

Interview



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Q1 You have an impressive background in science communication within the medical field, not only working with patients as a haematologist and oncologist, and with medical students and residency trainees as an associate professor and mentor, but educating the wider community of doctors and researchers through your podcast, YouTube channel, twitter discussions, books, and academic publications. How would you describe your work and what do you consider your primary focus?

That's a generous summary. I will draw a distinction. There is the work I do, and the way I disseminate that work. The work I do is studying cancer health policy and low-value medical care. I'm interested in the cost, usage, approval, and evidence supporting cancer drugs. The primary output of that work is peer-reviewed academic articles that readers can find at my website.¹ Having done this work, I am interested in using all the modern methods of dissemination. That's why I write books, tweet, make a podcast, and am a novice YouTuber. It's a sad truth of our business that many academics write articles that end up having very low readership or metrics. That's why I try to take advantage of all the tools of 2020 to get the findings and ideas to other people

to run with. That's what science boils down to: sharing and discussing your ideas and findings with others.

Q2 You characterise your field of work as 'meta-research': interrogating the methods, analyses, intentions, and evidence that underpin cancer drug development and the ways that research is translated into practice. What drew you to this broader curiosity and scepticism, beyond bedside practice?

I went to medical school to be a doctor, and later decided to be a cancer doctor. In a perfect world, that is all I would do. I would go to my clinic and see patients, go home and ride my bicycle, read books, and watch Netflix. I would be able to trust the clinical trials to give me useful information, and trust the experts who write the guidelines.

As I went through my training, I realised slowly and with growing horror that we did not live in that world. We live in a world where the evidence for new products can be poor. The cost is often excessive. On several occasions, experts have recommended the use of products for which they are paid by the makers; this could be problematic as it may result in a large scientific and moral discrepancy in the system.

Having realised my predicament, I started trying to brainstorm ways to do research that would re-orient the compass of care back to doctors and patients. After a while, I had done enough projects that I became known for this work. I picked up the tool of meta-research from academics before me because it is the perfect way to illustrate the problems in the cancer drug ecosystem. Eventually, these projects kept me busy, and that's where I am today. Now half my time is service and clinic, but half my time is research. I still dream of living in a world where all my time can be clinical.

Do you think that clinicians should generally have more active engagement with drug development and research, and how can we build towards this?

I think clinicians should understand drug development, as it can be misused to deceive them. My book *Malignant* tries to explain it as simply as I can. I think clinicians should encourage patients to participate in good clinical trials (a fraction of all trials) and accrue patients on these studies. Beyond that, I don't think the average clinician has any further obligation for research and development. Those are separate pursuits for those inclined.

You have a particular interest in medical reversal, where new clinical trial results contradict existing practice and previous trials, in both your >250 academic publications and in a book you co-authored: *Ending Medical Reversal: Improving Outcomes, Saving Lives*. How can clinicians have confidence in research processes to improve evidence-based medicine, and what steps can they take to help limit medical reversal in the future?

A medical reversal is when we do something, often for decades, that provides no benefit to our patients. It runs up costs, and harms, and has no countervailing gains. The key prerequisite is the hasty adoption of costly, bioplausible technology without good trials. Cancer therapy is an area where bioplausibility is a particular concern. But too often, we don't run the correct studies and settle for plausibility. The best thing we can do to curb medical reversal is to demand better evidence for products

when they debut. In cancer medicine, we have gone the opposite way, and embrace more and more \$200,000 /year therapies based on less and less data.

You have highlighted fundamental process, economic, and ethical issues with both medical research and drug development in your research, writing, and your podcast *Plenary Session*. Do these issues affect your management and care for your own patients, and how do you then determine the best treatment to offer your patients?

The job of a good oncologist is not to determine the best treatment for a patient, it is to arm a patient with knowledge to empower their decision. What would happen if we do X, and what happens if we do Y. What are the potential benefits, and known harms. What do we know for sure, and what is uncertain. My goal as an oncologist is to guide a patient to choices that are right for them. That means sometimes people choose things differently than other people, and differently than what I choose for myself. That's OK. Not all of us have the same appetite for risk and uncertainty as others. I find that the more I study and practise medicine, the less certain I become.

Your recent book, *Malignant: How Bad Policy and Bad Evidence Harm People with Cancer*, is "a book about cancer drug policy, medical evidence, and governmental regulation" that highlights issues with the strategies and incentives in current drug development, and champions approaches towards "serious and sustained progress against cancer." What are you hoping that doctors and researchers will take away from your book?

I hope they learn precisely why the current system is problematic. It generates costly \$200,000 /year medications that are not good enough for our patients. Why is the system the way that it is? And what can fix it? Finally, while we try to fix it, what can individual doctors and patients do tomorrow to improve cancer care? Those are the goals of the book.

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You have highlighted issues in research and development, but still advocate for the positives of evidence-based practice. What is the value of research and evidence-based medicine in patient care and how can clinicians and researchers amplify useful strategies and benefits?

Randomised controlled trials are an aeroplane. They're a really useful tool, a technological marvel. Simultaneously, the current research system is a failing airline: it is a miserable experience. But blaming randomised trials for the current system is like blaming the aeroplane for the failing airline. It's not the aeroplane's fault.

We have a choice: to make a research system that empowers patients or one that enriches shareholders. We have chosen, over and over, the latter, but I think we can focus on the former. This means rethinking our studies: better controls, better post-protocol therapy, better endpoints. I have a lot of specifics in the book, but I want to be careful. Just because an airline has packed too many seats on an aeroplane does not mean there is something wrong with flying. We can spread the seats out and make it a more pleasurable experience, which ironically, it once was.

You have been recognised as a fantastic teacher, receiving several awards from medical students, residents, and trainees for teaching and mentoring (including: 2017 Craig Okada Teaching Award for Best Teacher of the Fellowship Program, 2018 Faculty Mentorship Award from Internal Medicine Residency Program, 2019 J. David Bristow Award, and 2020 Excellence in Research/Scholarship Mentoring Award). How do you approach teaching and training, so that it is so valued by your students?

I can only tell you my philosophy about working with students, residents, fellows, and trainees; you will have to ask them what they value. I don't consider myself superior to any trainees. Many are more talented than me in many things, and I learn from them. I ask them questions about what they are passionate about, and benefit from what they share. Whenever I tell them any facts I believe I know, I make sure that I really know what I am talking about. I don't repeat things people told me without understanding the root

of the fact. In doing that research, I find that many things I have been told are wrong. So, when I tell a trainee something, I have high confidence that it is accurate, or at least I can trace why I am saying that. I try to explain what I am thinking about in clinical situations, explain why I approach situations as I do, and I am prepared for them to push back. I try to foster an environment where trainees are comfortable asking follow-up questions and challenging my assumptions and reasoning. I try to remember all the experiences I had when I was at their stage, and retain the good parts and omit the bad ones. For every question, I only answer them as honestly as possible.

What is next for your career personally, and your hopes for the future of oncological research and practice? How do you hope the field, and your career, will look differently over the next 20 years?

In 20 years, I hope that most oncologists recognise the core problems of our profession and commit to solutions. Although I provide very detailed and specific solutions in *Malignant*, I hope future doctors and patients commit to testing proposals. I would be the last person to recommend we adopt a practice just because it makes sense. If someone else has better ideas than me, I encourage them to put those forward, and I will embrace whatever works.

It's a common interview question in medicine to ask 'where do you see yourself in 5 years?' During my training, I provided unsatisfying answers many times, and all of my predictions have been off the mark. After five years on faculty, I can answer confidently: I no longer care. Don't get me wrong, I still have career goals, but they are external. I hope we fix the policy issues that trouble me at a national level, but I no longer have personal goals. I have no aspirations for leadership positions. No desire to work for a governmental agency. Promotions and tenure won't change my life, nor do they guarantee any freedom or protection in 2020. I am happy to go where life takes me. I think more people would be happier if they give up personal ambitions, which are mostly brass rings.

References

1. Prasad V. Papers. 2020. Available at: www.vinayakkprasad.com/papers. Last accessed: 25 August 2020.