not. Treatments of no proven efficacy are being sold to patients (who effectively subsidize the clinical trials to test them). They receive no refund if the therapy is subsequently found not to work. Patients also take risks: they undergo immunosuppression and the surgery itself.

The new study takes induced pluripotent stem cells (iPS cells) that have been banked and characterized to ensure they are safe, and converts them to heart-muscle cells. These are then spread into a thin sheet that is attached to the weakened heart muscle. It is only the second clinical application of iPS cells and is generating excitement around the world. The problem is that the earlier treatment from Sawa — which is ongoing under the fast-track system — has yet to produce convincing results.

In that treatment, approved in September 2015, patients received a sheet of muscle cells made from their own leg tissue, rather than from iPS cells. Called HeartSheet, the muscle sheet is attached to weakened heart muscle that has usually been damaged as a result of a heart attack or plaque build-up and is often the cause of heart failure. The scientists behind the treatment speculate that the muscle cells work by releasing growth factors, not by becoming supporting tissue themselves. Other researchers are sceptical.

Now there are two new treatments being investigated for the same condition, and it's impossible to know yet whether either will work or which might be best for individual patients.

It makes sense that heart-muscle cells (used in the second study) might work better for the heart than leg-muscle cells (used in the first). Indeed, it was reported a decade ago that injecting muscle cells from the leg did not improve heart function (P. Menasché *et al. Circulation* **17,** 1189–1200; 2008).

Most physicians hoping to treat heart disease by way of regenerative medicine have moved on to other strategies, with many looking to heart-muscle cells. That doesn't mean HeartSheet cannot work, but it does raise the question of whether patients who are given it will benefit.

Sawa himself has raised the issue. At a symposium last month touting the new iPS cell trial, he said "leg cells are not good, well, at least not enough". And the Osaka University web page announcing the iPS cell trial says that HeartSheet was found to be ineffective for more serious cases. Sawa told *Nature* that the cells work in some cases, but that he expects the new iPS cell therapy to be more effective.

"Treatments of no proven efficacy are being sold to patients."

All this places a question mark over how the efficacy of HeartSheet can be proved as required. Half way through its scheduled 5-year plan, fewer than 10 patients — of the 60 required by the terms of its approval — have received the treatment. If the trial doesn't make 60, the health ministry told *Nature,* there would either be an extension or the ministry would try to make a decision on the basis of the available data.

Some physicians have called for the HeartSheet tests to end and the data to be assessed before the new iPS cell study can begin. That might be an over-reaction, but pressure on the Japanese government is increasing. The government needs to move quickly to make sure that evaluation of the HeartSheet therapy is as rigorous as promised. As more treatments emerge, officials should make sure that — fast track or not — they have a valid claim to efficacy before being sold to patients.

A therapy for heart disease could be the first iPS-cell clinical breakthrough that Japan so ardently desires. The country shouldn't sell short the promising technology or the patients who hope to benefit from it. ■

False testimony

A lie-detection system being used by Spanish police highlights concerns about algorithms.

If you live in southern Spain, last June was not a good time to lose your smartphone and, as a way of getting an insurance payout, falsely claiming that you had been mugged. Ten police forces in Murcia and Malaga had some extra help in spotting your deceit: a computer tool that analysed statements given to officers about robberies and identified the telltale signs of a lie. According to results published in the journal *Knowledge-Based Systems*, the algorithm was so good at pointing officers towards false claimants that detection of such offences in one week was an impressive 31 and 49 for the respective regions, up from an average of 3 and 12 closed cases over the entire month (L. Quijano-Sánchez *et al. Knowl.-Based Syst.* **149**, 155–168; 2018). The government in Madrid is now rolling the system out across the country, and its developers are trying to apply its machine-learning methods to help detect other types of crime.

In this case, the algorithm flagged up suspicious wording (based on a training set of statements known to be true and false), and left it up to the police to question suspects and get them to confess. A person, not a computer, made the final decision. Still, it's another example of the steady march of algorithms and artificial-intelligence (AI) systems into public life and decision-making — and that's a trend that makes some people uncomfortable.

Last week, the UK House of Commons Science and Technology Committee published a report, 'Algorithms in decision-making', that summarizes many of those anxieties, and suggests some ways to allay them. It's timely. Also last week, the UK government announced plans to make National Health Service (NHS) data available to companies and others to help build AI-based tools for diagnosing cancer. And the University College London Hospitals NHS Foundation Trust announced a partnership with the Alan Turing Institute, which works on data science and AI, to find ways of improving health care in the NHS. It aims, for example, to use data sets of previous cases of people who arrive at hospital with abdominal pain, to develop a more effective triage system.

Nature has raised concerns about the development of AI health-care algorithms before, particularly those that seek to diagnose disease (see *Nature* **555**, 285; 2018). Although they show great promise, it is crucial that they are developed with proper scrutiny and review of the evidence. That has not always been the case so far.

The UK parliamentary report also discusses a controversial and pertinent issue: how much could and should people who are affected by algorithms' decisions be told about how the software works? This 'right to explanation' is included in Europe's new data-protection laws, which came into force last week, although details on how this might change practice are unclear. At present, only France has committed to publishing the code behind algorithms used by the government. More should follow its lead: in evidence to the parliamentary inquiry, the UK government said its departments used such programmes widely; this includes HMRC, the department that calculates and collects tax.

Some witnesses to the inquiry claimed that most people would not understand an explanation of how such software works. Others said that to open the 'black box' and lay out how an algorithm works is itself a difficult problem and one compounded by trade secrets. One option, as the report details, is to offer context that helps people to understand the algorithm's workings: to tell someone who has been refused a loan, for example, that the computer helping to make the decision required them to be earning £15,000 (US$20,000) more a year.

Revealing such details does, of course, allow people to try to game the system. The Spanish police face this problem, too: in describing how their software detects fibs, they are handing advice to those who would lie to them in future about being robbed. This information is already in the public domain, so we're not breaking any confidences by repeating them here: avoid mention of the brand names of what was stolen, don't say the attacker came from behind, and make your statement as long as possible. Still, the Spanish police have an incentive to publicize their system: they hope it will act as a deterrent. In this case, *El Gran Hermano* really is watching you. ■

CORRECTION

And the Editorial 'False testimony' (*Nature* **557**, 612; 2018) gave the wrong numbers for the closed cases. The number of closed cases were 31 and 49, not 25 and 39.