

# news reviews

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## global health & AI

With many low and middle-income countries struggling to meet their Sustainable Development Goals with regard to health, the use of artificial intelligence has the potential to reduce inequalities worldwide. *The Lancet* considers a report by USAID examining specific cases where AI was used to provide indicators of population health, patient and front-line virtual healthcare assistants, or clinical decision support for doctors.

Of course, the financial barriers to comprehensive healthcare in low-income countries (LMICs) are also barriers to the adoption of useful AI without support from donors and investors, whether private or public. *The Lancet* points to additional challenges such as the 'privacy, ethics, and data ownership' issues that complicate many efforts to digitise services.

The report acknowledges that *it is very challenging to take disruptive technology innovations from high-income countries and deploy and scale them so that they address the unique needs of, and have positive impacts on, populations in low-income environments. This paper is intended to fill a key gap by identifying both barriers to AI deployment at scale in LMICs and what actions can best accelerate the appropriate use of AI to improve health in LMIC contexts.*

*The Lancet* [bit.ly/2Uuea1o](https://bit.ly/2Uuea1o)  
USAID [usaaid.gov/cii/ai-in-global-health](https://www.usaid.gov/cii/ai-in-global-health)

## neurological disorders and an aging population

Although I'm sure we're all pleased to be living longer thanks to good nutrition and modern medicine, there is a downside to increased longevity, and that is the strain it is putting on health services and social care, even in high income countries. With aging comes an increased risk of many conditions, including cancers, cardiovascular disease and neurological diseases like stroke and

Alzheimer's. In fact, *neurological diseases, are the leading cause of disability-adjusted life years (DALYs) globally and the second cause of deaths after cardiovascular diseases.*<sup>1</sup>

Prevention is considered key to reducing the burden, and education around lifestyle factors like smoking, drinking, and obesity must be part of the strategy. But there is also an urgent need for more medics entering the workplace to specialise in neurology and offset current European shortages in this increasingly important field. *It is time to bring the brain back to the centre of the world of health.*<sup>2</sup>

1. *The Lancet* [bit.ly/3ILbogg](https://bit.ly/3ILbogg)
2. *The Lancet* [bit.ly/3Gqrrgl](https://bit.ly/3Gqrrgl)

## our future health

A new research project, funded by government, industry and the charity sector, aims to recruit five million adult volunteers in the UK with a view to *collecting health and genetic data and creating a long-term repository of health information.* The ultimate aim of the project is to catch disease processes earlier and provide the kind of treatment that will prevent them becoming chronic, life-limiting or life-threatening conditions. This is an optimistic goal, given the stretched state of the UK health service.

Volunteers will not only complete lifestyle and current health questionnaires, they will also have the results of blood and genetic testing added to their profile. The data collected will be made available to researchers working for universities and the NHS, but also companies, which might make some people think twice about signing up. However, the information shared is supposed to be anonymised.

In return, volunteers can request some of their results to heighten their own awareness of the possible health risks their genes predispose them to.

[ourfuturehealth.org.uk](https://ourfuturehealth.org.uk)  
BBC [bbc.in/3QyiEhd](https://bbc.in/3QyiEhd)

## global warming & infectious diseases

It is hardly surprising that a warming planet will, amongst all the other negative impacts, increase the range (and hence the incidence) of infectious disease. A recent analysis of over 800 published studies<sup>1</sup> found that *climate change had exacerbated 58 per cent of infectious diseases in certain documented instances.*<sup>2</sup>

Diseases like malaria and certain diarrhoeal diseases like cholera, once largely limited to tropical climes, are expected to become more common in formerly temperate regions as the earth warms. Diarrhoeal disease generally is a risk whenever there is flooding, and we have seen some catastrophic floods in the last ten years,<sup>3</sup> even in the UK.<sup>4</sup>

But it doesn't end there – the team from the University of Hawai'i at M'noa (UHM) found 3,213 empirical case examples in which climatic hazards were implicated in pathogenic diseases, and the study includes a long list of infectious diseases and the various ways in which climate change and an ever increasing human population facilitate their spread.

The study concludes: *The sheer number of pathogenic diseases and transmission pathways aggravated by climatic hazards reveals the magnitude of the human health threat posed by climate change and the urgent need for aggressive actions to mitigate GHG [greenhouse gas] emissions.*

1. Nature. [go.nature.com/3GBBxLG](https://go.nature.com/3GBBxLG)

2. Eos. [bit.ly/3Xi09Qm](https://bit.ly/3Xi09Qm)

3. Nature. [go.nature.com/3ZvVNac](https://go.nature.com/3ZvVNac)

4. UK Government. [bit.ly/2sCuq38](https://bit.ly/2sCuq38)

## COVID vaccine equity still some way off

The United Nations Development Programme (UNDP) continues to maintain data on COVID vaccination rates, which has largely vanished from UK news headlines. The headline figure used is the percentage of the whole population who have received at least one dose of COVID-19 vaccine (this is not the definition of 'fully vaccinated' in most Western countries).

In higher income countries, nearly three in four people have now received a single dose, while in low income countries only one in three have done so. Interestingly those in 'upper-middle income' countries have the highest rate (four in five). The figure for higher income countries may be skewed by vaccination rates in the populous US, which remain substantially below those in other rich countries.

Data are also presented comparing the increase in healthcare spending needed for a given country to vaccinate 70 per cent of its population with one dose. In higher income countries this averages 0.8 per cent; in low-income countries the figure is very much higher, at 56.6 per cent.

It is now more than two years since the first vaccines were given in the UK. It is still thought that these give significant protection against death and serious illness. It is harder now to separate immunity derived from vaccines and that derived from infection in the UK, but it was clear during late 2021 that high proportions of those requiring intensive care support had not been vaccinated. If this remains even partially the case, the health systems of countries with low vaccination rates will continue to suffer. ■

UNDP. [data.undp.org/vaccine-equity](https://data.undp.org/vaccine-equity)