

Financial toxicity: understanding the costs of cancer care

In many countries, including the US, patients have to pay for their healthcare. When diagnosed with a disease that requires expensive treatment, such as cancer, patients must cope with not only the shock of their diagnosis but also the stress and uncertainty of paying for their treatment. **Dr Arpan Patel** from the **University of Rochester**, USA, is investigating this 'financial toxicity' and using his findings to advise doctors and patients.



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Fields of research

Healthcare economics, financial toxicity, oncology

Research project

Studying the causes, effects and solutions of the financial stress faced by cancer patients

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Being diagnosed with a medical condition can be a highly stressful experience. When a person is diagnosed with a serious disease, such as cancer, they will face stress and uncertainty about the disease itself: how it will affect their health, their long-term prospects, and the physical and emotional toll of treatments. On top of this, patients have to consider the financial cost of their treatment, which

Talk like a ...

healthcare economist

Area Deprivation Index — a mapping tool that is used to evaluate a region's socioeconomic conditions

Co-pay assistance — programmes that help patients cover the costs of medical care and insurance

Demographics — statistical characteristics of

populations, such as age or income

Financial toxicity — the negative impacts of medical expenses on patients' well-being

Oncology — the study, treatment, diagnosis and prevention of cancer

can be substantial. "When people see their first bill for cancer care, it often causes a lot of emotional distress," says Dr Arpan Patel from the University of Rochester. "The emotional aspect of a cancer journey is extremely challenging. I don't think it's talked about enough." Arpan specialises in researching how this financial burden affects patients and their support networks, and how these stresses can be better addressed to provide the help that patients need.

The high costs of cancer care

The monetary burden related to cancer care, and the negative impact this has on the financial stability of

the patient, is known as financial toxicity. "When people think about financial toxicity, they may only focus on the cost of cancer care itself," says Arpan. "However, there are many indirect costs as well." Cancer treatments may involve travelling to the hospital every week, or even every day, which can be expensive. Some treatments, such as chemotherapy, have severe side-effects on health, which can force patients to take leave from work. "Family members may also have to reduce their hours or quit their jobs to care for the patient," says Arpan. "All of these effects lead to reduced income for the family, which puts financial stability at risk."



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A 2025 study found that 54% of cancer patients in the US faced financial toxicity. An earlier study also revealed demographic differences, indicating that patients were more likely to experience financial toxicity if they were female, Black, single, lower-income or unemployed, or had a lower level of education. Older people – who make up the majority of cancer patients – are also particularly vulnerable. “The general rule of thumb is that you will spend 80% of your lifetime medical costs in the last 10% of your life,” says Arpan. “This interferes a lot with retirement planning, given older adults’ income typically comes from pensions or savings.”

And it’s not just patients that are affected: cancer care has implications for the people around them too. “I often tell people that while cancer is an individual disease, it often affects the entire family and their wider social network,” says Arpan. He believes that clinicians may often underestimate these stresses, meaning that they may fail to provide patients with the appropriate resources and support. To understand more about this problem, Arpan is investigating how patients cope with financial toxicity and what clinicians can do to help.

Studying financial toxicity

Arpan talks with patients to find out about the financial hardships they experience. “People often feel nervous telling us their exact salaries and things like that,” he says. “Instead, we use Area Deprivation Indexes.” These indexes use information about the areas where patients live to make estimates about

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average levels of income, quality of life, life expectancies and education levels, all of which affect a patient’s likelihood of experiencing financial toxicity. “We also do more qualitative cost analyses through discussions with healthcare providers, patients and patients’ families,” says Arpan. “We then transform the information collected into quantitative data for analysis.”

What can be done to alleviate financial toxicity?

Arpan believes that the first step towards tackling financial toxicity is to talk about it more openly – and that clinicians should lead the charge. “Research indicates that in more than half of discussions with patients, clinicians don’t even talk about financial toxicity,” he says. “When it is talked about, it’s usually the family that brings it up.” In his own clinical practice, Arpan makes sure to begin or end appointments talking about the costs

of cancer care. “I ask patients and their families if costs are a concern for them, and why,” he says. “If it is a concern, I direct them to resources that can help.”

There are resources that patients can access to help alleviate their financial burden, but they aren’t always easy to find and access. Support can be provided through social workers, financial advisors, support groups, charities and co-pay assistance. While informing patients about these resources can help, Arpan believes a more structured approach is needed for systemic change. He advocates for policy change to train healthcare providers in identifying patients that are at high risk of financial toxicity, and establish a standardised approach across healthcare organisations.

“We are testing out one possible intervention at our own institution,” Arpan says. “We have set up a Financial Toxicity Tumor Board, which brings together stakeholders such as clinicians, insurance providers and administrators, social workers, and many others.” The board addresses concerns around financial toxicity faced by patients and works on ways to address it, such as processing insurance claims and capitalising on available resources. “Increasing awareness is the principal goal,” says Arpan. “The more aware people are about financial toxicity, and the more we talk about and research it, the better equipped we are to get the best resources to the patients that need them.”

About *healthcare economics*

Healthcare economics examines the factors that influence the costs and expenditures of healthcare industries. This includes researching the efficiency of healthcare systems, the financial impacts on patients and other stakeholders, and the interactions between financial flows and overall well-being of the communities that these healthcare systems serve. Healthcare is a unique sector, so the factors affecting its economics are also unique.

Within healthcare economics, Arpan believes that financial toxicity is a growing issue, caused in part by the lack of experts

focusing on addressing it. "Healthcare systems are often complicated and fragmented," he says. "The costs of cancer care, and healthcare in general, are enormous and rising, especially in the US." This trend puts pressure on patients and healthcare providers alike. "It's really important to dive into this topic with a holistic approach," says Arpan. "We need to understand the issue properly before we are able to do something about it."

Finding courses or research opportunities that focus on healthcare economics can be challenging. "Schools and universities continue to be quite siloed – you choose

science or economics, but not both," says Arpan. "Medical trainees are rarely taught healthcare economics at all." Yet Arpan says there are signs of change, and that healthcare economics is emerging as its own discipline. "It's important for future clinicians and researchers to take courses on healthcare economics, to understand the terminology and build awareness about the relationships involved," he says. "Given that the field is still young, students interested in financial toxicity need to be proactive to learn about it and find opportunities to bring medicine and economics together."

Pathway from school to *healthcare economics*

Arpan recommends getting a good grounding in economics and statistics to understand the terminology and methodologies that underlie healthcare economics. Relevant subjects to take at school include economics, mathematics, biology and chemistry.

At university, courses in medicine, economics, biology, healthcare and public health could all lead to a career in healthcare economics. Arpan recommends seeking courses that specifically address the intersection between medicine and economics.

Explore careers in *healthcare economics*

The University of Rochester School of Medicine and Dentistry, where Arpan works, has various programmes and resources for high school students: urmc.rochester.edu/education/md/undergraduate-programs

This article from Johns Hopkins' Bloomberg School of Public Health gives an overview of health economics, and includes a link to careers and opportunities in the field: publichealth.jhu.edu/academics/academic-program-finder/masters-degrees/master-of-health-science-in-global-health-economics/what-is-health-economics

Watch these videos to learn more about what health economists do: youtube.com/watch?v=pQO3EzS9ICw and youtube.com/watch?v=1nKjZ-mEaf8



Meet Arpan

I've always been a scientist at heart. From a young age, I was fascinated by nature and the ways that people think and act. Later, I got interested in the rules and regulations surrounding healthcare, which seemed at odds with the ideals of medicine and science more generally.

My parents are my inspiration and my mentors. They came to the US from India with very little money. My father worked in Brooklyn and my mother sold blankets on the side of the road to pay for my schooling. Appreciating the prior generations and the work and effort they put in for us is a humbling and meaningful experience.

I found my calling when practicing as a clinician. The thing most dear to me was meeting people and trying to help them. After several years, I understood that people with fewer resources have worse experiences with healthcare. I also saw how my own family was impacted by healthcare costs, which incentivised me to study healthcare economics specifically.

An excellent study by Harvard suggests that happiness principally derives from two important things. One is helping others, and the other is human interactions and connections. Healthcare is a field that offers both of these, through helping and interacting with the people that come to the clinic.

Failure is often a good thing. I struggled a lot early on in my career. That motivated me to study harder and smarter, while remaining humble and making the most of the opportunities that arose. I believe in saying yes to opportunities, even if they're not exactly what you had in mind. Gaining diverse experiences has certainly been tremendously helpful for me.

I go cycling to unwind from work. I have two kids, and we all started learning piano together, which we love. I also enjoy just being outdoors, driving on country roads and not worrying about anything else.

Arpan's top tip

Seek mentorship, and not just from mentors in the discipline you want to study. For me, my father was my biggest mentor and role model.