

Chapter Five

Technology

MYTH NO. 5: COUNTRIES WITH SINGLE-PAYER NATIONAL HEALTH CARE SYSTEMS HAVE ACCESS TO THE LATEST TECHNOLOGY

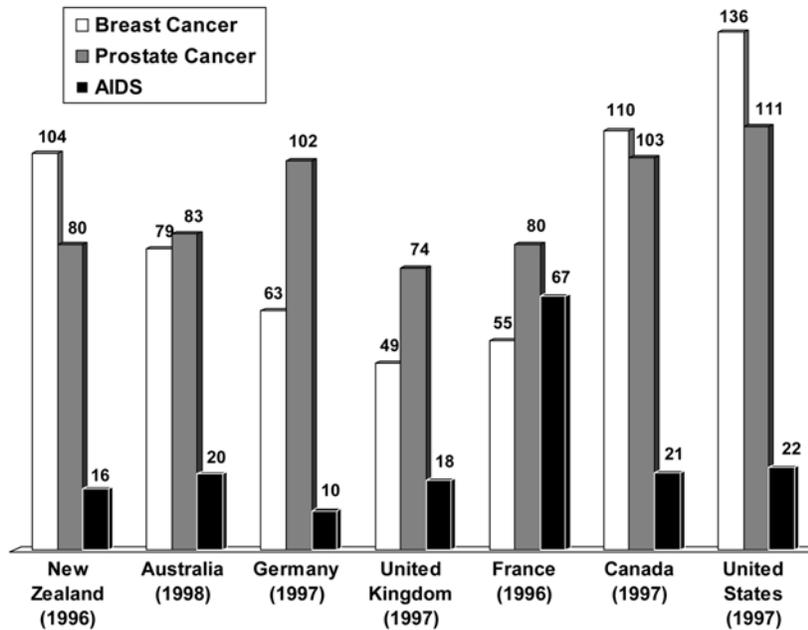
One could argue that the need for technology varies from country to country. For example, the incidence of AIDS, breast cancer and prostate cancer is higher in the United States than in many other developed countries¹ (see figure 5.1). However, every country needs certain critical, lifesaving technologies to diagnose and treat disease. A nation's ability and willingness to sufficiently invest in modern medical technology is one determinant of the effectiveness of its health care system. By this measure, the United States fares better than its single-payer counterparts.²

THE POLITICS OF MEDICAL TECHNOLOGY

Overall, the best way to think about government policies toward technology is in terms of the politics of medicine. As the role of government expands, health care tends to evolve from a protechnology phase to an antitechnology phase. In the first stage, government tends to spend on items perceived as underprovided by the market or by conventional health insurance. Thus, practically every less-developed country has used government funds to build at least one modern hospital, usually in the largest city, and to stock it with at least one example of each new technology, while all but the wealthiest citizens lack basic medical care and public sanitation.

FIGURE 5-1

Incidence of Disease (Per 100,000 people per year)



Sources: Gerard F. Anderson and Peter S. Hussey, "Multinational Comparisons of Health Systems Data," Commonwealth Fund, October 2000.

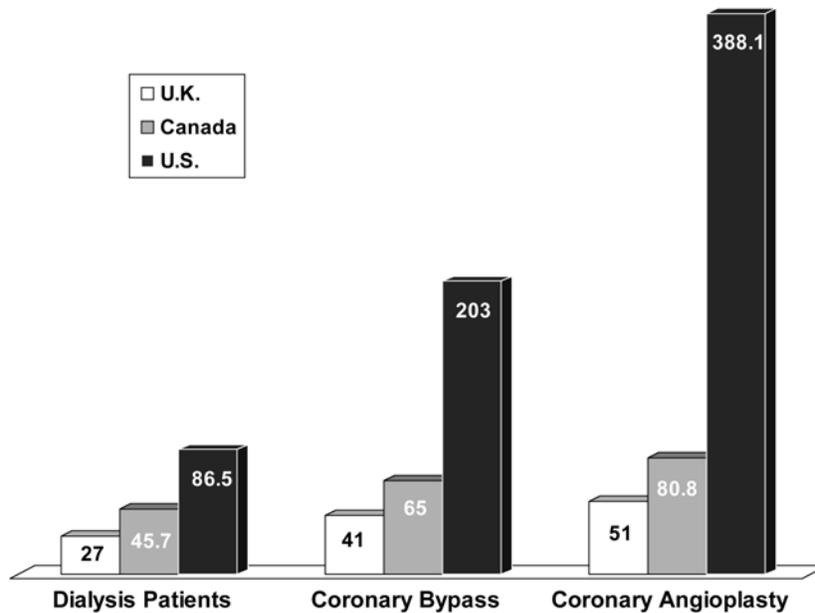
As government's role in medicine expands, more and more interest groups must be accommodated. In this stage, government policy tends to become antitechnology because the few people who are acutely or chronically ill and need expensive technology are heavily outnumbered by the healthier many who desire amenities. (The nature of these amenities will be discussed in detail in chapter 11.) Along the way, these general trends may be violated with respect to any particular technology because of the varied, even random, ways in which special interest pressures are exerted. (We will return to the politics of medicine below.)

USE OF MODERN MEDICAL PROCEDURES

As a result of these political pressures, patients in countries with single-payer health systems usually have less access to critical medical procedures. Figure

FIGURE 5-2

Use of High-Tech Medical Procedures (Procedures per 100,000 people per year)



Sources: Gerard F. Anderson, Uwe E. Reinhart, Peter S. Hussey and Uarduhi Petrosyan, "It's the Prices, Stupid: Why the United States Is So Different from Other Countries," *Health Affairs*, Vol. 21, No. 3, May/June 2002, Exhibit 5.

5.2 compares the rate of use for high-tech medical procedures in Britain, Canada and the United States:

- The use of coronary bypass surgery in the United States is slightly more than three times higher per capita than in Canada and almost five times higher than in Britain.
- The rate of coronary angioplasty in the United States is almost five times higher than in Canada and almost ten times higher than Britain's.
- The rate of renal dialysis in the United States is double that of Canada and almost three times that of Britain.

ACCESS TO MEDICAL TECHNOLOGY IN BRITAIN

Although Britain has pioneered the development of important medical technology, the British often have less access to that technology than patients in other countries. For example, Britain was the codeveloper with the United States of kidney dialysis in the 1970s, yet Britain consistently has had one of the lowest dialysis rates in Europe. According to British renal specialists, today the country has only enough kidney dialysis capability to meet 82 percent of the need,³ which implies that one in eight Britons who need kidney treatment do not receive it. However, British doctors may be underestimating the need, perhaps because they are conditioned by the culture of rationing. As we saw in figure 5.2, the number of people accepted for renal therapy per capita in the United States is almost three times that of Britain. For example, computed tomography (CT) scanners, which are useful in the diagnosis and treatment of cancer,⁴ were also invented in Britain. For years Britain manufactured and exported about half the CT scanners used in the world. Yet, through the years the British government purchased very few scanners for the NHS, and even discouraged private gifts of the devices to the NHS.⁵ Today Britain has only half the number of CT scanners per million population (6.5) as the United States (13.6).⁶

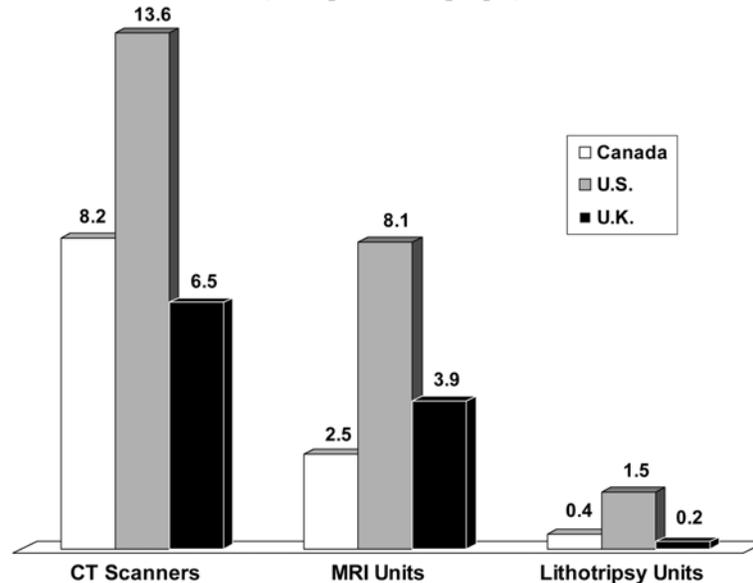
While critics of the U.S. health care system claim that we have too much technology, all the evidence suggests that our counterparts have too little as a result of the conscious decisions of government officials. As figure 5.3 shows, Britain's NHS has also skimmed on the newer magnetic resonance imaging (MRI) scanners that can detect disease throughout the body, including aneurysms or tears in the aorta, strokes and tumors. Britain (at 3.9 MRI scanners per million population) has less than half as many as the United States (8.1 per million). There is strong evidence of a general underuse of other valuable therapies as well.⁷ For instance,

- An Institute of Economic Affairs study argues that one effect of underinvestment in technology is that Britain has the lowest survival rates for victims of lung cancer and heart disease among European countries.⁸
- ACE inhibitors, used in coronary heart failure, are prescribed to only 20 percent to 30 percent of patients with heart failure.⁹
- Echocardiography, a diagnostic test that uses ultrasound waves to make images of the heart, is not available to all patients; although the test is low-cost and highly effective, in some regions only about one-third of heart failure patients receive it.¹⁰

Not only is the heart disease survival rate poor in Britain, the country is doing little to improve it; a British Cardiac Society survey found risk factors management and preventive treatment to be well short of what they should be.¹¹

FIGURE 5-3

**Access to Modern Medical Technology
in the U.S., Britain and Canada (2000)**
(Units per million people)



Sources: Gerard F. Anderson, Uwe E. Reinhart, Peter S. Hussey and Uarduhi Petrosyan, "It's the Prices, Stupid: Why the United States is So Different from Other Countries," *Health Affairs*, Vol. 22, No. 3, May/June 2003, Exhibit 5, p. 97; and Stephen Pollard, "European Health Care Consensus Group Paper," Centre for the New Europe, January 4, 2001.

**ACCESS TO MODERN MEDICAL
TECHNOLOGY IN CANADA**

In terms of availability of advanced medical technology, Canada now ranks at the bottom of the twenty-nine OECD countries, despite the fact that Canadian spending on health care (as a percentage of GDP) is fifth in the world.¹² Figure 5.3 compares the availability of modern medical technology in the United States, Britain and Canada:

- On a per capita basis, the United States has more than three times as many MRI units as Canada.¹³
- Per person, the United States has nearly four times as many lithotripsy units, which avoid expensive and invasive surgery by using sound waves to destroy kidney stones and gallstones.¹⁴

- The United States has almost twice as many CT scanners per capita as Canada.¹⁵
- As of November 2001, Canada had only 3 public-sector PET scanners—and one of those only operated one evening a week—compared to 250 in the United States.¹⁶

In addition, much of the medical technology that is available in Canada is archaic and ineffective. In Canadian hospitals, for example, 63 percent of all general X-ray equipment is severely outdated and half of all diagnostic imaging units require replacement.¹⁷

At the regional level, the difference in the level of access Americans and Canadians have to such technologies is even more striking. Figure 5.4 shows the percentage of hospitals in British Columbia, Washington and Oregon that are equipped to provide specialized services. As the figure shows, in 1999¹⁸

- Angioplasty, a procedure to dilate obstructed coronary arteries, was available at only one regional hospital in British Columbia, compared to 80 percent of the facilities in Washington and Oregon.
- Cardiac catheterization, which assesses the extent of blockage in coronary arteries, was available at only 20 percent of the hospitals in British Columbia, but is widely available south of the border.

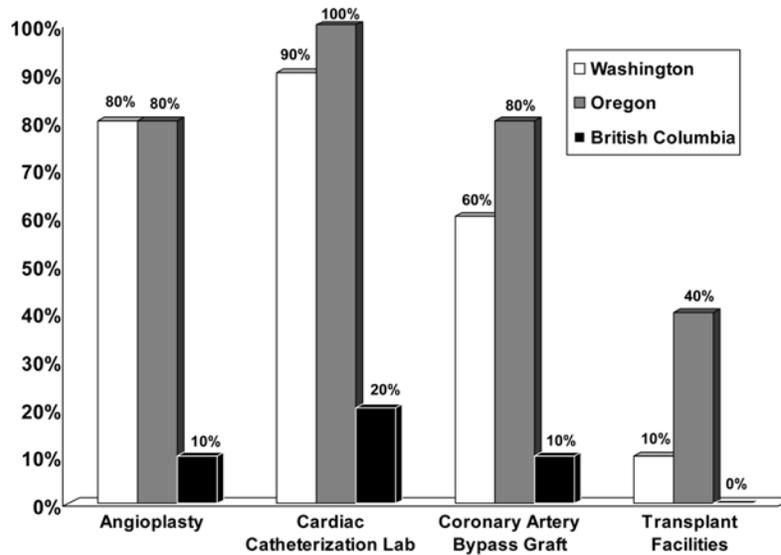
There also is a wide difference in the availability of other technologies.¹⁹

- In the state of Washington, virtually 100 percent of community and regional hospitals have access to MRI units, compared to 20 percent in neighboring British Columbia.
- In the state of Oregon, 90 percent of community and regional hospitals have access to lithotripsy units, while there are none whatsoever in British Columbia.

Theoretically, Canadians are not allowed to purchase MRI scans, despite long waits in the public sector. Yet, as we have seen, loopholes in the law are being tested as private scanning clinics pop up around the country, similar to what has happened in the United States. Americans not only pay out of pocket for MRI scans, they do not even need a doctor's order or any indication of a medical problem. Indeed, for \$500 or so, U.S. citizens can purchase full body scans at shopping malls around the country much as they engage in other impulse buying. Although the medical community tends to be scornful, there is the odd chance that a scan may save a person's life, much as the purchase of a flashlight might save a person's life.

FIGURE 5-4

Availability of Medical Technology in British Columbia, Washington & Oregon Hospitals



Source: David Harriman, William McArthur and Martin Zelder, "The Availability of Medical Technology in Canada: An International Comparative Study," Fraser Institute, 1999.

NOTES

1. Anderson and Hussey, *Multinational Comparisons of Health Systems Data*.
2. Uwe Reinhardt, Peter S. Hussey and Gerard F. Anderson, "Cross-National Comparisons of Health Systems Using OECD Data, 1999," *Health Affairs* 21, no. 3 (May/June 2002): 169–81, Exhibit 5.
3. David Green and Laura Casper, *Delay, Denial and Dilution: The Impact of NHS Rationing on Heart Disease and Cancer* (London: Institute of Economic Affairs, 2000).
4. "Health and Medical Information," *MedicineNet.com*. Accessed December 2003.
5. John C. Goodman, *National Health Care in Great Britain: Lessons for the U.S.A.* (Dallas: Fisher Institute, 1980), 96–104.
6. Gerard F. Anderson, Uwe E. Reinhardt, Peter S. Hussey, and Varduhi Petrosyan, "It's the Prices, Stupid: Why the United States Is So Different from Other Countries," *Health Affairs* 22, no. 3 (May/June 2003): 89–105.

7. For a framework of NHS coronary care goals, see “National Service Framework for Coronary Heart Disease,” UK Department of Health, London, 2000.
8. Green and Casper, *Delay, Denial and Dilution*.
9. Green and Casper, *Delay, Denial and Dilution*. ACE inhibitors lower blood pressure by blocking Angiotensin Converting Enzyme, which allows blood vessels to relax and expand. Also see Martin Eccles, Nick Freemantle and James Mason, “North of England Evidence-Based Development Project: Guideline for Angiotensin Converting Enzyme Inhibitors in Primary Care Management of Adults with Symptomatic Heart Failure,” *British Medical Journal* 316 (May 2, 1998): 1369–75.
10. Green and Casper, *Delay, Denial and Dilution*.
11. Green and Casper, *Delay, Denial and Dilution*.
12. David Harriman, William McArthur and Martin Zelder, “The Availability of Medical Technology in Canada: An International Comparative Study,” Fraser Institute, Public Policy Sources No. 28, August 6, 1999.
13. Anderson et al., “It’s the Prices, Stupid.”
14. Pollard, “European Health Care Consensus Group Paper.” For a comparison of OECD countries, also see Harriman, McArthur and Zelder, “The Availability of Medical Technology in Canada.”
15. Anderson et al., “It’s the Prices, Stupid.”
16. Tom Arnold, “Canada’s Medical System Lacks Many Bells and Whistles,” *National Post*, November 17, 2001.
17. Canadian Association of Radiologists. Reported in Tom Arnold, “X-ray Labs Dangerously Outdated,” *National Post*, October 12, 2000.
18. Harriman, McArthur and Zelder, “The Availability of Medical Technology in Canada.”
19. Harriman, McArthur and Zelder, “The Availability of Medical Technology in Canada.”