Artificial Intelligence

Mike Morris 8th August 2019

Matt Hancock seems to be announcing something new for the NHS every couple of days—which makes even watching BBC Breakfast worthwhile. Today's announcement, sandwiched in between some very important entertainment industry articles, was about artificial intelligence. He is investing another quarter of a million pounds, this time to make the UK an exemplar for Healthcare Artificial Intelligence. Don't worry, you won't have your bedpan removed or your bandages changed by a robot, this one is all about improved diagnosis and improving efficiency.

When I was in my youth, improving efficiency was usually an announcement that heralded strike action: I particularly remember the Postal Workers response to the introduction of automatic sorting machines, which stood idle for years. However, most doctors would agree that spending time with their patients and enabling faster diagnosis is a good thing. Interesting the objectives of this AI funding include not only automated diagnosis and sample screening, as we would expect, but two things that would not normally be associated with this technology.

The first of these more surprising objectives is the use of AI to predict which patients will not turn up for their appointments. The NHS has moaned for years about these no-show patients and how much it costs, which is very reasonable. Although it would be more reasonable if all appointments were on time and the result of a missed appointment was a clinician twiddling his thumbs waiting for the subsequent patient (who is not due for 15 minutes) to arrive, rather than seeing the next patient immediately because his appointment is already an hour late. Nevertheless, the predictions that AI can make can be useful. Of course, what he doesn't say is how the NHS will use the results. Does it mean that if you miss an appointment, then you will be at the back of the queue for the next one? I can imagine how many hours BBC Breakfast will devote to complaining about the first patient who dies as a result of that strategy. So I think we need to ask what use this will be.

But the second surprise was more interesting, it was to help hospitals manage their time to allow all doctors to spend more time with patients. This one is fascinating. Will it be a computerised "time and motion study"? These were useful in the 1950's and one of the main results of the studies then, was the action of slapping a scalpel or other instrument into the surgeon's hand during an operation. I may not be a Time and Motion expert, but simple observation does indicate that overworked NHS staff could be relieved of quite a few time-consuming burdens.

I will watch with fascination how the AI investment is used to achieve these two objectives, as well as the reaction of staff. However, no one can object to the automation of pathology and diagnosis as a tool to <u>assist</u> the clinician. Another tool that would assist the clinician is access to the entire patient record, not just the bits on the local systems. This is very difficult to achieve, especially when the fragmented records are scanned from paper, but the technology is being developed to do so. This is another form of Artificial Intelligence.

So what would this AI do?

In simple terms, it would troll through all the systems that it had access to and match records with patients, then link these patients' record fragments with the patients' NHS numbers to make them available via the Spine (the backbone system that allows patient record systems to talk to each other—at least in a limited form). It won' be easy as it would need to be able to "read" PDF files made from paper records and it would need to be clever enough to recognise text in context and at some point convert these into structured data. With old records, the law of diminishing returns operates, but there will be some forgotten history that, if available could aid diagnosis and potentially save the life of a patient.

So I am very much in favour of AI in the NHS and will watch developments with interest. I don't expect it to happen, but if you find yourself in a hospital bed and the nursing assistant who arrives to give you a bed bath is made of metal and plastic, well look on the bright side: at least it may speak English!