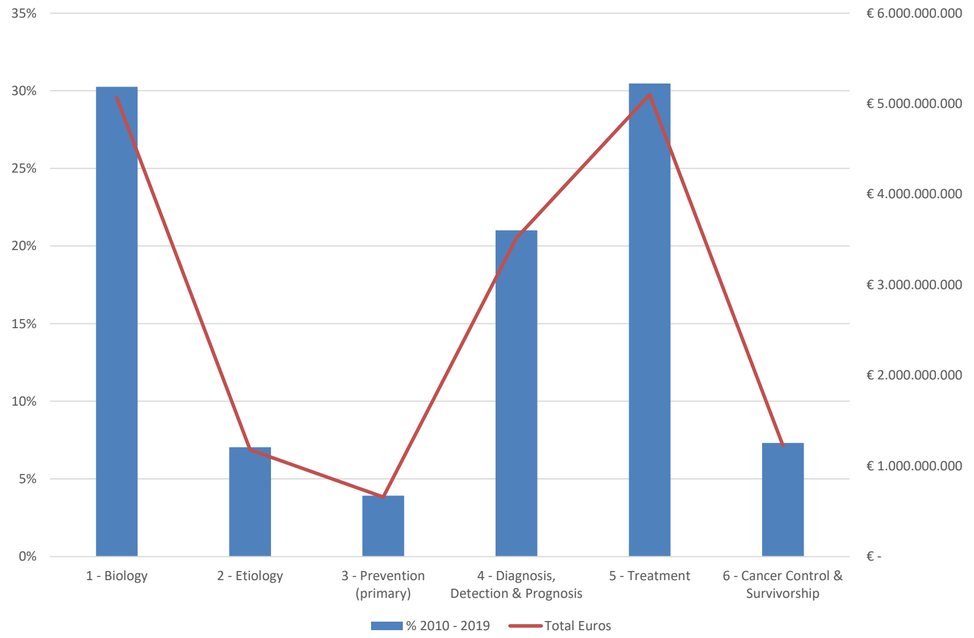
Need to **shift the dial (Recommendation 7)**

Significantly **increase spend** on prevention research

Fully implement new screening recommendations

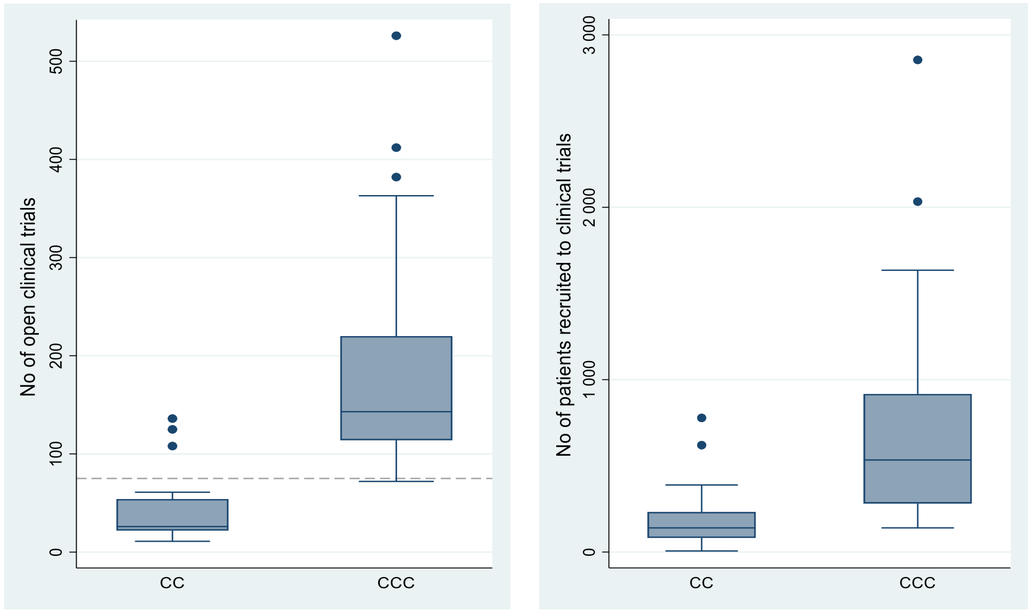
Eliminate HPV-driven cancers by 2030

Embed new technologies to **enhance detection of cancer at its earliest stage** including liquid biopsies



Research as the driver of better cancer care

- We need to **work together**
- **Comprehensive Cancer Centres** as drivers of research and innovation and their **implementation** into better cancer care **(Recommendation 8)**
- ***"Less breakthrough; more follow through"***
- **Harnessing** the strengths of Europe by **leveraging infrastructure and expertise** to be **more than the sum of our parts**



More focus on surgical and radiotherapy is needed

- **Surgery,** and most notably **radiotherapy,** lag behind systemic treatment modalities in research effort overall
- **50% of patients** with cancer have an **evidence-based indication** for radiotherapy and/or surgery as their most effective cancer treatments
- Yet we **significantly under-invest** in surgical and radiotherapy research

	Papers published between 2012 and 2021				Percentage of all cancer research papers published in each group				Relative contribution of OECI–accredited centres*
	World	EUR32	EUR19	OECI–accredited centres	World	EUR32	EUR19	OECI–accredited centres	
Discovery science and genetics	231 878	65 807	50 684	15 225	19·0%	17·0%	16·8%	19·2%	1·14
Biomarkers	178 687	54 756	43 333	13 390	14·6%	14·1%	14·4%	16·8%	1·17
Epidemiology	145 846	45 863	37 831	11 964	11·9%	11·8%	12·6%	15·1%	1·20
Surgery	139 851	44 644	35 098	8202	11·4%	11·5%	11·7%	10·3%	0·89
Chemotherapy	134 263	39 530	31 391	8769	11·0%	10·2%	10·4%	11·0%	1·06
Pathology	110 035	38 054	29 532	7423	9·0%	9·8%	9·8%	9·3%	0·95
Diagnosis	74 670	26 402	20 486	5157	6·1%	6·8%	6·8%	6·5%	0·95
Radiotherapy	69 546	25 505	17 632	5496	5·7%	6·6%	5·9%	6·9%	1·18
Targeted therapy	53 565	19 262	15 509	5303	4·4%	5·0%	5·1%	6·7%	1·30
Paediatrics	52 860	17 506	13 980	3681	4·3%	4·5%	4·6%	4·6%	1·00
Clinical trials	34 102	13 462	11 365	4769	2·8%	3·5%	3·8%	6·0%	1·59
Quality-of-life	30 006	12 388	9743	1866	2·5%	3·2%	3·2%	2·3%	0·73
Screening	24 463	8610	7142	2030	2·0%	2·2%	2·4%	2·6%	1·08
Palliative care	20 535	7645	5844	1540	1·7%	2·0%	1·9%	1·9%	1·00
Total cancer research papers published	1 223 049	387 125	301 239	79 471	..	..	..	..	..

Prioritising 20 Million Europeans Living Beyond a Cancer Diagnosis

- Survivorship **under-researched** and **underfunded**
- Need for a **European Survivorship Research and Innovation Plan (Recommendation 9)**
- **Three Pillars** to the plan
  - **Medical**
  - **Socio-economic**
  - **Politico-legal**
- **Avoid Financial Toxicity** through the **Right To Be Forgotten**
- Need for a **European Cancer Survivorship Day**

Don’t Let Cancer Become the Forgotten C in the Fight against COVID

- **Follow the data!**
- **Accelerate the research response** to the indirect effects of the COVID-19 pandemic on cancer **(Recommendation 10)**
- **Establish, by 2023, a near real-time dashboard** that captures and quantifies the effects of the COVID-19 pandemic on all aspects of the cancer pathway
- **Deploy** this accurate and timely cancer intelligence **to mitigate** the effects of the pandemic **and build future resilience**

Impact of Covid-19 on Cancer screening

Impact of Covid-19 on Cancer treatment

Impact of Covid-19 on Cancer patients seen

Impact of Covid-19 on Cancer workforce

Impact of Covid-19 on Cancer diagnosis

Impact of Covid-19 on Cancer patients

Data Intelligence: Impact on cancer screening and diagnosis

Impact of Covid-19 on Cancer screening

100 million Cancer screening tests were **not performed** in Europe as a result of the pandemic

Impact of Covid-19 on Cancer diagnosis

1 million Cancer patients could be undiagnosed due to the presentational/diagnostic backlog

We are in a race against time to find those missing cancer diagnoses

Mitigating the Impact of the War In Ukraine on Cancer

- Build on the work of the European Cancer Organisation and American Society of Clinical Oncology **Special Network on the Impact of the War in Ukraine on Cancer**
- Collect **monthly data intelligence** on the effects of the conflict on patients, cancer services, medicines, supply shortages, and workforce gaps, **in Ukraine and in neighbouring countries;**
- Develop a plan, by 2023, on how best to **mitigate the effects** of the conflict on **cancer clinical trials activity** across Europe **(Recommendation 11)**

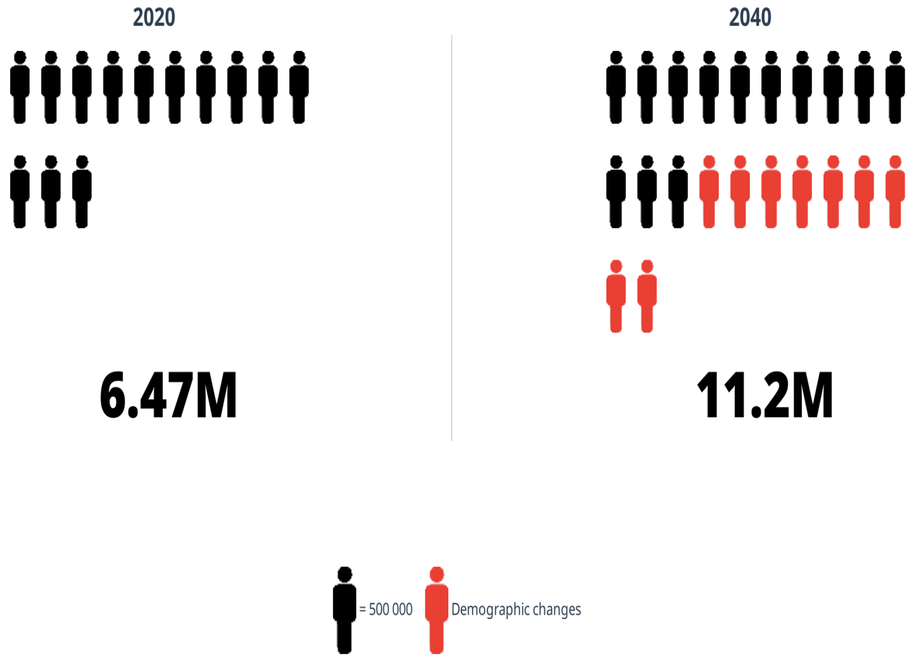
	Number of RCTs published*	Total cancer research output†	Percentage of total research output‡
Lower-middle-income countries			
India	42	27 601	67%
Ukraine	39	801	2%
Philippines	23	384	1%
Egypt	12	6262	15%
Georgia	6	78	<1%
Total	84	35	..
Upper-middle-income countries			
Russia	115	4835	2%
Brazil	94	15 272	7%
Romania	62	3457	2%
China	56	154 373	69%
Mexico	56	4126	2%
Total	182	182 063	..

RCT=randomised controlled trial. *One RCT could involve one or more countries. †Total number of cancer research papers published. ‡Percentage of total research output that are RCTs; percentages do not add up to 100% because data are exclusive to countries

Table 7: Top five country-level participation in global RCTs published between 2014 and 2017 by World Bank income category compared with their total cancer research outputs between 2014 and 2017

Empowering an equitable global cancer agenda

- Lets not be insular – we need to **empower** European cancer researchers to drive an **equitable global cancer research agenda,** with particular emphasis on LMICs **(Recommendation 12)**
- **Increase cancer research activity** between Europe and global partners **by 50%** by 2025
- Develop innovative funding mechanisms to **encourage a 50% uplift by 2024** in support for joint research between European and LMICs
- **Double collaborative research** activity between Europe and LMICs **by 2027**



Deaths from cancer in LMIC 2020, with projections to 2040

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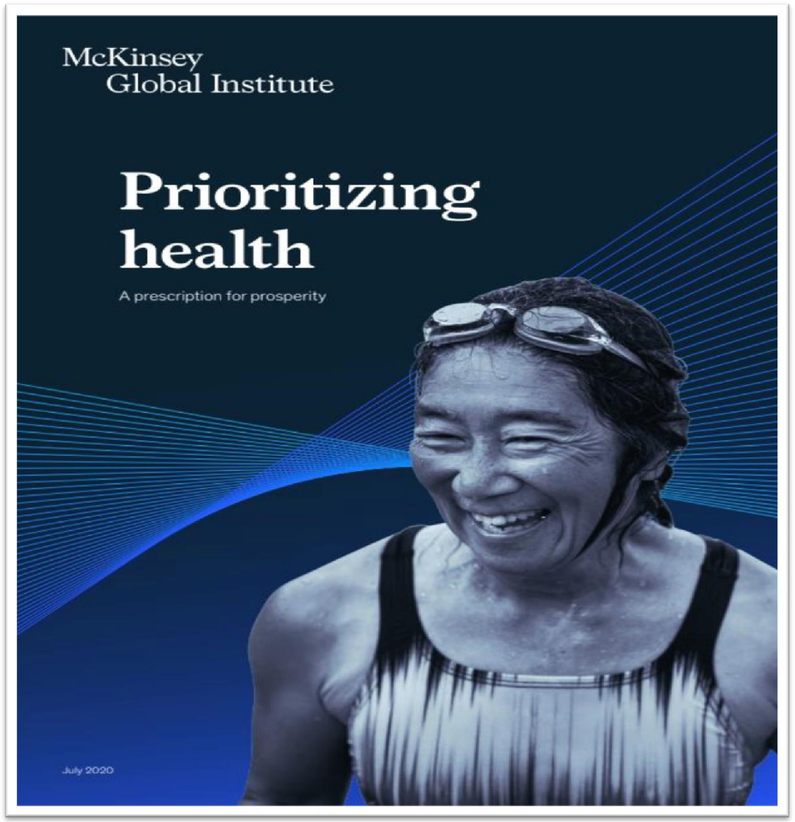
Groundshot—levelling up cancer outcomes in Europe: a *Lancet Oncology* Commission

Health and health-related research must not be seen as an expense, but an investment



creating a virtuous cycle of improved health and higher incomes. Economists estimate that about one-third of economic growth in advanced economies in the past century could be attributed to improvements in the health of global populations. Research focused on more recent years has found that health contributed almost as much to income growth as education.

The best part is that focusing on known health improvements could deliver an incremental economic benefit of $2 to $4 for each $1 invested (Exhibit 5).

1. Make healthy growth a social and economic priority
2. Keep health on everyone's agenda
3. Transform healthcare systems
4. Double down on innovation

The *Lancet Oncology* European Groundshot Commission on cancer research makes 12 realistic recommendations for achieving impactful change

1. **Double implementation science and health services research activity** by 2024
2. **Ensure all Europeans benefit from cancer research** no matter where they live
3. **Increase cancer research capacity and capability** in eastern Europe by 25% by 2025
4. **Double cancer research funding** in Europe to 50€ per head by 2030
5. **Mitigate Brexit** by facilitating UK involvement in European cancer research
6. **Enhance gender equality** in cancer research
7. Implement research advances to **eradicate HPV-driven cancers by 2030**
8. **Deploy comprehensive cancer centres** as powerhouses for cancer research and its translation into superior clinical care
9. **Establish a European Cancer Survivorship Research Plan** by 2023
10. **Deliver a data dashboard** to capture and mitigate in real time the impact of COVID-19 on cancer by 2023
11. **Ensure clinical trial activity is maintained and enhanced** in central and eastern Europe despite the impact of the war in Ukraine
12. **Double collaborative cancer research** between Europe and low-income and middle-income countries by 2027

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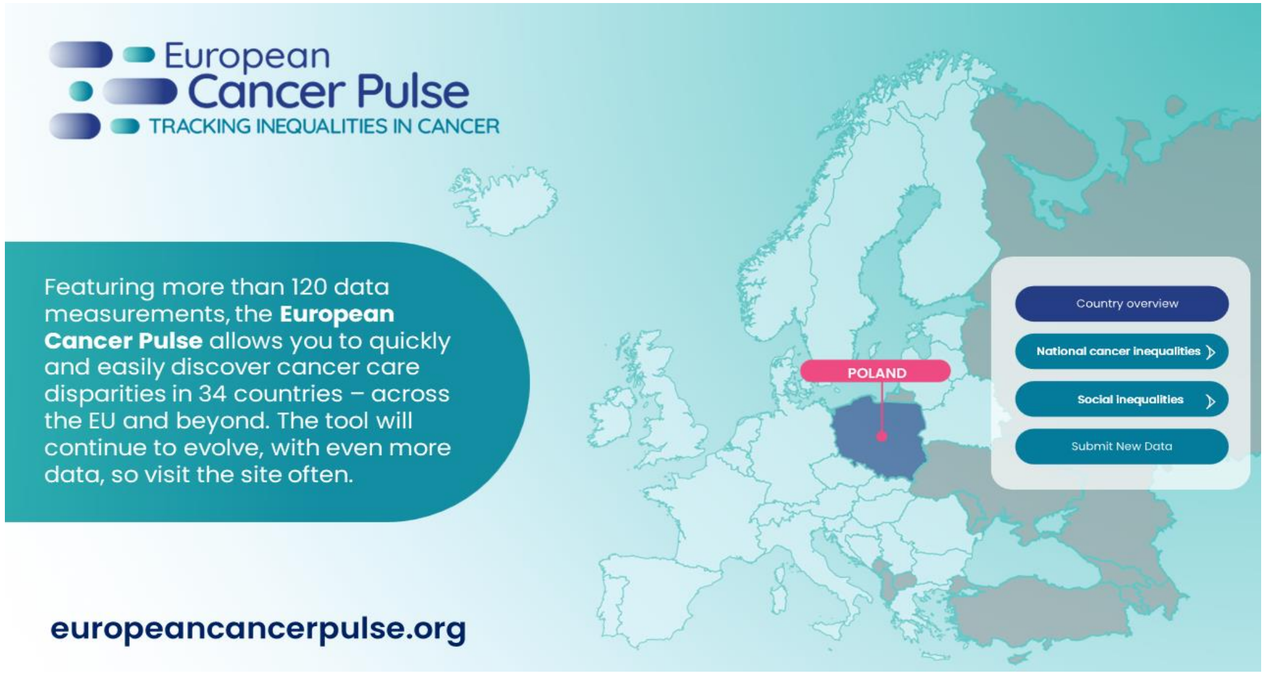
The European Cancer Pulse: Tracking Inequalities in Cancer Care in Europe

- Data visualisation tool **mapping inequalities in cancer care** across the WHO European region
- Includes more than **120 data measurements, across 34 countries**
- Tracks inequalities in:
  - All **EU and non-EU European countries**
  - **All areas of the cancer pathway and cancer policies**
  - **All areas of social inequalities** across all marginalised communities
  - **All types of available data sources**

European Cancer Pulse
TRACKING INEQUALITIES IN CANCER



Couespel N, Venegoni E, Lawler M. The European Cancer Pulse: tracking inequalities in cancer control for citizen benefit *Lancet Oncology* May;24(5):441-442

https://www.europeancancer.org/pulse

This webinar is presented in partnership with

Dipping into the data

European Cancer Pulse
TRACKING INEQUALITIES IN CANCER

Insights from the: European Cancer Pulse TRACKING INEQUALITIES IN CANCER

National Cancer Plan

Only **12 out of 27** EU-27 countries have an **updated national cancer plan**.

Diagnosis

- Only 8% of Dutch citizens experience **difficulties to find information about cancer symptoms**, versus 40% in Bulgaria
- **UK** has only 1.0 **CT scanners per 100,000 inhabitants** compared to 3.5 in **Germany**.

Medical Personnel

- **Sweden** has almost 6 (5.7) **oncologists per 100,000 inhabitants**, while **Malta** has less than 2 (1.8).
- **Norway** has 1788 **nurses per 100,000 inhabitants**, versus 338 in **Greece**.

Cancer Survivorship

Only **5 out of 27** of EU-27 countries have legal implementation of **right to be forgotten** for cancer patients' access to financial services.

Healthcare Spending

Romania is spending only 70**€ per capita on cancer care**, versus 260€ in **Austria**.

Driving Change

The gaps are mapped and assessed, we now **need to FOLLOW THE DATA and make change happen.**

The **patient voice** can be a positive **disruptive force**.

A **patient-centred approach** to cancer research is crucial to bridging health research, policy, and clinical practice**.**

Great Opportunity for Europe-US initiative to address the global impact of cancer