to Shapin. He is the "entrepreneurial scientist", the iconoclast personifying science's identity crisis. Venter made his fortune pushing back the boundaries of science and sees no contradiction between doing science for love and doing it for money.

Shapin's book draws heavily on documentary evidence. But one chapter has him observing modern science in action. Through interviews with scientists who have worked in companies and universities, particularly those located thematically in biotechnology and geographically in California, he reveals that our assumptions about private and public science are out of date. Universities are not "ivory towers" and companies are not "iron cages". The flexible companies of Silicon Valley now are a world away from the industrial R and D labs of the 1950s and 1960s. They make up the rules as they go along and are often driven by values and vision as well as profits. In universities, the pressures of teaching, bureaucracy, research proposals, and having to work with companies themselves have taken public science further away from its unfettered halcyon days, if they ever existed.

Shapin's book benefits from the bringing together of a vast wealth of history and insight around a simple question: who are scientists? Shapin has always been more willing than most historians to draw his analysis to the present. The picture that he paints of the contemporary scientist is a necessary reality check. And his historical account tells us that these changes are not sudden. Scientists have been debating how their roles and identities have changed for decades. Discussion of the direction, pace, and ethics of scientific research has always run alongside the science itself. But in public, scientists have typically been unwilling to mark themselves out from other people. According to Shapin, as science becomes more powerful and more problematic, personal virtues matter more than ever. Our understanding of science, and what it means to be a scientist, is still clouded by myth and hagiography. We now need to put the people back in and hear the stories of normal, everyday scientists.

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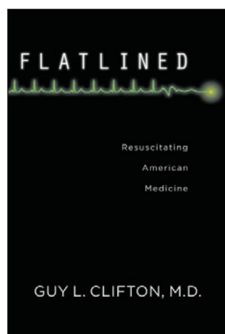
In brief



Flatlined: Resuscitating American Medicine
Guy L Clifton. Rutgers University Press, 2009. Pp 304. US$26·95. ISBN 978-0-8135-4428-1.

Book A plan for US health care

Currently, the USA spends more than 16·5% of its gross domestic product (GDP) on health care, twice that of the average industrialised nation, and more than is spent on housing and national defence combined. Our emergency rooms are crowded with the uninsured who receive substandard care, both basic disease prevention and urgent specialty care is vanishing for middle-class citizens who can barely afford their premiums or deductibles, while hospitals profit from often unnecessary procedures and the pharmaceutical industry makes a killing on copycat drugs.

Enter Guy Clifton, a distinguished Texan neurosurgeon who spent a year as a Health Policy Fellow in US Congress to develop the ideas he presents in this enlightening book, which I think is by far the best of its kind in recent memory. Clifton calls the US's flirtation with managed care in the 1990s "the right concept badly executed" and sees it as the genesis of the current crisis.

He identifies the key drivers of health-care expenditure as: the rampant use of tests and procedures of marginal clinical benefit and great expense; lack of standardisation of medical work-ups and treatment protocols; poor adherence to end-of-life directives leading to massive life support expenses; the practice of defensive medicine; and the lack of preventive care leading to more expensive interventions later on as drivers of health-care expenditure. In fact, Clifton argues that if these profound inefficiencies were curbed, the USA could curb health-care costs, improve quality of care, and provide reasonable and affordable care for all Americans.

Health care in the USA is a business culture with entrenched interests that exert a powerful lobby. Thus, Clifton tells us that physicians need to have a financial incentive for practising efficient medicine—ie, sharing savings for good practice, relieving physicians of culpability for missed diagnoses if a standard workup is done, and public monitoring of physicians' performance. Hospitals and private insurers both function as regional oligopolies with little competition. Reclamation of moneys wasted by inefficiency and poor practice would, he suggests, be enough to provide insurance for all. Fundamentally, Clifton argues, market forces alone cannot correct the disparities or manage costs in the runaway US health-care system. Federal regulation is required to control markets, encourage competition, and establish cost-effective treatment and prevention paradigms through—and this is the crux of his plan—the creation of an independent regulatory body similar to the Federal Reserve Banks, insulated from the political process. The new administration would do well to read this book, if it is, indeed, committed to intelligent health-care reform.

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