

50-year forecast offers hope for HIV and cancer patients and predicts climate change to increasingly set agenda

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The COVID-19 pandemic has changed the way we think about health and revealed significant flaws within our health care systems. It has also raised questions about the role of technology, as well as ethical concerns about the distribution of wealth and its impact on global health. How will this collective awakening that we have experienced influence the coming years and decades? This was the subject of our [research on the future of medicine](#).

We utilized the Delphi method in a three-round study involving 22 experts from seven European countries. Participants included physicians, academics, and industry professionals. Despite a slight reduction in panel size in later rounds, study validity remained intact. Data were collected through audio or video responses and analyzed using [NVivo](#) 12. The research focused on updating current medical trends, identifying key drivers for future development, and making health care foresights. Data were coded independently to minimize bias and formed the basis for questions in subsequent rounds.

1 to 2 years: beta and data

While we remain in "eternal beta"—a state in which products or drugs are tested through active use by a wide audience—sales of portable smart electronic devices will continue to grow thanks to advances in sensors, artificial intelligence (AI) and the proliferation of 5G technology. Data generated by personal devices will also increasingly be transferred to professional devices. This will enable doctors to treat their patients more holistically and better inform their prescriptions.

2 to 5 years: the private sector strikes back, climate-related tensions

Rising strains on [public health care](#) are likely to bolster the role of

private entities. Innovations in this sector will likely hinge on smart sensors, the blockchain, and digital health records. Over the same period, climate change will exacerbate health issues such as malnutrition and water scarcity, especially in vulnerable regions, necessitating a broader health care response.

5 to 10 years: innovations leading to inequalities

Advancements in genomics are accelerating personalized medicine, enabling better prediction and treatment of genetic diseases. Technologies like drug-gene interaction studies allow for optimized drug dosing, while nanotechnology permits targeted micro-dosing, reducing complications. However, the high cost of these innovations will exacerbate health care disparities, potentially fueling social conflict, especially as climate change imposes additional health burdens.

10 to 30 years: climate change takes center stage

Global warming, which according to the World Health Organization could claim the lives of around 250,000 people a year by 2030, risks exacerbating inequalities in access to health care. Various disasters (floods, heat waves, etc.) disproportionately affect disadvantaged populations who do not have the resources to cope. This could put a strain on existing health care infrastructures, leading to disparities in access to care.

In addition, [global warming](#) could lead to forced migrations, placing an additional burden on health care systems in regions receiving climate migrants and creating difficulties in accessing health care due to social, economic, and linguistic barriers.

Experts predict that, within 10 to 15 years, [technological advances](#) could

be less effective in meeting the needs of racial- and ethnic-minority patient groups. Indeed, the lack of diversity in [clinical trials](#), a widely debated topic in medical research today, could contribute to the reduced effectiveness of drugs on a broad population.

However, experts anticipate that this trend will gradually fade over the next 20 to 30 years. They believe that health care companies will gradually adapt their treatments for people from lower socio-economic backgrounds and minority ethnic groups.

30 to 50: a quantum leap

Finally, looking ahead half a century, experts predict the emergence of highly effective treatments and even cures for diseases such as HIV and hepatitis C. There is no doubt that considerable progress has been made in the prevention, diagnosis, and treatment of diseases, particularly cancer.

The experts in our study predict a significant leap forward in these areas. They do not necessarily envisage a complete cure for all types of cancer or the eradication of major diseases, but do foresee progress in diagnostic and therapeutic methods that will enable a higher percentage of patients to be successfully treated at an early stage.

Against this backdrop of progress, they nevertheless stress that [antibiotic resistance](#) remains a real challenge. It is true that the development of new antibiotic molecules is still relatively slow. Our experts draw our attention to certain initiatives that focus on modifying existing antibiotics to overcome resistance, while others are exploring the use of bacteriophages, or studying entirely new classes of antibiotics.

Technological advances and a faster pace of life will continue to take their toll on our mental health, perhaps even increasingly so, with mood

disorders becoming widespread. We could also see an increase in depression and certain personality disorders. This would force patients and doctors to resort to preventive medication, or even a "magic pill", to cure mental disorders.

In addition, the problem of chronic metabolic diseases such as cardiovascular disease, diabetes and obesity is set to worsen. Contributing factors include the increasing prevalence of sedentary lifestyles, unhealthy diets, and an aging population.

The incidence of pancreatic cancer, for example, has risen sharply in recent years. Researchers attribute this not only to lifestyle factors such as smoking, obesity and poor diet, but also to long-term exposure to certain environmental pollutants. Understanding and addressing these links between health and the environment is therefore becoming crucial to the future of health care.

The aging challenge

Finally, the aging of the population represents another major challenge that will have a considerable impact on health care systems, and not just on Western systems. The prevalence of age-related diseases such as neurodegenerative disorders, osteoporosis and certain types of cancer is set to increase.

This trend will not only place a considerable burden on health services, but will also require major changes in the way health care is delivered. Emphasis will need to be placed on preventive measures, early detection and management of chronic diseases, as well as health care environments and services adapted to the elderly.

In short, as we move forward in time, we imagine progress in the use of technology. While some of us will be offered the means to extend our

longevity and improve our quality of life, others may suffer significant health disadvantages, particularly as a result of [climate change](#).

General practitioners will have a cross-sectional view of a patient's overall state of health, while specialists will be able to provide more targeted treatments. Personal care will become an even hotter topic, as lifestyle choices will reflect a person's financial resources and social status. This will allow a commercial industry to thrive on the challenges of modern life.

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