

THIS WEEK

EDITORIALS

HISTORY DNA discovery kicks off memorable blasts from the past **p.270**

WORLD VIEW Economic crisis triggering a modern Greek tragedy **p.271**



TICK TOCK The bacteria that keep time for the underwater squid **p.273**

Look after the pennies

Government decisions about where to spend and where to cut should be based on evidence, not ideology.

When a nation's expenses grossly exceed its income, as they routinely do in the United States, the most foolish way to curb the resulting deficit is to slash spending wildly. Yet that is the path that the US government has chosen to follow with this year's 'sequester'. A smarter way is to follow the path pioneered by evidence-based medicine: fund what works and cut what doesn't. That is the approach being pursued in the budget submitted last week by US President Barack Obama (see page 277).

In a budget chapter rarely mentioned in the media hoopla over proposed tax rises and spending cuts, the administration has laid out a blueprint to implement evidence-based decision-making throughout the government — in effect, bringing the methods of science to bear on policy.

This reform effort began under Obama's predecessor, George W. Bush, but it has accelerated greatly with the need to do much more with significantly less. The White House Office of Management and Budget (OMB) signalled the way that things were going in May last year when it instructed government agencies to incorporate evidence-based strategies throughout their operations.

The White House mandate applies to every agency in the executive branch, including those that fund science. But the most urgent target is the government's vast array of social services, which range from early-childhood enrichment projects to the home care of elderly patients. All were created with good intentions; few have had their effectiveness evaluated with any kind of rigour, or by anything that resembles peer review.

The OMB memorandum suggests several ways to change that situation. One is to fund social services through a 'tiered' approach not unlike the stages followed in clinical trials. At the lowest tier, agencies would allocate seed money to promising, but unproven, ideas, provided that the research programme builds in a rigorous assessment of outcomes by independent investigators — usually academic social scientists or non-profit research firms.

In the higher tiers, more funding would be available for programmes that are supported by stronger evidence (and with built-in assessment protocols). The highest tier would be reserved for large-scale, multi-million-dollar programmes that are already supported by multiple gold-standard, controlled trials.

Federal agencies are already using the tiered model for six evidence-based programmes — ranging from teen-pregnancy prevention to education — with budgets totalling about US\$1 billion in 2012. Obama's new budget proposes to boost that funding by 44% for 2014.

Another suggested strategy, pioneered in the United Kingdom, is a model known as 'social impact bonds' or 'pay for success'. It sees philanthropic organizations and private companies fund preventative services, with the government paying them back only if rigorous assessments show that the services save taxpayers' money. US federal agencies have tried this approach on a small scale with job-training programmes and projects to reduce recidivism in newly released

prisoners. In 2014, Obama proposes to spend up to \$195 million to expand these initiatives into areas such as housing and education.

Such strategies for data-driven decision-making have the potential to radically improve the US government's efficiency and effectiveness, and deserve vigorous support from Congress — with one caveat: both Congress and president must be equally vigorous about supporting research into what success actually means and how to measure it. These are still open questions in most areas of policy. Most parents, for

instance, probably think that there is more to a good education than getting their child to score well on standardized tests. It can be difficult to quantify such intangible benefits, but that is no excuse not to try.

Everyone favours government effectiveness as a concept. But every existing programme is also someone's livelihood. When those

judged ineffective — by whatever measure — are cut or consolidated, the protests and the lobbying are fierce. If officials can resist that pressure, evidence-based policy initiatives could help to bring about a much-needed shift in the inflamed fiscal debate, from ideology to pragmatism.

The OMB memorandum captured that spirit in a refreshingly un-bureaucratic call to arms: "Where evidence is strong, we should act on it. Where evidence is suggestive, we should consider it. Where evidence is weak, we should build the knowledge to support better decisions in the future."

That is easy to say; it is harder to do. But to say it is a start. ■

Smoke and mirrors

Italy's parliament must listen to expert advice before deregulating stem-cell therapies.

Just weeks after the white smoke from the Vatican signalled the election of a new pope, a grimmer pall hangs over the Eternal City — a fog of confusion and misrepresentation about stem-cell therapy. Those who have lit the fire beneath the debate say that they are promoting the translation of stem-cell research into the clinic so that currently incurable diseases can be treated. Nothing could be further from the truth.

The Second International Vatican Adult Stem Cell meeting, held on 11–13 April in Vatican City, was a shamelessly choreographed performance. Sick children were paraded for television, sharing the stage with stem-cell companies and scientists desperate to hawk a message that their therapies must be speeded to clinical use.