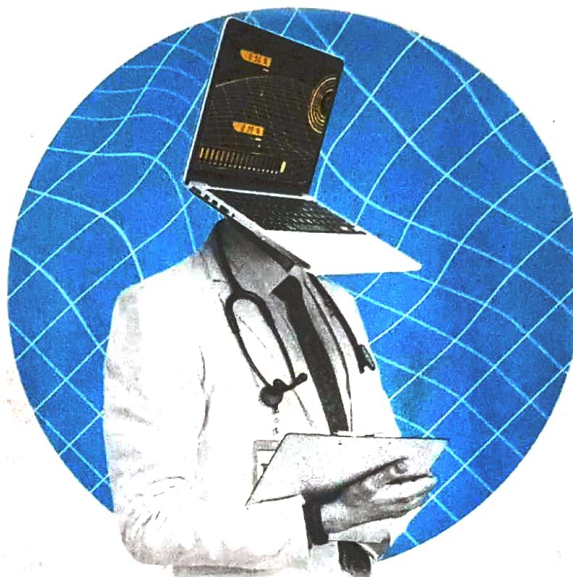


The Assistant

The doctor alone can heal, but AI with all its information feed is fast evolving into a competent aide, Dr Debashis Ghosh tells **Upala Sen**

AI & HEALTHCARE

This is the second of a four-part series that unpacks the evolving role of AI in the medical field



ISTOCK.COM/MINIVYX DOODLE

That data is used by AI to produce a summary, create notes for myself, create the forms that are to be sent out, draft the letters to my colleagues in other departments. The patient too gets an entire treatment management plan. It saves time.

I plan my surgery with the help of AI. It helps me look at evidence. In the past we would go to the library to look up information. Later, there came the Internet search. Now, we have AI. I pay the highest subscriptions for all the AI platforms. So I have ChatGPT, I have Claude, I have Kimmy. It pulls up relevant reading material. Of course, for it to do that you have to feed it with relevant data. I feed entire textbooks into my LLM. I have chosen certain journals. But read I must. That is on me.

I am using AI to create a digital twin of a patient to simulate how the human patient will respond to treatment. AI is my assistant, my sparring partner. It answers to my prompts, it has been trained to interact with me. I have trained my AI assistant so it can work with me, intelligently. And what happens thereafter is a beautiful duet.



Dr Debashis Ghosh is consultant breast & oncoplastic surgeon at the Royal Free London, clinical director of surgery at The London Clinic, and advisor to NICE on Robotic Surgery

Q I am told you use AI for medical treatment. What is that like?

I have been always using technology in healthcare. In the early days, before AI, we used algorithms to take evidence-based decisions. In 2011-2012, we at the Royal Free Hospital in London trialled an algorithm-based multidisciplinary team software. So, for somebody who has a certain grade of tumour, we would then say this is the kind of treatment they should have based on what the current evidence is on the Internet. We would be connected to a database of journals. And we would be updating it and the algorithm would work out what the treatment would be.

Q And it ran on?

It would sit on local servers and run on our desktops. Normally, whenever we take a decision in cancer, the international practice is to have multidisciplinary teams. And that is how it has been for a long time.

But even in the US and the UK, everybody does not have access to the latest evidence. And everybody is not an international expert. The algorithm-based software was slow and when I compare it to current LLM systems, the volume of data it held was not much. But it was useful.

Around the same time, some of my colleagues developed a prediction software called the NHS Predict. We would feed the machine patient profiles — age, tumour size, how it was diagnosed, what was the whole process. Based on this data, the machine helped us screen and treat new patients and also helped us chart a prognosis. AI works on

the same principle.

Then came DeepMind. They ran their first trial with us at University College London and Royal Free. They had developed an AI-based tool to look at mammograms. It was very essential for somebody in the US because they don't have that many radiologists there. So you see, the whole concept of AI has always been there.

In 2018-2019, the first AI-driven surgical navigation tools started coming in. We could do a 3D image of the body based on the MRI or CT and we could simulate the operation. We started using this in complex operations — kidney, brain.

Imagine this, you have an image of a healthy brain and you have an image of a brain with a tumour in it. You superimpose Image 1 on Image 2, and at the time of the surgical procedure, the AI alerts the surgeon every time she or he takes a misstep or is about to encounter a major vessel or a major structure, which must be avoided. The AI will tell you realtime. This is amazing stuff. In my field, which is breast cancer, I started using something similar in 2018 where we would scan an image of a breast, create a 3D image, then

show this to the patient, give her an idea as to what it would look like post procedure.

Q A lot of people seem to think robotic surgery is AI-assisted surgery.

Currently, in robotic surgery, which is happening in India too, the robot is a tool. It does not have any intelligence built into it. It is just an extension of my hand. So, I am sitting at a console looking at a 3D image through 3D goggles and I insert my hands into these loops and move them over a pad. There is a junior doctor who guides the robotic instruments that mimic my movements.

But yes, at some point in the future, robots will be able to perform surgeries, much like the self driving car. Artificial intelligence is learning.

Q Then people will ask what will be the role of the doctor in the future?

AI can only treat. It cannot heal. For that you will still need human consciousness. You need the human touch, a human being. Maybe in 20 years, AI will be so intelligent that it will be better than the doctor, in terms of his memory. But AI cannot create something out of nothing. It will have millions of permutations and combinations. AI cannot have an original thought. And, of course, it needs government regulation and some form of accountability.

Q And for now?

For now, for someone like me in the UK, my practice is fully AI-driven. Once a patient walks in through the door, I ask permission to record our conversation.