(US$51,000) per patient for a treatment that would give a few more months of life to victims of a terminal renal-cell cancer? Or should it spend that money on other potentially life-saving interventions such as breast-cancer screenings, or insulin for diabetics? NICE, following its established cost–benefit guidelines, opted for the latter — and immediately found itself the target of intense organized lobbying to reconsider, which it eventually felt compelled to do, and the institute modified the guidelines for some patients with short life expectancy.

NICE should be extremely cautious about going too far down this road: changes made under pressure from one vocal patient group can make it that much harder to draw the line for the next — and to maintain the agency's commitment to evidence-based decision-making.

However, NICE's decision-making process remains an honest and increasingly open effort to take empirical evidence about clinical effectiveness, and combine it with the value that the British public — not faceless bureaucrats — put on their health and their lives. The available methods for assessing that value do leave something to be desired. NICE asks people to rate various states of health on a numeric scale, for example — a standard technique in medical economics — even though it is hard to know whether such hypothetical assessments are meaningful to people who are facing death in reality. But there are efforts under way at NICE and by other health economists to improve on such methods. And the United States — where comparative-effectiveness research received a $1.1 billion boost from the economic stimulus earlier this year — should contribute to this effort.

Meanwhile, even as Americans — and many British citizens — view the UK health-care system with bemusement, the British look across the Atlantic Ocean with equal puzzlement and sometimes horror. They see Americans dying with cancer and losing their homes because they cannot afford treatments that are not covered by a health insurance plan. Millions of people cannot afford to go to a doctor at all.

That is the nightmare that the American politicians must urgently resolve, and they would do well to stop being afraid of NICE and start taking cost-saving lessons from it. ■

SETI at 50

Despite the long odds against success, the search for extraterrestrial intelligence has come a long way.

The search for extraterrestrial intelligence (SETI), a research discipline that celebrates the 50th anniversary of its inaugural publication this week (see page 345), has always sat at the edge of mainstream astronomy. This is partly because, no matter how scientifically rigorous its practitioners try to be, SETI can't escape an association with UFO believers and other such crackpots. But it is also because SETI is arguably not a falsifiable experiment.

Regardless of how exhaustively the Galaxy is searched, the null result of radio silence doesn't rule out the existence of alien civilizations. It means only that those civilizations might not be using radio to communicate. Indeed, SETI is marked by a hope, bordering on faith, that not only are there civilizations broadcasting out there, but that they are somehow intent on beaming their signals at Earth. An alien SETI project relying on a similar faith in Earth would be sorely disappointed. It's true that a random mix of radar and television signals has been expanding outwards from Earth at the speed of light for the past 70 years. But there have been only a few short-lived attempts to target radio messages at other stars — with each attempt arousing concerns over alien reprisals. Understandably, many scientists who support SETI in spirit have instead pursued astronomical targets more likely to offer positive data — and tenure. Governments have also been averse to funding an effort so likely to turn up nothing.

Nonetheless, a small SETI effort is well worth supporting, especially given the enormous implications if it did succeed. And happily, a handful of wealthy technologists and other private donors have proved willing to provide that support. This summer, the Allen Telescope Array, funded mainly by Microsoft billionaire Paul Allen, has begun to sweep the skies with its 42 dishes in the California high country (see page 324). The sophistication of this array, which it is hoped will grow even larger, shows just how far SETI has come. Whereas the first search in 1960 used a single radio channel, the Allen array can potentially monitor hundreds of millions of radio channels at once. With advances such as this, the speed of the searches — the rate at which star systems can be checked over multiple parts of the radio spectrum — has increased roughly as fast as the exponential growth in computer power described by a law named after yet another SETI supporter, Intel founder Gordon Moore. Moreover, the researchers at the Allen array are solving the immense computing challenges of operating large, multi-dish arrays, an expertise that will benefit the whole of radio astronomy when the time comes to build the huge arrays of the future.

"A small SETI effort is well worth supporting, especially given the enormous implications if it did succeed."

Meanwhile, one of SETI's main missions — finding other worlds like our own — has become much more feasible than it was five decades ago. Very soon, probably within a few years, astronomers will find an Earth-sized planet orbiting another star. The next step will be to characterize it by studying spectroscopic signatures in the light from its atmosphere. Is there a fingerprint for life, in the form of oxygen or methane? How long is its day? What is its weather like? Does it have continents and oceans? For the 'Earths' orbiting nearby stars, answers to all of these questions should be within the reach of telescopes planned for the next decade.

Still, as momentous as it would be to find such indirect evidence for life elsewhere in the Universe, that would not be the same as finding other thinking creatures like ourselves. That will still require SETI in some form. Will we want to beam a message to these other Earths? That is a debate for another day. But we should at least train the Allen array on these worlds. Earth may decide it does not want to open its mouth, but it would be foolish to cover its ears. ■