

The road less travelled



In our Roadmap articles, we ask authors to provide a sense of direction to a field, to encourage new lines of thinking and experimentation, as well as opportunities for collaboration.

This month, *Nature Reviews Cancer* opens its pages to a new article type, the ‘Roadmap’. But what exactly is a Roadmap, how does it differ from our traditional Reviews and Perspectives, and what do we want to achieve by publishing them? By definition, a roadmap is a shared vision that sets out a goal or outcome and the requisite steps needed to reach it. The intention behind our Roadmap articles is no different. We see Roadmaps as going beyond a survey of the latest literature to be a resource or reference for scientists perhaps just entering a field or looking for new directions in their work. These articles will set out or, in some cases, reframe the research questions that need to be addressed in a certain field and propose how to address them. We hope that by presenting these open questions, these pieces will inspire new lines of thinking and experimentation, foster collaborations, especially those of an interdisciplinary nature, and drive community thought. Much like our Reviews and Perspectives, we still aim for our Roadmaps, when explaining the challenges and opportunities within a field, to be clear, concise, timely, balanced and accessible. This last point is perhaps of utmost importance if we want to strive for the transfer of knowledge among a broad spectrum of disciplines, as well as to encourage researchers to move into a field.

We believe that Roadmaps should be representative of the community they serve, and this is best achieved when they are authored by a panel of experts working in a particular field. However, we expect that such a group of experts might be multidisciplinary, approaching a cancer-related topic from diverse perspectives. We would encourage this, as the challenges faced in cancer research today often require solutions from other fields be brought to the table. Our aim is for Roadmap articles to allow researchers to write about issues that are discussed within the community but are perhaps not explicitly mentioned in research papers when there is a lack of definitive knowledge around a topic. Thus, we anticipate these pieces could come from attendees of more-focused, forward-looking meetings and conferences, multi-group grant holders and similar collaborative groups or consortia.

“provide paths to discovery that we hope will further expand cancer research and clinical practice”

In this issue, we published our first Roadmap¹, by Erik Sahai, Thomas R. Cox and colleagues, which asks the question ‘why do patients with cancer die?’. The immediate answer for many would be that metastasis is responsible for most cancer deaths. But as the authors, which comprise scientists working in a broad range of areas of cancer research, as well as practising clinicians and a specialist in palliative end-of-life care, point out, there is in fact very little primary analysis in support of this statement, and that although it may be broadly correct, it lacks detail. Therefore, these authors set out by first presenting what is currently known about the immediate causes of mortality in patients with cancer, as well as the limited understanding of mechanisms that might underlie these causes – for example, complications associated with metastasis, such as cachexia, which is understudied and often overlooked.

Patients with late-stage cancer experience considerable pain and suffering, and a simple yet important premise of this Roadmap is that to reduce this suffering, more knowledge is needed. To start to address this, the authors provide suggestions for changes that could be enacted locally to enhance understanding, such as improved reporting of symptoms in a minimally intrusive manner, which would require the engagement of both patients and the public, more detailed analysis of samples that have been obtained in the course of either routine care or a clinical trial, and making sure the correct phenotypes are being studied in model systems to improve the low success rate in translating findings from pre-clinical models to patients. The strength of this piece, then, is not that it provides a definitive set of practice-changing recommendations but that it shines a spotlight on the burden of disease not often considered in either clinical research or preclinical research and, thus, advocates for change.

Cancer research stands at a turning point with the advent of advances in sequencing and spatial imaging technologies, model systems and the integration of ‘big data’ and machine learning. This means some of the most pertinent questions that might bring about real change to the lives of patients with cancer can start to be answered. So, we look forward to this road ahead and engaging with future authors to provide paths to discovery that we hope will further expand cancer research and clinical practice.

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References

1. Boire, A. Why do patients with cancer die? *Nat. Rev. Cancer* <https://doi.org/10.1038/s41568-024-00708-4> (2024).