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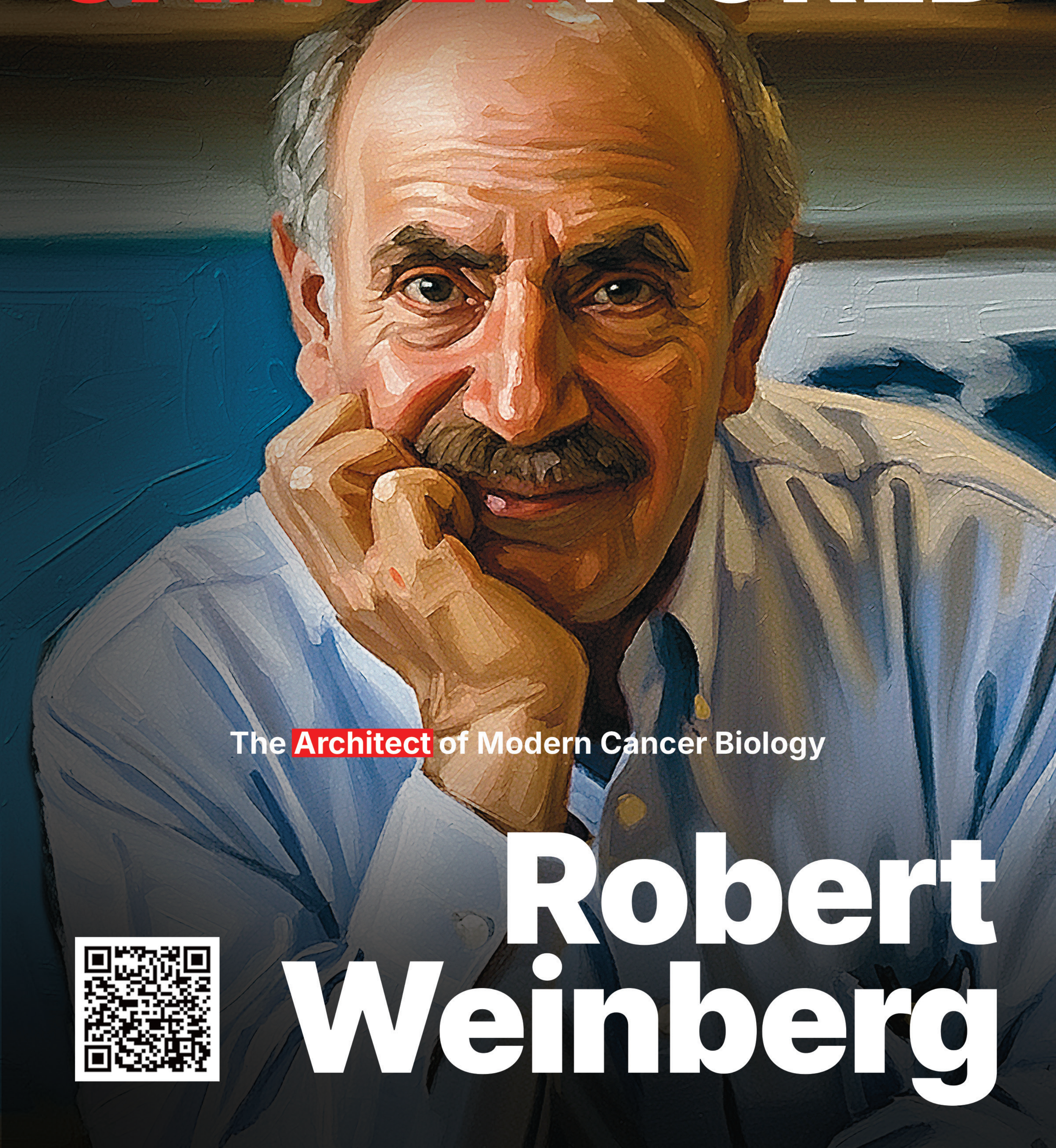

The **Architect** of Modern Cancer Biology

Robert Weinberg

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NOT FOR SALE

Where progress is redesigned with purpose and delivered back to those who need it most.

*Every issue of **CancerWorld** explores the places where science meets humanity, where personal stories reshape public systems, and where progress in oncology is defined not only by discovery, but by dignity. Our December edition brings that spirit into focus, led by two cover stories that reflect the past, present, and future of cancer care.*

*We begin with **Prof. Robert A. Weinberg**, whose accidental journey into biology became the foundation of modern cancer science. His reflections, from the discovery of oncogenes to the writing of The Hallmarks of Cancer, remind us that true insight is not measured in data volume, but in clarity, mentorship, and ideas that endure.*

Our second cover story reveals **Prof. Andrea Ferrari***, not only the architect of European pediatric sarcoma research, but the doctor whose presence transforms Progetto Giovani into a sanctuary for adolescents. This portrait uncovers the person behind the legend, the scientist who helped reinvent maintenance therapy, the mentor who shaped AYA oncology, and the human being who protects passion as fiercely as his patients.*

From these two leaders, the issue unfolds into a tapestry of policy, innovation, survivorship, and lived experience.

Minister Robert Troy *grounds our policy focus with Ireland's* ***Right to Be Forgotten****, showing how leadership shaped by loss can restore fairness to survivors rebuilding their lives.*

***Prof. Paolo A. Ascierto** charts immunotherapy's next chapter beyond the PD-1 plateau, where mRNA vaccines, smart cytokines, and T-cell engagers redefine the future, provided Europe prepares for access and equity.*

***Dr. Christos Tsagkaris** reframes cancer screening through health-rights literacy, insisting that awareness matters only when people can actually navigate the systems meant to protect them.*

In Kenya, **Diana Mwango** *reports on a quiet revolution: cancer therapy delivered at home, challenging assumptions about where treatment must happen and who it should serve.*

Dr. Enrico Franceschi *brings neuro-oncology's hidden burden into view, arguing that survivorship for brain-tumor patients begins at diagnosis and must include cognition, identity, and long-term support.*

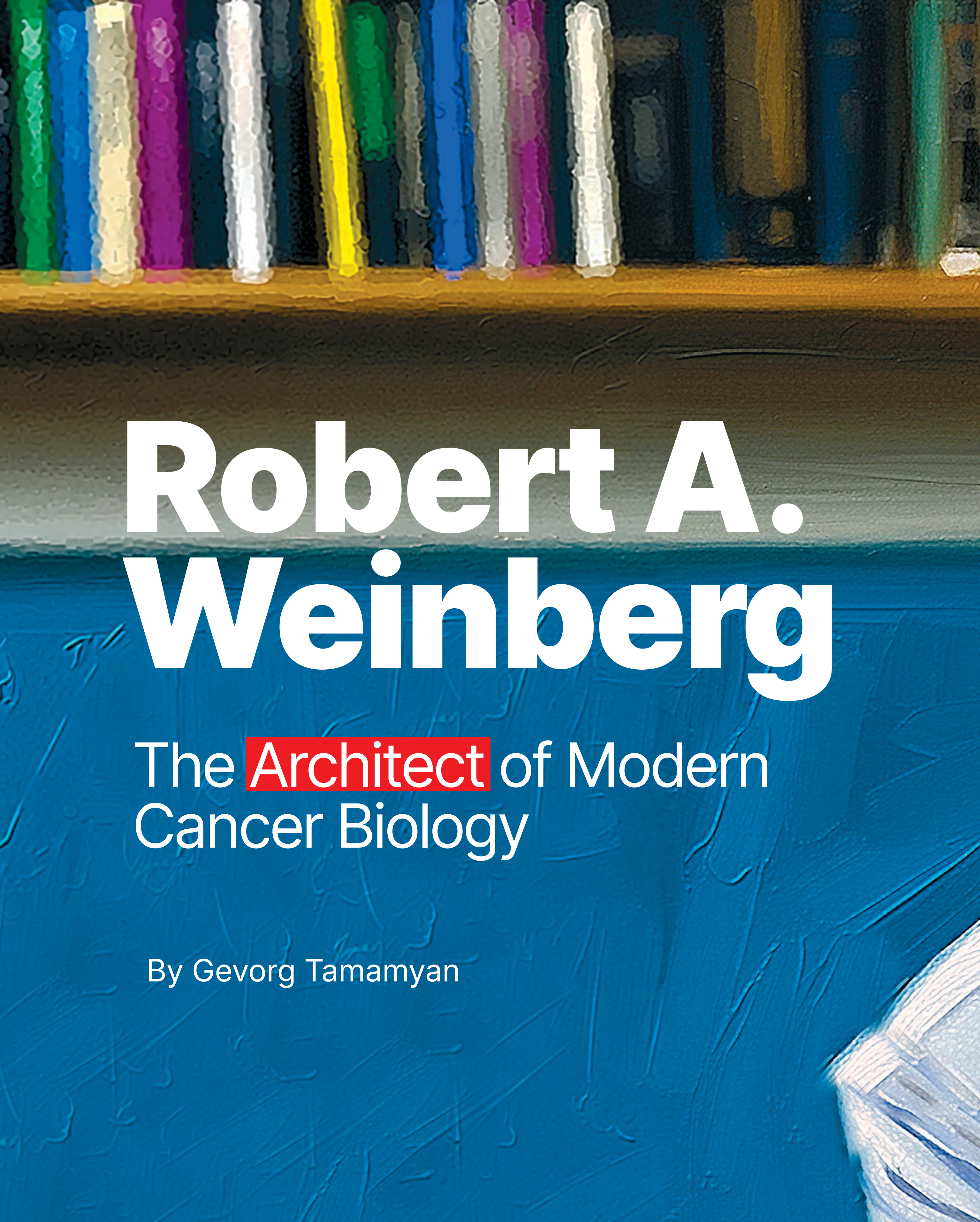
*In a deeply human story, **Isabel Deprince** opens the world she paints for her late brother, a landscape of horses, color, and connection, reminding us that art can carry grief where words cannot.*

***Dr. Arjun Gupta** reframes time as a form of toxicity, urging us to count not only survival gains but the days patients spend traveling, waiting, and enduring care.*

*And our Co-Editor-in-Chief, **Prof. Adriana Albini**, closes the loop with the rise of **Common Sense Oncology**, a movement calling for evidence that reflects what patients truly value: survival, quality of life, fairness, and time.*

Across these pages, December's issue reminds us that progress is built by people who choose to care as deeply as they investigate. With this final issue of 2025, we pause, reflect, and prepare for a new year of stories, voices, and discoveries. See you in 2026.

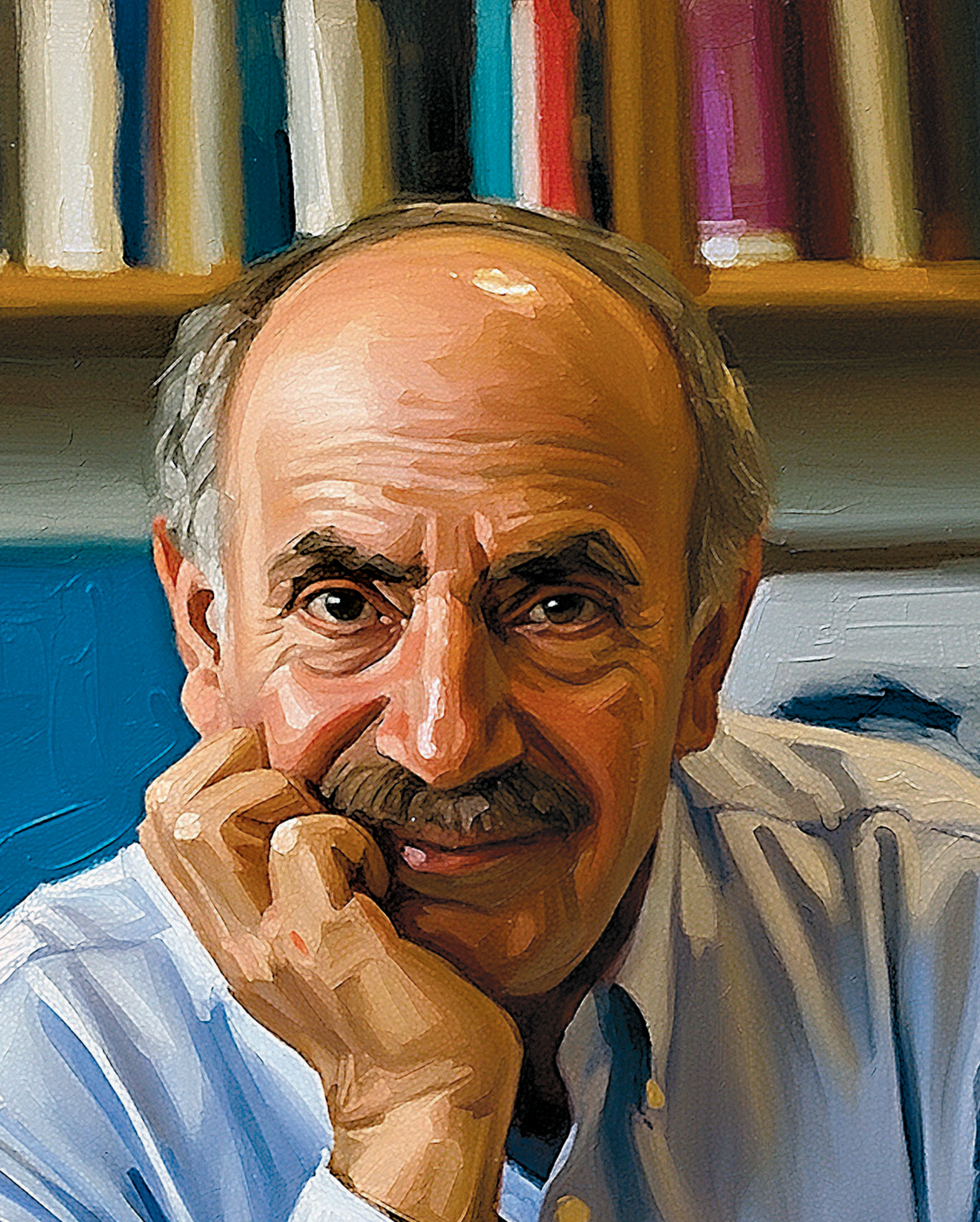
Yeva Margaryan, Managing Editor, CancerWorld



Robert A. Weinberg

The Architect of Modern Cancer Biology

By Gevorg Tamamyan



If you ask Robert Weinberg how his career began, he will not tell you a story of grand plans or carefully plotted ambition. He will tell you it was "*a series of accidents*."

"Most people have a series of goals in life," he says. "I just take one step after another."

Those steps, taken almost casually, reshaped how the world understands cancer.

From Pittsburgh to MIT, and into the Molecular Revolution

Weinberg grew up in Pittsburgh, Pennsylvania, the child of German Jewish refugees who escaped Nazi Germany in 1938. His first language was not English but Eastern Westphalian German. "I spoke that long before I spoke English," he recalls. To this day, when he speaks with relatives, he often still switches to German.

His path to science did not begin with a childhood dream of the lab. It began with parents watching their friends send their children to a school in Boston.

"Children of friends of ours sent their kids to MIT for undergraduate education," he says. "My parents said, why don't you try MIT. So I was admitted."

At MIT, he found an environment that would define his life. There were many interesting things to learn, but one thing stood out above all. "Most importantly, I experienced the molecular revolution of biology as it was occurring in the mid 1960s," he says. "That explains much of how I ended where I am."

Early Science, "Unambitious Problems," and the Road to Oncogenes

Weinberg tells the story of his early scientific work without embellishment. "I worked on some rather unambitious, uninteresting molecular biological problems," he says, "like what was the structure of mammalian RNA."

He then turned to studying tumor viruses, not out of an interest in cancer itself, but because of the viruses' utility as tools. "I worked on different tumor viruses, not because they cause cancer, but because they have interesting molecular biological attributes," he explains. They were a way to study messenger RNA and other molecules in a more tractable system.

The real turn toward cancer came later. "In the late 1970s, I became interested increasingly in cancers that were not induced by viral infection, but rather induced by certain mutagenic exposures," he says. That curiosity led his lab, in 1978, to start looking for genes mutated in cells exposed to chemical carcinogens.

What happened next is now written into the canon of modern biology. "In 1979, for the first time, we were able to show that in certain cells that had been transformed from a normal to a neoplastic state, one could find mutated genes that were responsible for the neoplastic phenotype," he recalls. Those genes could be considered what we now call oncogenes.

"That was my entrance with both feet into the field of molecular oncology," Weinberg says. "And by the way, **the most important thing I ever did in my career**. Everything else was relatively minor in my opinion compared with that 1979 work, which is a bit depressing given the fact that it is already 45 years ago."

MIT

Asked what was key to his success, Weinberg does not talk first about his own intelligence or originality. He talks about where he worked.

"One thing that was key to my success was being recruited back to MIT," he says. "In the end, the big difference between successful and not so successful laboratories is not the characters of the individual scientists who are leading the labs, obviously that helps, but their ability to recruit smart, ambitious, hardworking young people."

Here, he says bluntly, the playing field is not level. "If you are at MIT, it is easy to recruit excellent young researchers. If you are working in the middle of the United States, for example, the flyover countries as they call themselves, it is much more difficult." Being at MIT meant he was "poised to be able to recruit some very smart young people," and, he adds, "that made all the difference."

Many of the truly original ideas did not come from him. "Indeed, many of the good ideas in my lab did not come from my brain, but from the brain of the young people whom I was fortunate enough to recruit," he says.

"Good People to Work with"

Weinberg did not go out into the world to hunt for trainees. They came to him. "People wrote to me," he says, "and then I began to do some research into them."

He looked for signs of "intelligence and originality," but there was another criterion that mattered just as much. "Equally important was that they were actually good people to work with," he explains. "They were pleasant people. They were not disruptive. They were not so enamored by their own intellects as to disrupt the actions and the interactions within the laboratory."

"Often, I received letters that said, this person is very smart and has gotten this and that done," he recalls. "I called back the person who wrote the letter and said, that is all very good, but I do not sense any indication about his or her personality. How easy are they to get along with?"

For Weinberg, science has always been "a social activity." The prospect of retirement does not make him worry about losing titles or positions, but about losing people. "To the extent that I retire, which will happen soon, it will mean that I miss the interactions with the young people who make and who have made my life interesting and enjoyable," he says.

Over the decades, he estimates he has mentored "maybe altogether a hundred" scientists. "They are scattered across the world, all the way from China to Israel to Europe, majority in the United States," he says. Most went into preclinical cancer research, some into clinical medicine, others into teaching biology at universities. They form, in many ways, his real scientific legacy.

"Watson and Crick, I Stood on their Shoulders"

"Already in the 1940s, scientists had begun to speculate that cancer cells were mutant cells," he says when I ask whose shoulders he stands on. "Obviously, **Watson and Crick, I stood on their shoulders**. That is, that DNA is a genetic material. Watson, in fact, lived until this year. He found the double helix in 1953 and just died now in 2025. Quite remarkable."

Equally important was the generation of molecular biologists who, by the mid 1960s and into the 1970s, "characterized the molecular biology of mammalian cells." Their work, he says, "enabled certain experiments to be undertaken that really distinguished them from prokaryotic cells."

Here again, place mattered. "There was a whole field of science which I was surrounded by," he says. "And I should add a second feature of being in a place like MIT. Not only could I recruit good people, but I could learn from my colleagues around me at MIT from other laboratories. There was a lot of cross fertilization going on."

That cross fertilization is not left to chance in his own group. "To this day, I force people in my laboratory to attend weekly meetings where we learn what is going on in other laboratories," he says. "It is an obligation to go every week, whether they like it or not. I want my people to become generalists rather than simply deeply enmeshed in what they have been working on."

The Hallmarks of Cancer, from Volcano Path to Global Reference

Every oncologist knows the title. Many have cited it more times than they can count. But The Hallmarks of Cancer did not begin as a commission. It began as a conversation on the side of a volcano.

Douglas Hanahan and Weinberg, both alumni of MIT, had been raised in an intellectual culture that expected fields of science to be built on simple, unifying principles. Physics had its laws. Chemistry had its rules. Biology seemed, by contrast, "a hodgepodge of different phenomena."

"One elderly, cynical cancer researcher said to me, a Brit he was, he said to me, do not ever confuse cancer research with science," Weinberg recalls. "The reason he said that was because it was a large collection of disparate, diverse phenomenologies."

At a meeting in Hawaii, Hanahan and Weinberg slipped away and climbed up the side of a dormant volcano. "We began to have this conversation," Weinberg says, "and during this trip, we said, maybe there are some principles of cancer that we could also enunciate that would be as important as, for example, Newtonian laws for physics."

The idea remained an idea until 1999, when the editor of Cell invited Weinberg to write a review article for the new millennium. That invitation became the platform for the Hallmarks.

"When one writes a review article such as the Hallmarks of Cancer, one typically expects that the review article will disappear, as I often say, like a stone thrown in a quiet pond," he reflects. "But much to my amazement, it and its successor, Hallmarks of Cancer 2011, actually attracted a lot of interest, maybe even 50,000 citations."

He is not entirely sure why. "One may debate whether it was because it was such a fundamental innovation in thinking, or because it had so much information in it that it spared many authors the pain of having to cite a whole series of papers in the literature by just citing one paper," he says. "I cannot know. In any case, it is certainly flattering to know that it actually caught people's attention."

Cancer Research "Stuck in the Mud," and the Hope of Immuno-Oncology

With all the knowledge gathered since those landmark papers, where does Weinberg see the field today.

"Cancer research, and therefore also, to state the obvious, clinical cancer, is kind of, for the moment, stuck in the mud," he says. Many cancers that were life threatening a quarter century ago remain life threatening now. "We know an enormous amount about what propels these cancers forward," he says, "but we still have rather limited means to actually cure them."

Perhaps we can "delay the inevitable death" in many cases, he says, but "never achieving a cure" in cancers such as pancreatic cancer, many kinds of stomach cancers, esophageal cancer and others. "In that sense, it is a bit frustrating."

He does see one area that offers genuine hope. "The one hope I have for the future is that immune-oncology, that is the ability to treat cancers with various kinds of immunotherapies, offers hope for the future," he says. "So I think that is, for me, the most exciting area because of its continuing innovations."

Data Without Insight, and What Science Should Really Aim For

Weinberg is not impressed by large datasets for their own sake. He is troubled by the gap between the volume of data and the clarity of understanding.

"You are pointing out a great disparity, a disconnect in modern current biomedical research," he says when asked about the pace of real discovery. "I often ask people why they work on this problem or that problem, and they say, well, I can get lots of data. I can accumulate large amounts of information about this cancer or that cancer."

Then he asks a second question. "What are the take home lessons. What have you learned from these enormous data sets."

The answers, too often, are vague. "There they mumble a little bit and walk away without answering," he says, "because often our increasing knowledge does not lead to concomitant increased insights."

For Weinberg, an insight is not a heat map or a network diagram. "For me, an insight is something that you can explain, a take home lesson that you can explain in two or three sentences," he says. "Many of those insights are few and far between at present."

Advice to Young Scientists

Does he have advice for the next generation, the young scientists who grew up reading his work and want to become the next "Bob Weinberg".

"I would not wish on them becoming the next Bob Weinberg," he says quickly. "They should become themselves. Bob Weinberg is no paradigm for a goal."

But he does have a clear view of what their science should aim for. "I would urge them to think about the following, that their science and their experiments should be dedicated to generating new insights that can be articulated in two or three sentences," he says. "As I said before, you can explain what you have learned."

If all one does is generate large datasets, he finds that "a bit unsatisfying." It is not always possible to reach deep insights quickly, he acknowledges, but "those should really be the end goal of science, even if they cannot arrive at them instantaneously."

"People need to be motivated to choose experimental paths that will allow them to generate new insights that can actually be described in prose, or as I call them, take home lessons," he says.

About Family

When the conversation turns to his family history, Weinberg draws an unexpected line of connection.

"I belong to an ethnic group like the Armenians that has been chased across the globe in various epochs," he says. "In fact, it is said that the Armenians and the Jews look a lot alike. I cannot comment on that, but simply to say that I came from a family of German Jews who got out of Germany in 1938."

He grew up in Pittsburgh, speaking Eastern Westphalian German at home. When he thinks about the history of Armenians in Turkey, he says, "I can think of a very similar kind of fate, that is referring to the Armenian Holocaust, which was grim and also probably led to the deaths of a significant proportion of the Armenians in the Middle East." "There are similar histories, obviously propagated from different ideas and in different settings," he says, "but it is not an altogether happy thing to think about."

He is deeply invested in understanding his own ancestors. "I am very invested in what my ancestors' lives were like in Germany over the last 300 years, and why they suffered ultimately the fate that they did," he says, "something I still cannot understand to this day."

Building a Cabin, Learning with his Hands, and Discovering Intelligence Outside Academia

Outside the lab, Weinberg's great passion is not a hobby in the conventional sense. It is a place he built.

"In 1975, when I met my wife, I showed her a piece of land that I had just bought in New Hampshire," he recalls. "I pointed to a spot and I said, on this spot here, we are going to build a cabin. She looked at me as if I was a wild man."

They built it anyway. As the cabin grew, so did his skills. "I learned skills of carpentry and electrical work and plumbing and roofing and installing windows," he says. "So if you need a house built, Weinberg should be your man, an expert in the skills of home building."

He added gardening to this second life. "After 50 years, we actually have a pretty nice place in the woods of New Hampshire, which is my passion," he says.

He is convinced that without this escape he would have been a very different person. "It is good to be able to escape from one's profession and move into an entirely different world that demands different skills and different types of interactions with people," he says.

Those interactions also changed how he sees intelligence. "One of the things that it taught me was, actually, there are lots of people in this world who are highly intelligent, very competent, as indicated by the way they build, they use their hands," he says, "but they do not show up in academia, which is a humbling idea."

Books

On books, Weinberg is not eager to promote himself, yet he is honest about what he thinks matters.

"Maybe **The Double Helix by Watson and Crick**," he suggests first. Then he mentions his own textbook. "I actually published a textbook, **The Biology of Cancer**, that has been well received," he says. "I do not mean to promote that because that would seem to be a little self aggrandizing, but I am giving you an honest assessment."

What he really wants to emphasize is the need for rigorous foundations. "In order to do good cancer research, people need to have a pre existing rigorous education in molecular biology and cell biology and genetics," he says. "Simply jumping in with both feet is not going to land them into a very propitious position where they can really start advancing quickly."

"There needs to be a pre existing, underlying and highly cultivated expertise in biochemistry, cell biology, genetics, and all the other aspects of modern biology," he insists.

On Leadership

Weinberg resists the label of leader. He tells a story from MIT to illustrate it.

"Years ago, a vice president of MIT said to me, Bob, why don't you move yourself into a leadership position," he recalls. "I said to him, he had a thick Greek accent, I said, Constantine, I am not a leader of men."

The vice president looked at him and, with a sense of humor, replied, "What are you then, a leader of women."

To the extent that Weinberg has a leadership style, it is quiet and systematic. "When somebody comes new to my lab, I ask them to sit at work, talk with everybody in the laboratory, and then come back to me two or three weeks later and ask them what would they like to work on," he says.

The ideas that come back fall into categories. "In one, I will say, that is totally unworkable, it will not happen. Or I will say, somebody else in the lab is already working on it, there will be competition," he explains. "Or I will say, actually, that is very original. It may be rather challenging, but let us see what happens over the next six months."

He does this intentionally. "I allow them to develop their own research trajectory, so that they can take ownership of what they are doing," he says.

That ownership does not end when they leave. "When people leave my lab, they take their projects with them," he emphasizes. "Because they have worked on them, and they own them, in my eyes."

The long term goal is not papers but people. "That is part of my style of leadership, which in the end has the goal of making the people who leave my laboratory into independent researchers," he says. "If I do not succeed with one of my trainees or another, then I think of myself as having failed."

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If he has to describe himself in one sentence, Weinberg replies quickly.

"A Short, Stocky, Noisy Jew,"

For a scientist who never set out to be a giant, Robert Weinberg has spent a lifetime showing that the real work of science lies not in the size of the data, but in the clarity of the insight, and in the generations of people you empower to think for themselves.

MINISTER ROBERT TROY

“Because I Wanted to Be a Voice for Others

LEADING IRELAND’S RIGHT TO BE FORGOTTEN REFORM

By Yeva Margaryan

I expected to meet a Minister defined by data, evidence and pragmatism. And I did. What I did not anticipate was the depth of empathy behind those qualities, or the disarming honesty of someone who describes himself, with a smile, as "the spoiled youngest of twelve." Our conversation revealed a policymaker driven not only by analysis, but by lived experience, loss, and an unwavering belief that public service must make life fairer for those who need it most.

It was a discussion that lingered long after the recording stopped, a conversation about fairness, responsibility, and the quiet determination to turn policy into action for the people and communities he serves.

Where Does Good Fortune Come From?

He begins not with policy, but with family, a large, textured, disciplined childhood that still shapes every instinct in his public life. Raised in a home where resources were stretched but affection was limitless, and where work was less a duty than a rhythm of daily life. "From a very early age, it was always instilled in me a very strong work ethic," he says. "Both my parents worked extremely hard... they made many, many sacrifices so we could have a better start in life than maybe they did."

Their hard work gave their children opportunities they themselves had not known: boarding school, third-level education, the freedom to imagine horizons beyond survival. These opportunities, he says, carried a moral counterpart. "Good fortune comes from working hard, but also that there is a responsibility to think of others, and people who are less fortunate, and where the opportunity arises to help those people out."

His father, a community activist deeply involved in local organisations, embodied that ethic. Though never elected, he was often the first stop for neighbours seeking help or guidance. Young Robert watched as his father connected people to those who could help them. "I would have seen from a very early age that politics is a force of doing good," he says. "You can use individual challenges to address maybe a societal change on a larger scale."

That conviction carried him into the student council, "because I wanted to be a voice for others", and later into local politics, where the connection between policy and people felt immediate. "I really enjoyed making a difference for my community," he says. "The strong motivational factor is the ability to make positive change that might improve one person's life, but could be of a huge difference in a broader sense also."

The Youngest of Twelve

If being the youngest softened him, it also gave him a second mother. His eldest sister, nearly two decades older, played a central role in his childhood. "On the weekends, I used to go and stay with my sister... We were really, really close. She was like a second mother to me."

He smiles gently as he recalls it. "I'm told I was spoiled and had a much more sheltered upbringing than the older family." But the bond he formed with his sister, later lost to cancer, remains a quiet, formative thread beneath his public work.

The Right to Be Forgotten: I Know the Impact that Cancer Has

"This is not my initiative," he says of the Right to Be Forgotten. "This was something I adopted when I was appointed to this role."

The bill had been introduced in the Seanad by his colleague Catherine Ardagh. It appeared in the Programme for Government, but not as an urgent priority. "It could have been year three, year four, year five," he says. But once he stepped into the portfolio, he recognised an opportunity to accelerate it. "I wanted to prioritise this because I know the difference. I know the impact that cancer has on families."

His own siblings "didn't get a cancer-free period," he says quietly. "Ultimately, the disease captured them." But instead of anchoring the story in loss, he shifts immediately to the people who can be helped.

"Many people, thankfully, because of the advance in medical technology and improvements we have in cancer care, people are going on to live very normal lives after having been diagnosed with cancer, after having had the treatment. And we didn't want this preventing them, having gotten over this awful illness, preventing them going on to live out their lives."

Why Mortgage Protection Comes First

At the center of the legislation is one simple premise: survivors should be able to rebuild their lives. And in Ireland, that begins with a home. "One of the basic principles for living a full life is home ownership," he says. "The ability to buy a home, build a home, roots in the community."

For cancer survivors, the barrier has been blunt: without

mortgage protection, there is no mortgage, and without a mortgage, there is no home. He stresses that this is where discrimination bites hardest. "This fundamental stage in somebody's life is where we could make the greatest difference."

The consequences extend far beyond the individual. "If you're prevented from owning your own home, the only choice you have is to rent, and rent indefinitely," he says. In Ireland, where long-term home ownership shapes security, identity and intergenerational stability, the impact can echo for decades. "It has ramifications… it can have an impact on subsequent generations."

The voluntary code introduced by Insurance Ireland provided early evidence that progress was both possible and practical. "We've seen the positive impact… people were able to access mortgage protection and move on with their lives," he says. Legislating it is now "the next logical step."

And he is clear about the timeline: "It is my aim and desire that we will have this legislation enacted very early in 2026."

Finding the Right Balance

The remission period, seven years for adults, five for those diagnosed under 18, is one of the most debated elements of the bill. Critics argue that it still feels long. Minister Troy's response is grounded in process rather than politics. "We have to take an evidence-based approach," he says.

Consultations included the Irish Cancer Society, the Central Bank of Ireland, the Financial Services and Pensions Ombudsman, and the Society of Actuaries. Ireland also benefited from learning from early adopters such as France and Belgium.

Based on all this, "we felt this was the right balance." But he adds, with disarming candour: "We may not land at this. There may be scope to reduce it somewhat."

The challenge, he says, is avoiding unintended consequences. "Other countries have up to 10 years. So it's about balancing the equation, and it's about ensuring that you don't introduce something that's going to have a detrimental, unintended consequences to other people who are looking for mortgage protection."

The goal is fairness that does not jeopardise stability. "An opportunity for people to reset and start again," he says, "while not distorting the market."

When Insurers Say 'Yes'

One of the striking aspects of this reform is the degree of cooperation from industry. "Insurance companies have been willing, open and engaged," he says, a contrast to negotiations in other policy areas. Ninety-three percent of providers signed the voluntary code. "It has been positive and fruitful," he notes. "We will work now to enhance those codes and enshrine them in legislation."

Balancing survivor protections with market stability is the central tension of this legislation. He speaks about it with a clear sense of responsibility. "In government, you have a responsibility to ensure that you have a properly functioning insurance market," he says. "Our businesses need insurance, our homes need insurance, our cars need insurance."

If the market becomes unstable or providers withdraw, the consequences fall on ordinary people. "We are still paying the consequences for insurance companies who failed in the past," he says. Stability isn't ideological; it's practical.

His department's insurance team monitors international developments, examines data, and anticipates market reactions. The Action Plan on Insurance Reform aims to keep the market competitive, proportionate and fair. Insurance providers "do have to make a profit," he says, not as a defence of industry, but as a recognition that financial sustainability is essential for consumer protection.

Financial Literacy: People in Real Terms are Losing Money

Financial fairness, he argues, cannot be achieved without improving financial literacy, not just among young people, but across every generation. Too many households, he says, are losing money without realising it. **"We have €170 or €180 billion on low-interest deposit accounts in Ireland,"** he explains. "And people in real terms are losing money because when you see the level of interest that's been paid, marked with the rate of inflation, in actual fact, they're losing money. And people perceive that to be the safest investment out there."

For him, this misconception is not a minor issue but a national vulnerability. It is why he sees auto-enrolment as a fundamental shift rather than a technical reform. "What we want to do is support people, make the right decisions so that they can have the greatest security for their own future." The new auto-enrolment pension scheme, "my future fund," is designed to change that behavioural landscape. "It ensures that people can have their own pension scheme where the government will pay into it, where your employer will pay into it, and where you, as an employee and worker, will pay into it."

Far too many people, he notes, rely solely on the state pension, which cannot meet future needs on its own. "We want to support people to make the right decisions so they can provide for themselves economically and give themselves the greatest security in the future and for their old age."

People

Throughout the interview, one word appears again and again: people. His governing philosophy is disarmingly straightforward: "The common good. What can you do that will have the greatest impact for the most amount of people?"

He describes Ireland's political culture, direct, local, human. "Most people can have access to their TD or a Minister very easily, literally turn up at their constituency office." When they do, "they're entrusting me with one of their biggest problems."

For him, that trust imposes two duties: 1. Solve the problem in front of you if you can. 2. Ask whether this individual case reveals a wider societal issue. "Is there a wider societal issue that is causing that problem? And can I use the knowledge of this to influence a national change?" Helping one person matters, he says, but using their experience to help many more is the real work of public life. "That's how I approach most of my dealings in public life."

Looking ahead to the end of his mandate, he is realistic. "You can't achieve everything," he says. But you can prioritise policies that deliver real impact. He recalls previous reforms, modernising the Personal Injuries Resolution Board, introducing SCARP for small businesses, as examples of policy that strengthens people's lives in concrete ways.

For him, economic security is dignity. **"If you can help people be secure economically," he says, "let them make the decisions that best influence their own lives."**

That is the Purpose

When asked what he hopes his late siblings might ask him today, he pauses. "I would just hope that they would be proud that I'm using the position that I am to make a difference to families it can benefit."

The Right to Be Forgotten will not change what happened to his siblings. But it will change what thousands of survivors and families can build for themselves. That, he says, is the purpose of the work.

BEYOND THE CHECKPOINT

WHAT COMES AFTER PD-1?

By Paolo A. Ascierto

When the first signals of modern immunotherapy began to emerge a little over a decade ago, many of us realised that oncology was about to change forever. I still remember the sense of astonishment when we saw the first durable responses with ipilimumab, the anti–CTLA-4 antibody that opened the door to a new therapeutic era. For the first time, we were not just treating cancer, we were engaging the immune system as an ally. And the goal was not merely to destroy cancer cells, but to turn an otherwise devastating disease into something that could be controlled, contained, and at times even made chronic.

But it was with the arrival of PD-1 inhibitors, such as nivolumab and pembrolizumab, that the field truly shifted. Suddenly, patients with advanced melanoma, people who previously had few options, were achieving long-lasting remissions. The survival curves flattened, something we had almost never seen in solid tumors. Those results quickly expanded beyond melanoma into lung cancer, renal cancer, head and neck cancers, and more.

For clinicians, it was a profound moment. For patients, transformational. And for immunotherapy, just the beginning.

Yet more than ten years later, we find ourselves at a crossroads. The PD-1 era has been revolutionary, but it has also reached a plateau. Not all patients respond. Many relapses. And in Europe, access remains uneven, where you live still too often determines the therapy you receive and the outcome you can hope for.

So, the question naturally arises: what comes after PD-1? And equally important: how do we prepare for it?

The New Map of Immunotherapy

Innovation in immuno-oncology is vibrant, but it is moving away from the simplistic idea that adding more checkpoint inhibitors will solve resistance. The next phase will be defined by new immune targets, smarter cytokines, personalised vaccines, cellular therapies adapted to solid tumours, and, increasingly, T-cell engagers, which I believe may become one of the most important classes of the coming decade.

We should also remember the potential of oncolytic viruses, now being redesigned with enhanced tropism and immunogenicity.

The future will not rely on a single breakthrough, but on a toolbox of complementary strategies capable of reshaping the immune response in different clinical scenarios.

1. New Immune Targets: Beyond LAG-3, TIGIT, TIM-3

The emergence of additional checkpoints like LAG-3, TIGIT and TIM-3 sparked enthusiasm. If blocking CTLA-4 and PD-1 worked so well, perhaps blocking more checkpoints could push the field further.

Reality has been more modest. While the relatlimab–nivolumab combination showed benefit in melanoma, the activity is far from the dramatic impact seen with CTLA-4 plus PD-1 a decade ago. In other tumours, TIGIT and TIM-3 inhibitors have produced limited results.

These molecules tend to appear late in the exhaustion pathway; they fine-tune, rather than ignite, immune responses. In patients whose immune system has not been properly primed, they simply have nothing to modulate.

However, the recent Relativity-048 triplet (anti-CTLA-4, anti-PD-1, anti-LAG-3) showed promising early activity, reminding us that some combinations may still find their place.

2. The Return of "Smart" Cytokines

Cytokines evoke memories of the early, difficult days of IL-2 therapy, but today's versions are profoundly different, precision-engineered to empower immune cells while minimising toxicity.

Promising approaches include: IL-2 variants (e.g., MDNA11) that selectively expand effector T cells and NK cells without activating Tregs. IL-15 and IL-21 analogues, enhancing cytotoxicity and persistence.

Next-generation IL-18 engineered to escape its natural decoy receptor.

These "smart cytokines" may become powerful partners for PD-1 inhibitors, particularly in low-inflammation "cold" tumours.

3. Personalised mRNA Vaccines: The Neoantigen Wave

Among emerging strategies, personalised mRNA vaccines may be the most transformative. In melanoma, the V940 combined with pembrolizumab reduced the risk of recurrence or death by **44%** compared with pembrolizumab alone. But beyond the numbers, the mechanism is striking: mRNA vaccines rebuild immune priming, expand new T-cell clones, and dramatically diversify the adaptive response.

If PD-1 inhibitors remove the brakes, vaccines provide the fuel. This synergy could extend well beyond melanoma into lung and gastrointestinal cancers, marking the beginning of an entirely new chapter.

4. Cell Therapy for Solid Tumours: From Promise to Practice

Cell therapy is no longer the exclusive realm of haematology. TIL therapy (lifileucel) has demonstrated activity in heavily pretreated melanoma patients, even in those resistant to all approved immunotherapies.

New generations of cellular therapies are under development. Europe, however, faces infrastructure and cost challenges: specialised centres, complex logistics, and significant investments are required.

Still, cell therapy is coming to solid tumours, and we must be ready to integrate it.

5. The Rise of T-Cell Engagers: A New Frontier

If I look at the future of immunotherapy, T-cell engagers (TCEs) emerge as one of the most compelling and disruptive classes ahead.

Unlike checkpoint inhibitors, which modulate existing immune responses, TCEs physically bridge T cells to tumour cells, forcing an immune synapse where none existed. The next generations, with improved half-life, reduced cytokine-release risk, and tumour-specific targets, may profoundly reshape treatment across multiple tumour types.

In a way, T-cell engagers bring together the strengths of immunotherapy and targeted therapy: specificity, potency, and the ability to bypass the need for pre-existing immune priming.

They may become central tools in overcoming resistance to PD-1 inhibitors, especially in tumours with low T-cell infiltration, where traditional immunotherapy has struggled.

I believe T-cell engagers are emerging as one of the most promising modalities of the next immunotherapy era.

The Crucial Point: Immune Priming

Perhaps the most important lesson of recent years is that the future of immunotherapy does not lie in "more checkpoint inhibitors" but in rebuilding immune priming.

This is especially evident in the adjuvant setting. Minimal residual disease is immunologically different: fewer neoantigens, weaker inflammatory signals, and limited spontaneous activation.
That's why many dual-checkpoint strategies effective in metastatic disease fail in earlier stages.

In early melanoma and other solid tumours, PD-1 inhibitors do not work by releasing exhausted T cells; they work by educating the immune system before exhaustion even occurs.

This "immune education" framework may define the next decade: mRNA vaccines to teach the immune system, what to target, engineered cytokines to amplify early activation, T-cell engagers to force direct tumour targeting, cellular therapies to broaden the repertoire, and PD-1 inhibitors to maintain long-term memory.

It is not a competition; it is a sequence.

European Challenges: Access, Regulation and Sustainability

Europe has produced many pioneers of immunotherapy, yet access to innovation remains profoundly uneven. Regulatory timelines lag behind the US, and disparities persist between northern and southern regions, urban and rural areas. For example, Germany and the Netherlands routinely adopt new immunotherapies within months of EMA approval, whereas delays of **12–24 months** remain common in some lower-income countries such as Cyprus, Latvia and Lithuania. These differences directly affect survival outcomes.

Next-generation therapies, especially personalised vaccines and cellular treatments, will intensify these gaps unless we act proactively.

Europe now faces three urgent challenges:
- Infrastructure
- Biobanks, sequencing hubs, and manufacturing sites are all essential and currently insufficient.
- Sustainable reimbursement models.

These therapies will come at a high cost and may not be sustainable if left to individual health systems.

Governments, industry, and academia must cooperate to ensure access for as many patients as possible.

Stronger Cross-Border Collaboration

Through EORTC, European cooperative groups, and ERNs.

Innovation cannot stop at national borders. Without coordinated investment, the next wave of immunotherapy risks becoming a privilege rather than a standard.

Preparing for the Next Wave: Five Messages for the Oncology Community

Personalisation is the future.
Neoantigen-based vaccines and biomarker-driven combinations will require sophisticated diagnostics and integrated molecular platforms.

Clinical Trials Must Evolve.
Adaptive designs, rational combinations, and strong translational endpoints will be essential.

Biological Infrastructure is Essential.
Advanced immunomonitoring and curated biobanks must become standard components of cancer centres.

Reimbursement Must Keep Pace with Innovation.
New economic frameworks are required to support personalised therapies.

Avoid Repeating Past Mistakes.
Combinations without a biological rationale rarely succeed. In a priming-focused era, combinations must be designed with intention.

Conclusion: Beyond the Checkpoint

We are standing at the beginning of the second phase of immunotherapy.

The next breakthroughs will not emerge from multiplying checkpoints, but from integrating intelligent strategies that activate, shape, and sustain anti-tumour immunity.

The future belongs to therapies that educate the immune system, not merely release it.

Melanoma will continue to serve as the natural testbed for innovation, but the implications will reach far beyond it. "Beyond the checkpoint" is not just a theme.

It is the work ahead of us.

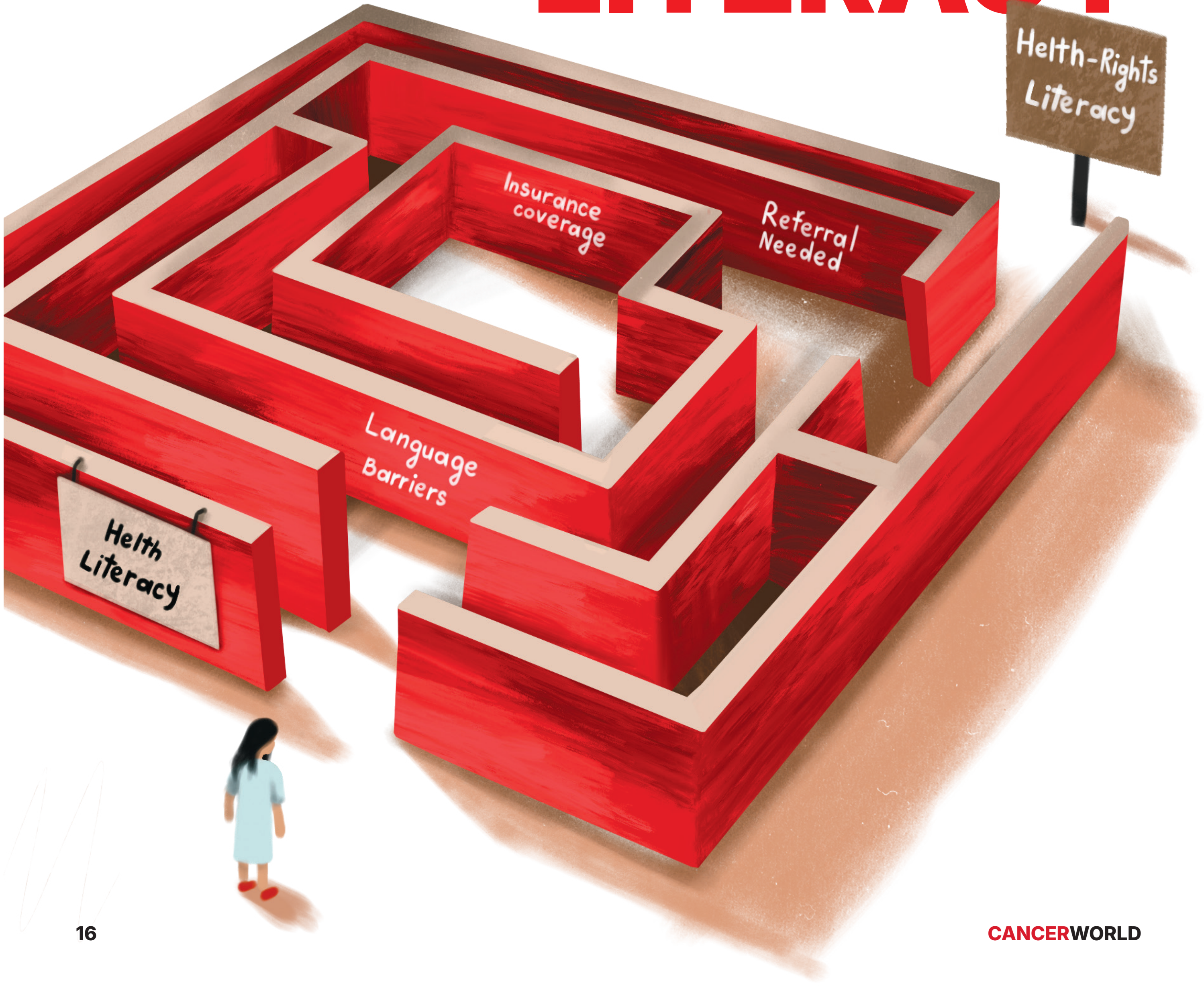
And that work must start **NOW**.

About the Author

Prof. Paolo A. Ascierto is a Professor of Oncology at Università degli Studi di Napoli Federico II and an internationally recognized expert in melanoma and cancer immunotherapy.

He is the Director of the Melanoma Cancer Immunotherapy and Development Therapeutics Unit at Istituto Nazionale Tumori IRCCS Fondazione G. Pascale.

FROM HEALTH LITERACY TO HEALTH-RIGHTS LITERACY



BRINGING THE HOW INTO CANCER-SCREENING AWARENESS

By Christos Tsagkaris

Across Europe, cancer-prevention messages have become increasingly visible: mammography after age 50, HPV testing at 30, colorectal screening from mid-life onward. These messages reflect years of investment in health literacy and promotion. Yet a critical question persists: when citizens know ***what*** to do, do they also know ***how*** to use this knowledge while navigating within their own healthcare system?

To bridge this gap, it is useful to introduce a complementary concept: health-rights literacy. While "health literacy" concerns understanding health information, health-rights literacy encompasses knowing one's entitlements, where and how to access care, what is covered, and which steps are required to use services without bureaucratic or linguistic barriers.

What the Evidence Shows: Awareness Is Rising, Navigation Still Lags

The European Union's 2022 Council Recommendation aims for **90%** of eligible citizens to receive organised screening invitations for breast, cervical and colorectal cancer by 2025 [1]. Evidence shows that participation improves notably when invitations are systematic, personalised, and easy to act on.

However, evidence suggests that improving awareness alone may not suffice. **Studies have shown that health literacy did not strongly predict participation in three national screening programmes**, stressing the need for actionable information for all recipients of health information, and particularly the most vulnerable ones [2,3].

For vulnerable groups, the barriers are deeper. A recent review focusing on hepatitis B and C screening in the European Union/European Economic Area (EU/EEA) identified multiple barriers to the comprehension and uptake of screening recommendations among migrant populations in the region [4]. It appears that booking procedures, referral rules, insurance coverage, and communication formats can often be unclear.

The European Landscape: Geography, Language, and System Design

Geographical Diversity

Across Europe, regional inequalities remain strong. Remote and island areas—from the Greek archipelago to Sardinia, the Balearics, and parts of rural Eastern Europe—often lack nearby screening facilities. Mobile mammography units exist in countries like Greece and Portugal, but covering the needs of the population in relation to their occupational and/or family obligations may be challenging. In Greece, island-based access has long been a challenge. Mobile units operated by public hospitals or NGOs or private donors periodically visit islands such as Naxos, Chios or Samos. Booking information is usually provided in calls available online – and presumably also offline on local press - but booking requires advance notice and local awareness campaigns. For many older women, booking online is not intuitive—even when the service itself is free.

Health-System Pathways

Countries with invitation-based programmes (e.g., France, the Netherlands) generally achieve higher participation rates. In systems with a central coordinating role reserved for primary care, the GP acts as a guide. These regional differences may affect the journey of expats or migrants to healthcare, especially in case their process of registering with local healthcare authorities/general practitioners is incomplete or subject to relocation/asylum seeking processes. Particularly with regard to displaced individuals, maintaining a continuum of screening and transferring health-related information from country to country may be challenging as already reported in the context of pediatric care among migrants [5]. EU initiatives such as the EU Health Data Space (EHDS) prompting interoperability of healthcare services are promising in this regard [6].

Language and Dialect Barriers

For migrants or linguistic minorities, barriers often relate not only to awareness but also to communication formats [7]. Countries such as Greece, Italy and Germany host substantial communities speaking Albanian, Arabic, Russian, Georgian, Armenian, Urdu and Farsi, yet most screening information remains monolingual, issued in the official language of the host country, or in some cases translated only into the official languages of the EU. Providing instruction in the languages used by migrants would enhance their ability to comprehend and participate in screening programmes.

The presence of a number of dialects of official EU languages must also be noted in the context of health-rights literacy. Providing audio-based content in dialects such as Cretan, Ionian or Pontic Greek, or Grecanico in Calabria (Italy), for instance, could strengthen trust as well as awareness among users of these dialects — especially older people and/or members of rural communities.

A further step in breaking communication and comprehension barriers — beyond and within languages — would include sociolects, defined as language varieties used by demographic or social groups. The so-called Gen Z "slang", a dynamic mix of national languages and internationally used English terms, is a representative example of a sociolect. Exploring messaging in this format could enhance the actionability of information by using words closer to the audience's everyday life, rather than a standardised and psychologically distant medical language.

Moving Forward: Integrating System Literacy into Every Screening Effort

A more actionable and equitable approach to cancer screening requires that every awareness effort move beyond information provision to concrete guidance. First, campaigns must be operational, providing clear instructions on where screening can be accessed, how appointments are booked, whether referrals are needed, whether the tests are free, and what happens next.

Second, campaigns should communicate across languages and dialects. Public messages ought to be available not only in multiple and commonly spoken languages with additional audio adaptations in local dialects for radio or television in regions where dialects remain widely spoken. Such communication acknowledges the country's linguistic diversity and reinforces the principle that screening is a universal right, not a privilege reserved for speakers of the dominant language.

Third, messaging needs to be linked to local services. Effective campaigns integrate municipal health offices, mobile mammography units, primary care structures, public hospitals, and civil-society organisations. When recipients of a campaign know precisely which local service they can turn to—and how to reach it—awareness is transformed into access.

Finally, the strategic use of digital governance tools can significantly enhance participation. Digital health wallets, SMS reminders, secure online portals and pre-booked appointment slots have already demonstrated impact in countries such as Greece [8]. Extending these tools to additional screening domains—for example, mailing FIT kits for colorectal cancer screening with QR-code–based activation—can streamline pathways, reduce inequalities, and ensure that individuals are supported at each step from invitation to follow-up. Caution should be exercised to match the complexity of the intervention with the digital literacy and access of the target population.

Conclusion

Europe has built a strong foundation for cancer-screening awareness. The next step—necessary, achievable, and equity-enhancing—is embedding navigation support into every message. **Health-rights literacy** captures this shift: it recognises that people do not only need to know why screening matters, but how to use their rights within a real healthcare system.

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About the Author

Christos Tsagkaris, MD, MPA, MSc; Christos Tsagkaris is a medical doctor from Greece working as a clinician and researcher in Switzerland. In parallel, he is involved in institutional bodies and civil society organisations working on cancer prevention, control and crisis preparedness.

Briefing Box

Turning Awareness into Access: Four Steps to Strengthen Health-Rights Literacy

1. **Always include practical instructions.** Public campaigns should explain how to book screening, whether it is free, and if a referral is needed.
2. **Reach people in their language.** Provide materials in national languages, local dialects, and key migrant languages (Arabic, Albanian, Serbian, Ukrainian, Turkish, etc.).
3. **Connect campaigns with real services.** Work with community clinics, mobile units, and primary-care providers to offer locally relevant pathways.
4. **Use digital tools to simplify access.** SMS invitations, digital health wallets, integrated booking systems, and personalised reminders significantly increase uptake and reduce inequalities.

CANCER TREATMENT AT HOME

INSIDE KENYA'S EARLY EXPERIENCE

By Diana Mwango

For decades, cancer treatment has been anchored firmly within hospital walls, where the complexity and risks of chemotherapy seemed inseparable from clinical infrastructure. But as newer, less toxic therapies emerge, a quiet revolution is taking shape: the idea that certain cancer treatments may be safely delivered in the comfort of a patient's home.

The motivation is clear: reduced hospital congestion, lower costs, fewer long commutes, and relief from the emotional and physical toll of repeated clinic visits. Yet this shift raises essential questions about patient selection, sterility, training, emergency preparedness, and logistics, issues that will ultimately determine whether home-based cancer care becomes a sustainable and equitable model.

Some of the treatments currently being explored for home use include oral therapies, subcutaneous and intramuscular injections, and select intravenous (IV) infusions that carry a low risk of extravasation, a complication in which medication leaks outside the vein.

In 2023, during a clinical study in Nairobi, Nimi Alibhai became the first Kenyan to receive cancer treatment at home, a milestone that brought global innovation directly into a Kenyan living room. "A single nurse would visit my mum's room," she recalls. "She'd begin with triage, my weight, temperature, and blood pressure, and each treatment session took about an hour."

Nimi was receiving a subcutaneous combination therapy called Phesgo, used to treat HER2-positive breast cancer, which can be administered in minutes rather than hours required for traditional IV infusions. "Before I started receiving the injections every three weeks at home, I had completed eight cycles of chemotherapy, followed by surgery and radiation," she says.

At first, she was apprehensive. "I was nervous, but the nurse followed strict hygiene and sterility protocols during preparation, administration, and clean-up. Soon, home felt like the right place to heal, especially for anyone with mobility challenges or who values privacy." The nurse remained in constant communication with her doctor. "Nothing started until the doctor gave the go-ahead," she explains.

The benefits were profound. "The risk of catching infections from other patients was lower. My chemo port was flushed at home. And there was no travelling or waiting. I felt less like a patient. I could have a snack, rest on my sofa, laugh with my family, it eased so much of the anxiety."

Nimi's experience reflects a growing global movement to decentralize aspects of cancer treatment. While hospital-based care remains essential for many therapies, advances in targeted treatments and supportive care have opened the door to safer, more patient-centred models.

Expert Comments

Prof. Mansoor Saleh, founding chair of the Department of Hematology and Oncology at Aga Khan University Hospital, highlights the time factor. Traditional IV chemotherapy regimens can take hours. He gives the example of two commonly used HER2-targeted therapies, originally administered as lengthy IV infusions. "Pre-medication is followed by a slow infusion that may need to be reduced further if a patient reacts," he notes. "Altogether, the process can take nearly six hours."

Newer subcutaneous formulations can be administered in minutes and maintain steady therapeutic levels in the bloodstream. This shift, from long IV infusions to quick injections, is one of the innovations making home-based delivery possible.

The home-health programme involved in the study targeted patients requiring minimal nursing support, physician oversight, physiotherapy, or mental health care. The fact that a targeted biologic therapy could be safely administered at home illustrates how far oncology care has evolved.

Still, Prof. Mansoor cautions that even subcutaneous treatments carry a risk of allergic or hypersensitivity reactions. Because of this, they cannot simply be administered at home without trained medical supervision. In hospitals, staff have access to emergency equipment such as crash carts, tools not typically found in household settings.

Patient selection is therefore critical. Clinicians must evaluate medical stability, home environment, support systems, and proximity to emergency services before approving treatment outside the hospital.

Globally, oncologists see this as part of a broader reimagining of cancer care. Prof. Matteo Lambertini, a medical oncologist and associate professor at the San Martino Polyclinic Hospital and University of Genoa in Italy, notes that the increasing use of targeted therapies, not chemotherapy, now places the greatest burden on infusion clinics. "For many treatments, such as subcutaneous anti-HER2 therapy and several well-tolerated oral agents, we still have patients coming every two or three weeks or monthly to the hospital, even when there is no real need for all these consultations," he says.

Research continues to highlight the feasibility and safety of home chemotherapy. In one study exploring patients' experiences with home treatment, participants reported being better able to adapt to their circumstances, use their time and energy more efficiently, avoid long clinic waits, and realign their resources with what mattered most.

As promising as home-based therapy is, questions remain about equitable access. Not every household can accommodate medical equipment, and not every region has a strong home-health infrastructure, factors that may influence who benefits most from this model.

Yet the direction is clear. Together, emerging therapies and new delivery systems suggest that the future of oncology may be increasingly flexible, humane, and centred around the rhythms of daily life. For some patients, the journey through cancer may soon unfold not under fluorescent hospital lights, but in the quiet familiarity of home.

About the Author:

Diana Mwango is an oncology journalist from Kenya, and a cancer survivor herself.

SURVIVING THE TUMOR, LIVING WITH THE IMPACT

By Enrico Franceschi

"When this tumor entered our lives, nothing felt stable anymore — we had to rebuild our days piece by piece," a caregiver recalls.

Why brain cancer survivorship needs to move center stage — as research pushes into AI, precision medicine and new therapies

When a patient completes treatment for a primary brain tumor, the hardest part is often not over.

Unlike survivorship in many other cancer types, emerging from neurosurgery, as well as radiotherapy, chemotherapy, and disease monitoring is only the beginning of a long and complex journey — one that for some continues for decades, and for some lasts the rest of their lives.

Clinicians and policymakers are beginning to recognize that survivorship in neuro-oncology is not simply a matter of reducing recurrence risk. It is a lifelong process, shaped by cognitive changes, neurological and neurocognitive deficits, psychological adjustment, work and social identity, caregiver burden, and the availability (or absence) of coordinated rehabilitation services. At the same time, the field is advancing rapidly — from molecularly targeted therapies to AI-enabled imaging and adaptive clinical trials — raising important questions about equity and system readiness.

This is the defining tension in brain tumor care today: scientific innovation is accelerating, while survivorship support structures lag behind.

Survivorship Begins at Diagnosis — Not After Treatment

Clinicians involved in the treatment of brain tumors now increasingly frame survivorship as beginning at the moment of diagnosis. Tumor biology, neurosurgical intervention, radiotherapy effects, anti-epileptic therapy, chronic fatigue, endocrine consequences, and cognitive impacts interact over time and cannot be understood in isolation. Cognitive changes may emerge gradually and fluctuate. Emotional and behavioral adjustment may require months or years to consolidate. As one survivor put it:

"Some days my mind is clear and perfectly functioning, and others it slips away from me — and that's the part I never expected."

Core dimensions of brain tumor survivorship include cognitive function, neurological function, epilepsy and medication burden, endocrine and fatigue effects, fertility, psychosocial well-being, work, and social participation.

These are not secondary outcomes. They are the outcomes that determine daily living.

The Critical Unmet Need: Coordinated, Multidisciplinary Survivorship Care

Despite growing recognition, structured survivorship pathways remain inconsistent. Neuropsychology and rehabilitation services are unevenly distributed. Coordination across oncology, neurology, rehabilitation medicine, and primary care often relies on individual clinician initiative rather than integrated systems.

Three persistent structural gaps remain: cognitive and functional follow-up is not routine; rehabilitation pathways are fragmented; socioeconomic and geographic inequities persist.

As a result, patients with similar clinical needs may receive very different levels of survivorship support depending on where they live.

The Next Frontier in Treatment — And the Risk of Widening Disparities

Molecularly targeted therapies and precision treatment have already changed the trajectory of care. IDH mutation status, 1p/19q co-deletion, MGMT promoter methylation, BRAF alterations and histone mutations influence not only prognosis but also eligibility for targeted agents available or now in clinical trial pipelines. Several small molecules are being studied in clearly defined genomic subgroups, including inhibitors targeting IDH-mutant gliomas and agents modulating downstream signaling pathways in pediatric and adult high-grade gliomas. Notably, the European Medicines Agency recently approved the first targeted approach for IDH-mutant low-grade glioma patients, with the aim of postponing disease progression and delaying the need for further treatments in patients with low-risk factors who achieved any type of surgery.

This trend marks a genuine change in therapeutic strategy: the goal is not only to slow tumor growth but to do so in ways that reduce collateral cognitive and neurological impact. However, it depends on reliable access to molecular testing and expert interpretation, which is still not homogeneous across Europe and low-resource regions.

Immunotherapies — including peptide vaccines, dendritic cell strategies, and CAR-T approaches — have entered early-phase clinical studies for gliomas. These trials have shown feasibility and potential signals of biological activity. However, current evidence remains preliminary. Most data come from small cohorts, and durable survival benefits have not yet been demonstrated in larger, controlled settings. Challenges include antigen heterogeneity, local immunosuppression within the tumor microenvironment, and managing treatment-related inflammation. For now, immunotherapy should be viewed as a promising research direction rather than an established clinical option.

AI-assisted MRI analysis and radiogenomic mapping may soon allow non-invasive prediction of molecular markers, improved response assessment, and more adaptive and efficient clinical trial stratification. But widespread clinical use will require prospective validation, regulatory guidance, and reimbursement — without which these tools may remain accessible only in specialized centers.

Why Survivorship Must Advance Alongside Innovation

Extending survival without supporting cognitive and functional outcomes risks shifting burden from healthcare systems onto survivors and their families. Survivorship quality improves only when cognitive assessment and rehabilitation are embedded in care pathways; molecular testing and new therapies are equitably accessible; AI and clinical innovation are evaluated in real-world populations, not only academic centers; caregiver support and social reintegration are recognized as core components of care.

In conclusion, the question is not only how long people can live after a brain tumor. It is how well.

About the Author

Dr. Enrico Franceschi is Chairman of the Nervous System Medical Oncology Department at the IRCCS Istituto delle Scienze Neurologiche di Bologna, AUSL di Bologna, overseeing clinical care, research, and multidisciplinary programs in neuro-oncology.

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CANCERWORLD

The Person Behind
the Legend

Andrea
FERRARI

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THE PERSON BEHIND THE LEGEND

The Portrait of Professor

ANDREA FERRARI

By Shushan Hovsepyan

When I started my fellowship in Italy, I knew I would meet Professor Andrea Ferrari, the Legend whose work I had studied line by line. I thought I was prepared. I had read his papers...

But nothing in the literature prepared me for the person behind the **Legend**.

There are days in your career that you never forget. For me, one of those days was a Wednesday.

I walked into **Progetto Giovani** for the first time, still trying to find my own footing in oncology, still convinced that serious work was conducted in meeting rooms, protocols, and labs.

I saw a group of adolescents laughing loudly at something he had said, and there he was, sitting cross-legged in the middle of them, sleeves rolled up, eyes alive, wearing the kind of smile that fills a room without asking permission.

He wasn't just a doctor.
He was **present**.

Nothing prepared me for how profoundly he would shape my understanding of medicine, empathy, and what it means to care for young people with cancer.

How Did the Journey Begin

When Prof. Ferrari talks about the beginning of his career, he repeats, "Often things come almost by chance and then become important."

He grew up inside the **San Raffaele Hospital**, following his father, a cardiologist, one of the hospital's first doctors, and a highly respected figure.

Prof. Ferrari remembers him with warmth: "I was full of pride for what my dad was doing. When I was little, we always went to San Raffaele's parties, to San Raffaele's retreats. It was a bit predestined, even though I always wanted to write".

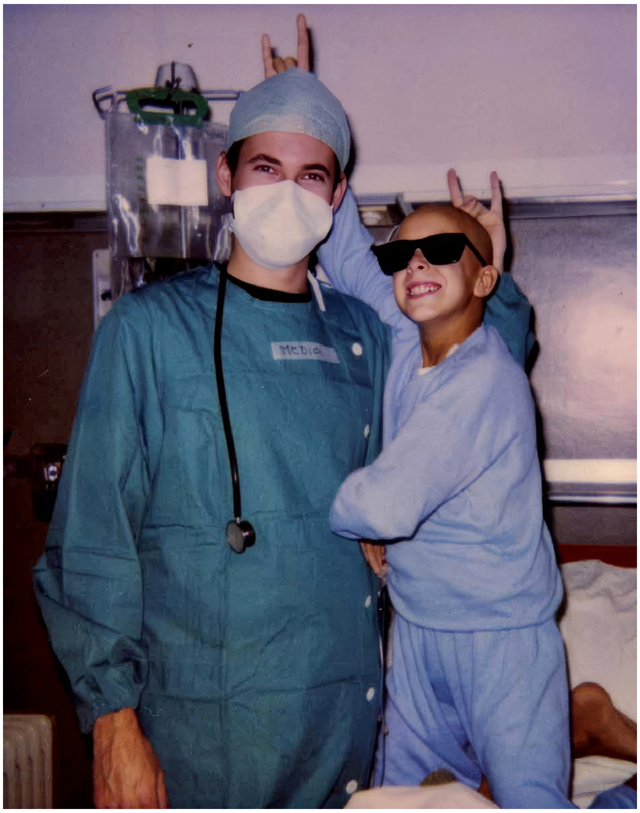
He completed all six years of medical school at San Raffaele Hospital and had already imagined the next decades of his life there. That was the plan he had built.

He says clearly: "I certainly didn't want to be a pediatric oncologist."

During his oncology fellowship, he had to complete a mandatory rotation in the pediatric oncology unit.

He says, "That was the **1st of September 1994**, a precise date, when I first entered into pediatric oncology unit, directed by **Dr. Fossati Bellani**. I didn't want to go there, and **Professor Rugarli** told me, 'Look, it is only six months, do the specialty, then come back."

When he arrived, things changed quickly. "I remember that I **fell in love** within a couple of days," he says. "With everything, with the concept of pediatric oncology, with the atmosphere in the department, with the way to interact with the young patients."



He also remembers his first patient very clearly.

"The **first patient** they put in my arms was a patient I still see, with a rhabdomyosarcoma, one year old. I always say she is my patient "Number One", Francesca.

But we were not pediatricians; we were oncologists, so I had never seen a child. It really **opened my heart** to think of children with cancer."

What began as a six-month requirement became the field he chose for the rest of his life.

Early Leadership: Histology by Histology

Prof. Ferrari describes the **late 90s** as a turning point not only for his career, but for European pediatric sarcoma as a whole. He was in his early thirties when he and **Dr. Michela Casanova** were invited into what would become the core group of the European soft tissue sarcoma protocols. This was the moment when the Italian, German, British, and French groups first joined forces. Few doctors had the opportunity to sit at that table. **Ferrari and Casanova** did, because by then they had already produced a volume of work that was unusual for their age.

As he recalls: "We were 30 years old, and we were in the group writing the new generation of European protocols. We found ourselves in the founding group of the European paediatric Soft tissue sarcoma Study Group (EpSSG), together with sarcoma superstar **Mike Stevens**, **Modesto Carli**, and **Odile Oberlin**. And we were 30 years old... in a world of the very first line."

A historical photo: Jorn Treuner, Christophe Bergeron, Odile Oberlin, Ewa Koscielniak, Modesto Carli, Gianni Bisogno, Adrian Mattke, Andrea Ferrari and Michela Casanova

At the time, **sarcomas** were often treated as a uniform group, without distinction, following the standard approach adopted for rhabdomyosarcoma, the typical pediatric histotype. The lack of literature served as the starting point for their work.

As he recalls: "Michela and I started to analyze our center's series, spending hours, often during the weekend, in reviewing charts. When I started writing, I reviewed everything available. There was nothing, except for papers published five years earlier by **Alberto Pappo** for each tumour type. We studied Pappo's papers and learned from them."

He continues: So we began producing these publications, **fifteen papers** in three years, and now, I have reached **600 papers.**"

Their publications, each dedicated to a specific histology, challenged the prevailing approach and formed the groundwork for separating soft tissue sarcomas by **biology** rather than treating them as a single category. He describes the process with characteristic modesty.

This scientific enthusiasm, achieved while both were still very young, placed Ferrari and Casanova at the centre of the emerging European sarcoma network. Their data and their insistence on biological distinction supported the shift away from managing all Non-Rhabdomyosarcoma Soft Tissue Sarcomas (NRSTS) **"like Rhabdo."** This became a defining conceptual change in the early European protocols.

Then he continues, "This incredible thing of **maintenance** was born... scientifically, it was the most important idea, it was born at our house by **Michela and me**."

He explains: "At the end of the '90s, we started using vinorelbine in relapsed rhabdomyosarcoma. No one in the world was doing that. There was just an abstract from a Brazilian colleague with a few cases. We started with a case series of **fifteen patients** showing the efficacy of vinorelbine."

When the European group convened, the issue was raised again, not as a polished proposal but as a practical question from **two young clinicians** who had observed something promising.

"We brought this idea as thirty-year-old's into the European group, and we were fortunate with Prof. Carli, Mike Stevens, and Odile Oberlin — senior people, but very intelligent.

The pivotal moment came when they had to decide where vinorelbine should fit in the treatment pathway: "We asked ourselves: where do we put it? And that's when we said, **let's invent a maintenance.**"

Maintenance therapy for rhabdomyosarcoma, now recognized as one of the most successful randomized results ever achieved in this disease, was born from that discussion, built on fifteen patients, two young investigators, and a rare environment of scientific openness.

Adolescents and Young Adults: A Different Way of Seeing Patients

When Prof. Ferrari speaks about adolescents and young adults (AYA), his voice changes. Even for someone who has shaped European sarcoma research, he is clear:

"If I think about my work, the biggest mark I have left is in

Non-Rhabdos… but the **AYA world** is the most beautiful thing."

His involvement in AYA oncology began almost by chance. He recalls attending a tiny 7 a.m. meeting at a SIOP congress in the mid-2000s:
"I didn't know anyone. I went into a small room with maybe six or seven people. And there I met **Ronnie Barr** and **Archie Bleyer.**" He refers to them as **mentors**. "They were presenting early data showing **worse outcomes** for AYA compared with children, something very few had paid attention to."

"The term **'AYA'** didn't exist. There were many publications on children, almost none on adolescents and young adults."

That meeting opened a door. By 2007, Ferrari had organized the first Italian meeting on AYA, inviting **Ronnie Barr** and, **Archie Bleyer**. What started as discussions on clinical trial access soon became something much bigger.

The Birth of Youth Project

Together with psychologist (and his great friend) **Carlo Clerici**, Prof. Ferrari began imagining a different kind of space for adolescents in oncology, a space that was not only medical.

It started almost playfully: "At the beginning, we wanted something **colorful**, something fun, something that could attract attention. If I tell a journalist that adolescents have a **46%** survival rate instead of **65%**, no one listens. If instead you make a Christmas song that gets **20 million views**, people listen."

What began as a creative idea soon turned into a structured program, **Youth Project**, a place where adolescents could meet, create, and share their experiences. The aim was simple but revolutionary:

"To use their **words**, their **smiles**, their **eyes** to send messages."

Prof. Ferrari remembers that they were lucky because they immediately had the support of the Pediatric Oncology Unit director, **Dr. Maura Massimino**, and of the charity **Associazione Bianca Garavaglia**, who made new ideas their own.

The weekly Youth Project meeting on **Wednesdays** became the center of Prof. Ferrari's work:
"You can take away everything else, but not Wednesday." For him, the project became almost a personal calling: "I have a great sense of protection toward these young people."

What is the success? "The atmosphere is the key. When you enter, everyone is on the same level, adults and adolescents. They know they are listened to."

And the second reason: "Because **there is a doctor** who does this as his main commitment, not as a hobby. In other places, someone gives five percent of their time. I do the Progetto Giovani as **my main work**."

This doctor-led model gives adolescents something rare: "They see you as a person, not only as a doctor, with dreams, family, football, travel. You sit on the floor with them, joke with them, and take their hands. Protocols are essential, but they are **not enough**."

Over the years, Youth Project grew into a creative laboratory, from music videos to photography, from writing to an original sitcom.

Prof. Ferrari says, "Every year we discover what the adolescents can do, and every year we create something better. We learn from them. We walk together, from the development of **artistic laboratories** to the publication of the projects in **scientific journals**."

The project is now recognized internationally and has become a model for other institutions. Still, he returns to what truly matters: the adolescents, **the atmosphere**, and the simple **human contact** that defines the project.

"Every Wednesday is a story. Just as we say we don't want to treat a patient; **we want to treat a person...**"

The Place and The People

When Prof. Ferrari looks back at what shaped his career, he says, "What influenced me most was the place where I worked. Not just a hospital, but The **INSTITUTE** — in the strongest sense of the word. The training, the atmosphere, the environment were vital, beyond any single person."

He adds, "All the colleagues I found, even those with whom I argued, left a mark. Of course, I must recognize the two chiefs of units, **Dr. Franca Fossati-Bellani** and **Dr. Maura Massimino**. They formed what you become."

He remembers a decisive moment with **Mike Stevens**. When the EpSSG needed a coordinator for the **NRSTS 2005 protocol**, choosing an Italian was politically difficult because **Dr. Bisogno** had already been indicated for the rhabdomysarcoma protocol. Nevertheless, Mike Stevens insisted, "No, we're not discussing this. Even if he is 35 years old, **Andrea does it**." That support allowed him to take on responsibility very early.

Speaking about Alberto Pappo, he says, "Even without having met **Alberto Pappo**, in my first years I considered him as sort of a mentor." When they eventually met in the United States, the exchange became a defining moment: "I told him, 'In Italy my wife calls me the **Alberto Pappo** of **Italy**.' And he said, 'That is incredible. Do you know what my wife calls me? She calls me the Andrea Ferrari of the United States.'" Prof. Ferrari adds, "I laughed for an hour. I loved him immediately — not because it was true, but because he was so generous."

He mentions **Carlos Rodríguez-Galindo**: "We met by chance at a congress in Guatemala. We became friends, spending nights talking, not about work, but about books, films, life."

He also talks about friendships that came naturally over the years: "Our scientific career is a long trip, and along the way you find friends."

He speaks warmly about **Daniel Orbach**: "Another very good friend of mine."

About **Gianni Bisogno**, he says: "I've probably argued more with Gianni than with anyone else. But I truly respect him. We did everything together. He is like your twin, the one you fight with, but he is someone you've trained a lot with."

If he needs to think about a special person in his hospital, he thinks about **Stefano Chiaravalli**: "With Stefano, there is harmony in everything. His passion for the clinic allowed me to take a little less care of the clinic and more of the science."

In the end, his message is simple: oncology careers are shaped by **places**, by **people**, and by **years** of shared work. No one builds anything alone.

The Chapter Not Written in Protocols

Prof. Ferrari has a lot of **hobbies**. But he explains them in his own way: for him, the things he shares with adolescents are simple and human: **traveling**, **football**, **books**, and **writing**. They are the parts of his life that help them see him as a person.

"In my opinion, hobbies exist to create a **compartment** where work doesn't enter, even when you love your work so much that it could fill everything. It's not about escaping something you dislike; it's about protecting space for the rest of your life."
He explains that oncology is very invasive — "in a good way," — and that every doctor needs a space untouched by the hospital. For him, that space became very structured.

This is why long **intercontinental** trips became essential: "For two weeks, nobody writes emails, nobody asks about cases. You are far away, and the world does not enter.

He quotes **Bruce Chatwin's concept of distance**, the concept of being far enough that your mind breathes differently. Not as an escape from something unpleasant, but as a way to protect passion from burning out.

To keep his worlds separated, he even created a pseudonym years ago:

"**Gaetano Pappuini** was born to give me a space where I could put other things."

It helped him balance life at home as well. He and his wife are both pediatric oncologists, two people fully immersed in the same demanding field: "We couldn't go home and talk about patients or protocols after dinner."

Gaetano Pappuini became **the door** he could close when medicine needed to stay outside for a while.

One of his passions is **writing.**

The scientific book about Adolescents and Young adults with cancer by Andrea Ferrari and Fedro Peccatori

The story of his **first novel** book began almost by accident. He tells it with a kind of amused affection.

"It was ten years ago, I had two aunts in their nineties. Every Saturday, I went to visit them. They only asked about pain and medicine. He tried to keep the conversations alive.

"One day I told them, 'Tell me about the past.'" continues "I opened closets full of incredible documents, the testament of my grandfather, a prison diary from the First World War, photographs from the 1800s... an unbelievable amount of material."

He gathered everything and created a large book for the family: "I simply photographed everything and added short captions."

Years later, during COVID, the book took a different turn. That strange combination of lockdown, insomnia, and a pile of family notes pushed him back to the book.

"I don't even remember how it happened... I started transforming all those notes into a novel." At the beginning, he didn't plan to publish it. It was something private, something he did for himself. But now the book is published, with the title "Wars are always lost", and is having a good success in Italy.

Michela Casanova

Prof. Ferrari says, "We both had our own stories. It wasn't that we fell in love immediately. But from the very first weeks working together, we created a **professional feeling** that was really unique."

He describes the early period as intense, shaped by exhausting shifts and constant responsibility.

"In those years, the department had many changes. We were very young, doing shifts of 24 consecutive hours. They were very heavy. When **Michela was on shift**, I went to **help her**. When **I was on shift**, she came to **help me**."

One night, he says, remains the symbol of how their bond formed.

"There was this boy, Claudio. We were both there at night, giving morphine, sedatives, trying to let him sleep. He weighed 100 kilos. We were desperate, but also moved. These **experiences** shape you. These **stories** and these bonds are the strongest part of everything, even the difficulties."

He is direct about how challenging it is for two oncologists in the same field to stay balanced. "It's not easy. You deal with the same things. You risk internal competition. And there is the danger that one becomes strong and the other becomes subordinate."

"But that did not happen. It has never been like that. Not for a second. I think we were very good at this. And certainly love helped us. **She** and our **son Pietro** are the deepest meaning of my life."

The Passion

When asked what he tells young doctors, Prof. Ferrari answers without hesitation: **"Passion"**

"I think the strongest message I try to give is the passion for your work," he says. "**Medicine, not only oncology**, is a **job of passion**. You can't be a doctor without passion."

He often reminds students of the energy they had at the beginning: "I remember the face we all had when we graduated. We couldn't wait to enter the world. That was the passion you had at 25."

"In this job, you risk losing the flame. The work is tiring, difficult. Administrative things wear you down. Disappointments wear you down. Expectations wear you down."

The challenge, he says, is not starting with passion; it's keeping it.

The Journey

Prof. Ferrari is clear-eyed about the stage he is in.

He has just begun his **university appointment** and finds real joy in teaching.

"I like teaching a lot. Dedicating myself to young people, I care about that deeply."

At the same time, he carries two enormous responsibilities: the **EpSSG**, where he will become **Board Chair**. "I would like to take a step back from the heavy scientific work and offer more vision, **governance**, **relationships**, the direction of things, AND **Network of Expertise (NoE)** on AYA developed within the **Joint Action JANE**, which he co-coordinates. "It takes a huge amount of time. It's **policy** work, but it is very important."

He never complains about the clinic; in fact, the opposite.

"I would **never give up my clinic**. People say the outpatient work is tiring…But I would never want to lose it.".

His message is simple, and he quotes **Calvino** to make it clear:

"The greatest fortune a person can have is to find a work that you truly love."

From the Author

I have read every protocol and paper he ever wrote.

But **the most important thing** he taught me isn't written anywhere.

It is the **way** he **treats young people** as whole human beings.

The way he protects Wednesday like something sacred.

The way he keeps passion alive when the work becomes heavy.

As his mentee, that is the chapter I carry with me the one not written in the protocol, but written directly into my heart.

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Common Sense Oncology

Putting Patients Back at the Center in the Era of Cancer Innovation

By Adriana Albini

Precision medicine, immunotherapy, and cellular therapies have reshaped the landscape of oncology, turning once-fatal diagnoses into chronic, or even curable, conditions. These breakthroughs represent extraordinary scientific progress and a deepening understanding of cancer biology. Yet beneath this success runs a quieter, more troubling story. Many patients experience marginal clinical benefit, encounter significant toxicities, or face severe financial strain, while others still lack access to basic treatments. The paradox of modern oncology lies in this coexistence of innovation and inequity.

The Paradox of Progress

The gaps between innovation and access, between surrogate endpoints and lived experience, and between cost and value have become too stark to ignore. These tensions do not diminish the achievements of cancer research, but they compel the oncology community to ask whether progress, as currently defined, truly serves patients. This question lies at the heart of Common Sense Oncology (CSO), a global movement that seeks to align evidence, communication, and policy with outcomes that matter: living longer, living better, and ensuring that everyone, everywhere, can share in those gains.

Conceived in 2022 as a collaboration among clinicians, researchers, and patient advocates, CSO took shape at an international meeting at Queen's University in Kingston, Canada, where its three foundational pillars—evidence generation, interpretation, and communication—were defined. It was formally launched later that year in The Lancet Oncology through the publication of its manifesto, followed by a 2025 methods paper detailing practical standards for the design, analysis, and reporting of phase III cancer trials.

Voices Behind the Movement

Among the most compelling voices of this initiative is Chris Booth, a Canadian oncologist and health-services researcher whose work has consistently challenged the profession to examine whether cancer care truly delivers value to patients. Booth has written extensively on disparities in global oncology, the limitations of surrogate endpoints, and the ethics of care near the end of life. Together with Bishal Gyawali, he co-founded CSO to restore balance between innovation, evidence, and equity. Among those shaping its international reach, Dario Trapani, an oncologist at the European Institute of Oncology and the University of Milan, has been instrumental in translating its ideals into methodological and ethical practice. As co-author of the Lancet Oncology 2025 Policy Review, Trapani helped formalize CSO's principles for designing and analyzing phase III trials, insisting on overall survival and quality of life as primary endpoints, transparent reporting of toxicity, and

From left to right: Chris Booth, Dario Trapani, Beate Wieseler, Monica Racovita, and Maya Matthews.

fair choice of control arms. His collaboration with Booth and colleagues has been central to transforming CSO from a critique into a concrete framework—linking methodological rigor, ethical responsibility, and global equity.

The need for such a framework is underscored by the lived experience of patients. Clinical studies show that roughly one in five patients with advanced cancer experiences severe (grade 3–4) treatment-related toxicities, including infections, fatigue, and organ dysfunction. These adverse events often lead to dose reductions, treatment delays, or discontinuations, and are associated with declines in quality of life, functional status, and even survival. Managing toxicity is therefore not merely a matter of safety but a determinant of outcomes: effective cancer care must include the prevention, anticipation, and mitigation of harm through patient-specific risk assessment and robust supportive care.

Time toxicity adds another dimension. Cancer treatment can consume hundreds of hours across multiple appointments, particularly for patients on chronic oral or intravenous regimens. The cumulative time burden erodes patients' ability to work, care for family, or simply enjoy daily life. In palliative contexts, the trade-off becomes starker: the time spent pursuing treatment may equal or exceed the time it adds to survival. Recognizing this dimension as a form of toxicity reframes decision-making around value and purpose.

Redefining What Counts as Meaningful Benefit

Despite the growing awareness of these issues, clinical research has not always kept pace. A 2025 European Journal of Cancer analysis led by Omar Abdihamid applied the CSO checklist to 55 phase III trials published in 2023, revealing just how wide the gap remains between aspiration and practice. Less than half measured overall survival as a primary endpoint, and only a minority reported quality-of-life data or conducted sensitivity analyses to account for patient dropout. Few acknowledged the time or financial cost to participants. The worth of a therapy, CSO argues, cannot be judged by hazard ratios alone. True value in oncology must include the lived experience of treatment—the physical, emotional, temporal, and financial toll it exacts.

The erosion of endpoints mirrors a deeper cultural drift. Over the past two decades, the proportion of randomized trials using overall survival as their primary measure has sharply declined, replaced by surrogate metrics such as progression-free survival or objective response rate. These indicators may expedite regulatory approval but often fail to capture meaningful benefit. Approvals based on surrogate endpoints can expose patients to toxicity and cost without proven gains in survival or quality of life. The CSO framework insists that such endpoints be used only when validated and interpreted alongside robust patient-reported outcomes, ensuring that the success of a therapy reflects what patients themselves value.

From its inception, CSO has been a deliberately global and multidisciplinary effort, drawing contributors from academic centers, public hospitals, and community oncology practices across North America, Europe, Asia, and the Pacific. It represents not an institution but a movement—a shared commitment to re-centering oncology on outcomes that matter to patients. Its purpose is not to oppose innovation, but to ensure that innovation serves patients meaningfully. CSO calls for stronger evidence generation, more rigorous interpretation of trial data, transparent communication with the public, and a commitment to equity in access. It proposes a disciplined kind of common sense—one that asks of every intervention: Is the benefit meaningful? Is the evidence robust? And is the access fair?

Europe has proven a particularly fertile ground for CSO's ideas. With its emphasis on universal coverage and value-based health care, the region provides a natural laboratory for testing how innovation and equity can coexist. The European Society for Medical Oncology (ESMO) has long played a central role in shaping Europe's approach to value, evidence, and fairness in cancer care. Through its Cancer Medicines Committee and initiatives such as the ESMO Magnitude of Clinical Benefit Scale, the society has sought to define meaningful benefit in transparent, reproducible terms. This framework invites decision makers not only to ask whether a drug works, but how much it helps, for how long, and at what cost—to the patient and to the system. Such questions align closely with CSO's principles, which argue that survival, quality of life, and access must be evaluated together rather than in isolation.

This convergence of priorities was made explicit at the ESMO Congress 2025 in Berlin, where CSO featured prominently within the scientific program. The symposium "Common Sense Oncology: Outcomes That Matter" brought together clinical trialists, health-services researchers, and policy-oriented oncologists from across Europe and beyond. Discussions centered on how to ensure that regulatory evidence is mature and clinically interpretable, how reimbursement can be aligned with genuine patient benefit, and how patients themselves can help define what "benefit" should mean in practice. The visibility of CSO at ESMO marked a turning point: once seen as a critique of excess, it is now part of mainstream European oncology, reshaping how progress is defined, measured, and communicated.

While the principles of Common Sense Oncology have gained broad resonance, translating them into everyday clinical practice is not without difficulty. The modern oncology ecosystem—driven by scientific ambition, regulatory urgency, commercial incentives, and patient hope—does not always align with the measured, patient-centered approach CSO promotes. One concern is that stricter standards of meaningful benefit might slow the pace of innovation or limit early access to new drugs. Yet, as CSO argues, genuine progress depends not on speed but on substance: a therapy that reaches the market quickly but offers only marginal improvement diverts resources from interventions that could provide greater population-level benefit.

Equity remains a stubborn barrier. Even therapies supported by strong evidence often remain out of reach because of cost or infrastructure. CSO extends its principles beyond trial design to the organization of care itself, arguing for transparent, proportionate resource allocation. But its most important message is cultural: progress in oncology should be judged not by novelty, but by meaningful, measurable benefit for patients. CSO invites the oncology community to pause, reconsider, and ensure that every innovation genuinely earns its place in patients' lives.

About the Author

Prof. Adriana Albini is Co-Editor-in-Chief of CancerWorld Magazine and a Scientific Collaborator at the European Institute of Oncology in Milan. She is the Past Chair of the Cancer Prevention Working Group of the American Association for Cancer Research (AACR) and currently serves as President of European Women's Management Development.

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I LIVE FOR TWO

ISABEL'S DAYDREAMING WORLD BETWEEN GRIEF AND LIGHT

By Yeva Margaryan

When Isabel Deprince, a formerly successful model, describes the moments she feels most like herself, she doesn't mention spotlights or runways. She talks about being alone in her studio, sleeves rolled up, paint drying on her hands. Painting, she says, is "a way of a language for me to speak."

It became that language out of necessity. After losing her younger brother to cancer at just twenty-one, Isabel returned to art as the only space where grief could breathe and where words would no longer reach.

"Often when I'm just in my atelier doing nothing and lying on the sofa," she says, "I'm just thinking, looking at the wall and dreaming and imagining my next project, my next idea, and just building that world in my head."

In those imagined worlds she lays down not only color and movement but something far more intimate. "Every artwork you have is also a piece of yourself," she says. "People ask me sometimes, 'But is it not hard to sell a part of yourself?' and I'm like, actually I feel proud... that is a part of me that I translated onto a physical form. I feel very proud to let them travel all over the world and live in someone else's house."

Born with "a Free Spirit"

Isabel can't remember a life before drawing. "I think I was born an artist," she says. "I had this free spirit, and my mother encouraged me a lot for that, and I'm super grateful."

Her mother recognized early that art was not a hobby for her daughter; it was a refuge. She enrolled Isabel in small art camps, weekend workshops, and early art classes. "It was just fun," she recalls, "but my mother felt like it was something that I was feeling good and safe in. She actually built that world for me before I could build my own because I was too small."

By fourteen, school no longer fit. "Normal school didn't work for me," she says. "It just didn't make sense. I'm not not smart, it's just that I could not fit in, and I thought out of the box, I thought differently."

She entered art school, where she balanced academic courses with creative training until eighteen. Then she left Belgium altogether, stepping into a world that would both expand and unravel her sense of self.

Photo credits: Charlize Renée

A Beautiful Experience That "Was Not Nourishing for the Soul"

Becoming a full-time model at eighteen offered a version of life that many dream of and few achieve. "I left Belgium and I went on a worldwide model, an experience of a lifetime," she says. "It allowed me to travel to places that I wouldn't have at that age, to meet amazing people, to get very big connections, and to see the fashion world from inside."

"I view it today as a beautiful experience," Isabel says. But beauty, she learned, is not the same as belonging.

"The other side is that I did feel very disconnected with myself," she explains. "Even though I got success quite quickly, the longer I was in it, the more I felt like I was losing my own identity."

In fashion, identity is fluid, but not by choice. "We're always a bit the view created by the brands," she says. "You're all the time incarnating another persona almost." Over time, her sense of self blurred. "After years and years I did not know who I was and this was making me depressed. To be judged all the time on exterior and appearances, it was very hard because it's not very nourishing for the soul."

She remembers asking herself the questions that eventually forced her to walk away: Who am I? What do I want? Who is Isabel, beyond the images she performed?

"For the moment I'm just one of the models," she thought. "Everyone knows Isabel but this is not me. This is just the image they created and I created and I was acting the whole time."

Leaving the industry, she says, became an act of survival. "For me it would be ultimate freedom," she says. "The freedom of being you and the freedom of expressing yourself to the world without any fear. If they don't like it... at least there will be one that likes it. The moment you let go of fear and just say, I do what I do... that's the ultimate freedom."

But her escape from modeling wasn't born from ambition. It came from grief.

Photo credits: Charlize Renée

"My Brother in Belgium": A Wake-Up Call

When Isabel explains the moment she realized modeling no longer made sense for her, she answers without hesitation: "My brother in Belgium."

Her younger brother was twenty-one when he was diagnosed with cancer. The day after he died by euthanasia, Isabel woke up feeling as if something fundamental inside her life had broken open.

"I woke up the next day feeling like my whole life was meaningless," she says. "Not that modeling was meaningless to me, but I just realized how fragile time is and how easily we can spend our lives passing through and not really truly living it."

She called every agent she had and quit. "I didn't want to pass anymore," she says. "I wanted to create something, something of my own. I felt like I had a bigger purpose in life." His death, she says, removed the illusion of infinite time. "It just made me realize: it's very rare when you die at 21 of cancer, but it made me realize, you know, it's so crazy if in one year my life ends. Models will be replaced... you can Google and find a few pictures but you didn't do anything of yourself."

"It was kind of a wake-up call," she says. "I had fun, but now it's time for me to live my life."

She was twenty-four. "It ages you in an instant, the way a decade might," she says. "It's so profound that either you let yourself be carried away completely and it destroys your life, or you turn around your whole life."

She chose the second path, but first she had to survive a year defined by isolation.

Grief in a 45-Square-Meter Apartment

Her brother's euthanasia and funeral occurred in the first year of the COVID-19 pandemic. She spent a week with him before his death, and another week before the funeral, restricted to only fifteen attendees. The next morning, she boarded a train back to Paris.

"I directly went into confinement," she recalls. "One month not seeing anyone, not hugging anyone."

Her Paris apartment was small, 45 square meters,and silent. "I had a lot of grief," she says. "I closed myself completely off and I was just painting morning till evening. Painting and painting."

One of the first works she made was a raw depiction of the moment he slipped away. "That was for me like when my brother was taken away from me," she says. "Every painting that came out in that week was just me talking, talking, talking to myself."

But painting wasn't her only coping mechanism.
"Sadly to say, I was just drinking," she admits. "It started with a glass in the evening because I was so alone, there

Photo credits: Charlize Renée

was nothing to do, and it became a bottle."

Her mother, a doctor, had warned her that witnessing the euthanasia could be psychologically devastating. Isabel went anyway. "I promised my brother I want to be there," she says. "If I didn't see it, I don't believe it. I would maybe never accept it and still wait for him to come back."

The images replayed in her sleep. "I would wake up at 2, 3, 4, 5 a.m. screaming, reliving that scene," she says. "The only way for me to sleep was to drink until I passed out."

Healing, she says, didn't arrive alone.

"It Was a Stability That I Needed"

Isabel speaks with softness about her former partner of nearly five years. "I have to give credit to my ex-partner," she says. "He offered me stability, not only financially but emotionally during that period. It gave me three years to work on my art in the way I wanted."

"I don't know if we were not together if I would have gone on the same path," she says. "He let me be my own and explore my freedom."

They eventually helped each other reduce their drinking. "I actually sobered him up," she says, laughing lightly. "We needed to find a healthy balance. We helped each other." Soon after, he lost his father to leukemia. Isabel, still grieving, stayed beside him. "I knew how to be there because I went through it," she says. "I knew it was more important to be there in silence."

"It was the stability that I needed," she repeats. "I was so young, in another country, far from my family, and a lot of my friends disappeared when I went through that loss. I'm super grateful I crossed paths with him so early on. It gave me beautiful support."

A Swing, a Fall, and a First Understanding of Love

When asked about her most vivid childhood memory with her brother, Isabel falls quiet. "I lost a lot of memories of us," she says. "I think maybe my brain is adapting to a world where he doesn't exist and protecting myself from that."

But one memory remains intact. "We were on this swing balance when I was like five or six and he was three," she says. "I was a hyperactive kid... my brother was the calm one and I was jumping like a maniac on it."

Her brother fell and hit his head. "I thought I killed my brother," she says. "I ran to my grandmother... I thought he was dead."

He wasn't, but the moment altered her sense of responsibility. "I think I realized in that moment that I was a big sister," she says. "I always felt like a protector over him. That was a very big key moment for me."

Daydreaming, her upcoming exhibition, feels like a continuation of that instinct: a world built to protect him when she no longer can.

The Color of Cancer

What color is cancer in her work?

Isabel retrieves a painting from the period just after her brother's diagnosis. "I was very inspired by Miró at that time," she says. "I painted my brother and it has this turquoise green. It's not really a warm color. It's a very cold color."

Many works from that time share similar tones: "green, blue, cold."

When told that green is often associated with spring, she answers gently: "Well, it was kind of a new beginning of my life. I mean it was the end of the year, but..."

Colors, Isabel says, aren't choices, they arrive. "Colors are like an emotion and I do not think about colors. My colors evolve a lot. When I was very depressed there was a lot of blue, but sometimes a little bit warmer as well."

One early painting mixes orange and blue. "It is very sad," she says, "but it has the warmth of that hug of that goodbye."

"I think that is the translation... the non-communication between souls," she says. "It goes through color because it does move something in us."

Photo credits: Charlize Renée.

Horses as Messengers Between Worlds

In Daydreaming, Isabel's new collection, horses appear across every canvas, realistic in some, abstract or dreamlike in others.

"In Daydreaming I'm actually portraying my brother in a physical form in every single painting," she says. "They come in different ways, but it's always him."

The horses serve a purpose too. "For me they are like a guide, a totem, a presence," she says. "I portray myself maybe through the horses, those are kind of me with him." Because in her imagination, they can go where she cannot. "I cannot be in that world with him because I'm here," she explains. "So I created horses and I send my own horses as my messenger to that world to be with him and to keep him safe."

"Daydreaming is really an open book of my mind," she says. "A portrait of how I imagine him living today inside a world." If her brother could walk through the exhibition, Isabel believes "he would recognize himself in all of them."

"His portrait is in every single one and his energy is really in every single one," she says. "It's not fully about resemblance but about that emotion. You start to feel them as an energy, as a light. That's how I painted him, not as a fixed image but as an organic living feeling. It's a trace of him, a heartbeat light."

Daydreaming: An Exhibition of Liberation

Daydreaming is both an homage and a release.
"I created this collection as a world for him to live in," she

says. "And I realized that this is the beginning of my real existence as an artist."

For years, her brother's death felt like a blockage. "I'm freeing myself from that blockage with creating a world and leaving him in that world," she says. "It's a goodbye, not forever, but a moment to liberate myself and give him a place."

"After this collection I want to become me and free myself of everything that happened," she says. "It's my exhibition of liberation."

She plans to donate a percentage of sales to cancer research and to children living with the disease, turning pain into forward movement.

But more than anything, Isabel hopes Daydreaming becomes a point of light for anyone navigating darkness. "The most important for me would be that this whole collection inspires people to not give up when it's hard, when it's dark," she says. "If we look at one light point long enough, the whole room will light up. We can find lights again, whatever situation we're in."

Photo credits: Charlize Renée

Art as a Language "From Soul to Soul"

For Isabel, art is what remains when language collapses.

"I think I can speak much more honestly through a painting than I ever could with words," she says. "Vocabulary is quite limited… to capture the complexity of certain situations and how we feel, that's true art."

Art, she believes, is "a more universal language. Everyone understands it. You don't need to learn it." Even a baby, she says, can feel its energy.

"I can make someone feel exactly what I feel without ever having to explain it," she says. "For me that emotion, that transmission, is real communication because it's when you talk from soul to soul."

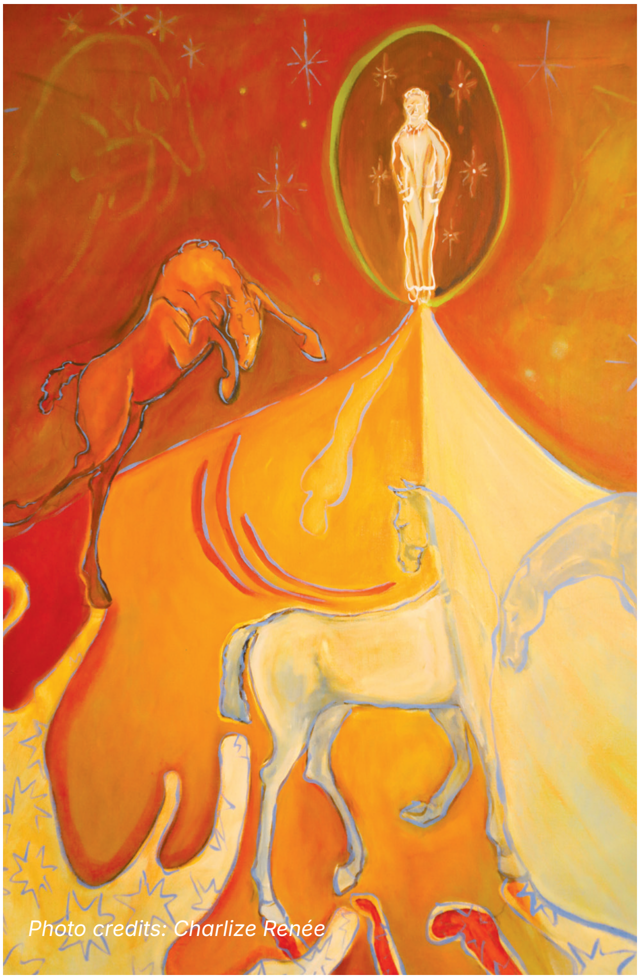

Photo credits: Charlize Renée

In a world that scrolls faster, hides more, and numbs more easily, Isabel fears we are losing something vital. "We've disconnected with so many things," she says. "We miss out on so much emotion. And I'm surprised with how much depression there is within the young community. We really need to address how to feel again."

"I think it's now or never that we need to change something," she says. "We need to make a new movement and make people aware again."

Her contribution to that movement is Daydreaming, a world of turquoise greens and warm oranges, swing-set memories and galloping horses, grief and stubborn hope. A place where love continues, shape-shifts, and refuses to disappear. And where a young woman who left the catwalks behind can say, with quiet certainty:

"I live for two."

Photo credits: Charlize Renée

BETWEEN
GRIEF AND LIGHT

RESEARCHER'S PERSPECTIVE ON THE TIME TOXICITY OF CANCER CARE

By Arjun Gupta

Oncology has seen tremendous progress over the last few decades. Yet, for advanced solid cancers, some new treatments offer only a few weeks of survival benefit. Meanwhile, the amount of time spent in pursuing these new treatments can be substantial. Time is spent in visits to the clinic, for bloodwork, for scans, for infusions, to see the doctor. Time is spent in cars and buses to get to appointments, in parking lots, and in waiting rooms. And time is spent poring over perplexing medical bills, filing leave from work, and on annoying holds during phone calls with the insurance company. In addition, time is spent by family members, by friends, by well-wishers— i.e., by informal care partners— who often put their own life on hold. All this time adds up. And this time spent in cancer related tasks and procedures, often all-consuming, described as a "full-time job," "a completely new vocation," and "we do cancer, that's what we do," is what is termed, ''the time toxicity of cancer care''.

Time toxicity is relevant for every person with cancer, but perhaps most so for people with advanced cancer who face decisions about pursuing treatment in the context of limited remaining time. For some treatments, the time spent pursuing, receiving, and recovering from a treatment may dwarf the modest gains offered by the treatment. This does not make a treatment ''right'' or ''wrong''— that is up to an individual and their oncologist to decide— but current clinical trials do not report any measure of how time burdensome a treatment is. Consider Ms. Thompson, a 75-year-old woman, a retired nurse, a loving grandmother, and a passionate gardener. She has lived with advanced stage cancer for a year; now new spots have appeared in her lungs, and her body is racked with pain. She knows her time is limited. Her goals are to maximize time at home, with her grandchildren, and with her flowers. She needs to decide between pursuing a treatment with a limited expectation of clinical benefit and considerable investment in time, or foregoing cancer-directed treatment in favor of home- based symptom management.

If we agree that calculating and reporting time spent on cancer care is important, a key question is, '''How do we measure time?'' Time can of course be reported objectively- in hours and minutes- but this can quickly become overwhelming. Imagine an oncologist explaining to a patient that Treatment A would be associated with 3 hours 40 minutes of infusions, 45 minutes in the waiting room, and 1 hour 30 minutes of monitoring, thrice a week; and Treatment B would be associated with 1 hour 25 minutes in infusion, 50 minutes waiting, and 45 minutes monitoring - peoples' heads will quickly spin trying to grasp the burdens (I am already confused writing this). On the other extreme, reporting time based on a person's lived experiences, while person-centered, may not provide additional clarity. One patient may not consider multiple visits a week burdensome, and may in fact value the time in infusion and the social aspects of the visit, while another may find the drive and visit to be a burden or a waste of a precious resource: their own time.

How can we report time toxicity using a measure that is both intuitive and person-centered? With my research team, we conducted in-depth mixed-methods (quantitative and qualitative) analyses and concluded that the best method for reporting the time invested in therapy and therapy-related tasks ought to be ''health care contact days'', or more simply, ''contact days''. We define "contact days" as the number of days a person spends receiving in-person care outside the home, in any setting. This was guided by two key findings:

1) that seemingly short clinic visits often turned into all-day affairs for patients and their care partners- the average home-to-home time for the simplest clinic visit, for example, for a simple blood draw, was often several hours- and truly ''short visits'' did not really exist;
2) that patients described ''getting out of pajamas, into pants, traveling to the clinic, and dealing with the inefficiencies associated with clinic workflows'' as truly burdensome, compared to home-based care. We recognize that this measure is imperfect- a night spent in the intensive care unit is considered a contact day and so is a day with a clinic visit for a scan- and all these are associated with very different experiences and gravity for patients and care partners. However, overall contact days can still help communicate expectations to patients.

Consider an oncologist discussing two treatment options with a patient and explaining that Treatment A on average would be associated with 4 contact days a month, and Treatment B with 10. We proposed this framing can aid patient decision-making and add specificity and clarity to the discussion. Our current work focuses on operationalizing contact day reporting in clinical trials. While these concepts are not new and will not surprise the experienced oncologist or the veteran patient, there is a new interest in addressing this in a more rigorous fashion to expose the hidden perils of spending too much time in medical settings, especially when time itself is the prize patients are seeking from the investment in treatment. Introducing the term ''time toxicity'' that was first proposed in 2022, while controversial and loaded, served as a ''lightbulb moment'' for the oncology community to recognize the extent of the problem. I see parallels to the concept of financial toxicity that was coined around 2010, after which we saw an abundance of reports describing the multiple facets of financial hardship and ruin experienced by cancer survivors and their families. This, in turn, required oncologists to consider these aspects when counseling patients about their options for treatment and care.

I have similar hopes for the time toxicity concept. Since 2022 when we first saw publications characterizing time toxicity, this dimension of lived experience has been measured in populations facing advanced cancer. The result of this new awareness is that oncologists and trialists have implemented changes focused on mitigating this toxicity, such as offering telemedicine checks, home based care and offering patients the option to have laboratory studies performed closer to home on a more convenient schedule. And perhaps not unexpectedly, the biggest barrier now remains the oncologist's own time crunches: shorter outpatient clinic slots, documentation requirements, and bureaucratic tasks (such as prior-authorizations for those practicing in the United States) that take up time and threaten our collective sanity and wellbeing. I often wonder how we can expect a clinician to think about patients' time, when they have no time...

On that note, I do believe that the single biggest advance in medicine will be creating more time with patients. I read this somewhere and have been searching for the author for attribution. And while I do not yet have a universal solution to fix all time toxicity in mind, I want to, as a start, at least thank you, dear reader, for your time.

About the Author

Dr. Arjun Gupta is a gastrointestinal medical oncologist at the University of Minnesota through December 2025, and will join the City of Hope Cancer Center in Arizona on December 29, 2025. His primary research focus is identifying, understanding, and improving the hidden toxicities of receiving cancer care.

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