

## *Chapter Nine*

# Unnecessary Care

### **MYTH NO. 9: COUNTRIES WITH SINGLE-PAYER NATIONAL HEALTH CARE SYSTEMS ELIMINATE UNNECESSARY MEDICAL CARE**

A frequent criticism of the U.S. health care system is that it is wasteful because a considerable number of procedures are “unnecessary.” For example, in 1989 Robert Brook of the Rand Corporation asserted that “perhaps one-fourth of hospital days, one-fourth of procedures and two-fifths of medications could be done without.”<sup>1</sup> To support this contention, Rand researchers pointed to wide variations in 123 medical procedures for Medicare patients in various parts of the country.<sup>2</sup> The rate at which the procedures were performed varied by as much as six, seven, or eight to one, with no apparent explanation. Areas that were high in performing one procedure were often low in performing another. Other studies have found similar results.<sup>3</sup> But knowing there are variations does not reveal whether some patients are being shortchanged and others overtreated.<sup>4</sup>

### **THE RAND STUDY OF UNNECESSARY CARE**

A subsequent Rand study collected medical records for 5,000 Medicare patients treated in 1981 and convened a panel of experts to judge the appropriateness of three procedures.<sup>5</sup> The results showed that in slightly more than a fifth of the cases, the procedure performed was judged inappropriate and therefore unnecessary. For carotid endarterectomy (the removal of plaque in major arteries to the brain), the procedure was judged appropriate only about one-third of the time.<sup>6</sup> National media widely reported these results, and they

became Exhibit A in building the case for the managed care revolution during the 1990s (see table 9.1). But a closer examination reveals more than first meets the eye. For example, why did Rand need to convene a panel of experts? Because researchers could not answer questions about appropriateness by merely consulting the medical literature. And the convened experts were far less unified than media reports suggested.

### REEXAMINING THE EVIDENCE OF UNNECESSARY CARE

The classifications depicted in table 9.1 were decided by a majority vote. Table 9.2 presents a different way of looking at the Rand study, showing the number of times that seven of nine experts agreed. (The two opinions ignored are the two most extreme.) As the table shows, seven of the nine found only 12 percent of the procedures to be inappropriate, not 22 percent. And even this degree of consensus is misleading. In the Rand study, each expert initially expressed a personal judgment. Then they met for discussions in which group pressure favored consensus and members often changed their minds.<sup>7</sup> Indeed, the most remarkable fact about the Rand study was that despite their efforts to arrive at a definitive judgment, seven of nine experts could agree less than half the time that the procedures were either definitely appropriate or definitely inappropriate.

### EVIDENCE TODAY

What inferences can we draw from a study of medical records in 1981 for the practice of medicine today? Since then, major changes have been made in the way hospitals are run. For better or for worse, American physicians are now more closely scrutinized by peers and third-party payers than physicians anywhere else in the world. This scrutiny, coupled with the prospect of malpractice liability lawsuits, limits the likelihood of procedures that do more harm than good. It still may happen in HMOs as well as fee-for-service insurance plans, but it is much less likely than two decades ago. The results of three studies of surgery in New York State in 1990 are consistent with this judgment. In all three cases, the fraction of inappropriate procedures was judged to be 4 percent or less.<sup>8</sup>

### MEDICAL ART VERSUS MEDICAL SCIENCE

Medical science has clearly advanced over the past two decades. Despite that fact, practicing physicians still hold widely differing opinions about the appropriateness of care.

TABLE 9-1

### Rand Corporation Study on Unnecessary Medicine as Reported by the U.S. National Media

	Panel's Assessment <sup>1</sup>		
	Appropriate	Equivocal	Inappropriate
Coronary angiography <sup>2</sup>	74%	9%	17%
Carotid endarterectomy <sup>3</sup>	35%	32%	32%
Upper gastrointestinal endoscopy <sup>4</sup>	72%	11%	17%
Overall	60%	18%	22%

<sup>1</sup> Based on medical records of 5,000 Medicare patients.

<sup>2</sup> Use of X-rays and dye to expose obstructions of the heart.

<sup>3</sup> Surgical removal of obstructions in major arteries to the brain.

<sup>4</sup> Fiber optic examination of the esophagus, stomach and upper intestine.

Source: Rand Corporation study results reported in the *Wall Street Journal*,  
March 22, 1990.

More than half the procedures in the Rand study fell between the do-no-harm standard and the conservative standard of performing a procedure only if it is definitely appropriate (see table 9.1). In the New York studies, the "uncertain" range was as high as 38 percent. These findings imply an enormous range over which discretion can be exercised and still fall within the bounds

TABLE 9-2

### More Details on the Rand Study

	Percent of Time 7 to 9 Experts Agree that Procedure Is:	
	Appropriate	Inappropriate
Coronary angiography	50%	12%
Carotid endarterectomy	13%	17%
Upper gastrointestinal endoscopy	46%	7%
Overall	36%	12%

Source: Robert H. Brook, "Practice Guidelines and Practicing Medicine: Are They Compatible?" *Journal of the American Medical Association*,  
December 1, 1989.

of good science and medical ethics. They also imply that often there is no objective “right” answer and that the practice of medicine remains as much an art as a science. Thus, the debate about unnecessary or inappropriate treatments is far from over.<sup>9</sup> Put crudely, these studies point to the prospect of a health plan being able to make a great deal of money by substantially reducing the number of procedures performed without violating any professional code of conduct.

### THE FIND-NO-HARM APPROACH TO IDENTIFYING INEFFICIENT CARE

Researchers at Milliman & Robertson (M&R), a leading actuarial consulting firm, have taken a different approach to this issue. Rather than attempt to determine whether procedures are appropriate, M&R analysts sought to determine whether fewer days in a hospital can cause detectable harm. If they could detect none, M&R concluded that the extra days represented unnecessary (read: inefficient) care.<sup>10</sup>

For example, take groups of similar patients hospitalized for two, four and six days for a specific condition. Suppose medical records show that the health outcomes of patients with a two-day hospital stay are no different from those of patients with four- or six-day stays. M&R would conclude that the four-day stay involved two days and the six-day stay four days of unnecessary hospitalization. Using a similar methodology, suppose people treated as outpatients fared just as well as people hospitalized for the same condition. Then M&R would conclude that all the inpatient days were unnecessary. Proceeding in this way, M&R estimated the total number of unnecessary hospital days for the country as a whole. Table 9.3 shows the following:<sup>11</sup>

- M&R estimated that two-thirds of hospital days of nonelderly patients were unnecessary in Newark, Philadelphia, Pittsburgh and New Orleans.
- The range was from 35 percent in Portland to 72 percent in New York City.
- Nationwide, M&R estimated that 54 percent of all inpatient days were unnecessary.<sup>12</sup>

For the elderly (Medicare) population, M&R estimated that 53 percent of inpatient care was unnecessary, ranging from 34 percent in Honolulu to 65 percent in New York City.

Two critical assumptions lie behind these estimates. First, in deciding whether hospital stays were unnecessary, M&R looked only at outcomes and not at risk reduction. For example, even if the four-day hospital stay produced

TABLE 9-3

**Milliman & Robertson Estimate  
of Unnecessary Days in U.S. Hospitals  
(Nonelderly Population)**

Market	Estimated Percentage of Days Unnecessary
New York	72%
New Orleans	68%
Pittsburgh	67%
Philadelphia	67%
Newark	67%
National average	54%
Seattle	41%
San Diego	40%
Salt Lake City	39%
Phoenix	38%
Portland	35%

Source: David V. Axene, Richard L. Doyle and Dirk van der Burch, *Research Report: Analysis of Medically Unnecessary Inpatient Services* (Seattle: Milliman & Robertson, 1997); and Milliman & Robertson, *Length of Stay Efficiency Index for 1996* (Seattle: Milliman & Robertson, 1997).

the same medical outcome as the two-day stay, the risks to which patients were exposed were different. On the one hand, simply being in a hospital adds to risk. According to one study, two million Americans pick up infections during a stay in the hospital each year—almost 10 infections for every 1,000 patient days—and 106,000 of these were fatal. Moreover, one of every 300 patients dies of adverse drug reaction, making that one of the leading causes of death.<sup>13</sup> Although these results have been disputed, no one thinks the risks are negligible.<sup>14</sup> But being in a hospital reduces risk in other ways. If the patient's health worsens, the hospital can bring highly specialized resources to bear right away.

Other things being equal the less time spent in the hospital, the better. But not everyone shares this view. Take well-baby delivery, for example. Managed care organizations have decided that two nights in a hospital and perhaps even one night is unnecessary. But one study found that babies released from the hospital less than seventy-two hours after birth have a small increased risk of readmission.<sup>15</sup>

A second assumption is that because a length-of-stay objective is met somewhere in the United States, it can be met everywhere. M&R encouraged this interpretation by publishing guidelines on appropriate lengths of stay for surgical procedures.<sup>16</sup> HMOs and other managed care organizations used the guidelines to pressure providers. Physicians were appalled. The reason? M&R's recommended lengths of stay are very different from what most physicians think is appropriate for their patients.<sup>17</sup>

- Whereas M&R recommended that women stay in a hospital a little over one day for a normal baby delivery and two and one-half days for a cesarean, the national average is more than two days for the former and more than four for the latter.
- Whereas M&R recommended that mastectomies be done on an outpatient basis, the average length of stay for the country as a whole is two and one-half days.
- In the case of the high-risk procedure of esophagectomy (removal of the esophagus), M&R recommended five days compared to an average actual patient stay of thirteen days.
- For a mid-shaft femur fracture (broken thigh bone), M&R recommended one day, while the average patient stay is six days.
- For craniotomy (brain surgery), the difference is five days and for a radical hysterectomy, seven days.

Clearly, what M&R recommended is not what most doctors might prescribe. And the use of such guidelines to press for premature patient releases has caused political turmoil. For example, in response to patient complaints about drive-through deliveries, a 1997 federal law guarantees mothers the right to hospital stays of two days for well-baby delivery and four days for a cesarean. Dozens of states have passed similar laws. Who is right: M&R, the doctors or the politicians? In some cases M&R may simply be wrong. In other cases, M&R may theoretically be right, but its guidelines cannot be met through the simple expedient of early release. As following case study notes, meeting the guidelines may require completely changing the way doctors practice medicine.

### CASE STUDY: MASTECTOMIES

M&R guidelines state that an ordinary mastectomy can be performed outpatient with a stay as short as six hours. There is a facility that meets this standard, but it is the only place in the country that does so—the Johns Hop-

kins Breast Center. Under the leadership of William Dooley and Lillie Shockney, the center has revolutionized breast surgery by investing time, effort and energy in learning how to do the procedure differently from standard practice.

For example, whereas a mastectomy would ordinarily average about two hours, Dooley does it in forty-seven minutes. Because the center uses a different anesthesia and anesthetizes the patient for much less time, recovery is quicker and side effects are fewer. Patients have the option of spending the night in the hospital, but most choose to go home. They can do so because several days prior to surgery they go through a three-hour training session with their care partner (usually someone who lives in the home with the patient). Such training is important, because patients need to be able to monitor their own progress and recognize signs of potential trouble. In addition, after surgery a nurse visits the patients in their homes twice.

The result is lower cost, higher quality and satisfied patients. Yet, if an HMO insisted on outpatient surgery without changes in hospital technique and patient training, the risk of unhappy patients reappearing in the emergency room with further complications might greatly increase.<sup>18</sup>

### ECONOMIC IMPLICATIONS OF THE M&R AND RAND STUDIES

What the Johns Hopkins Breast Center has designed is a more efficient way to perform breast surgery. Women are not simply sent home earlier; they are enabled to go home early. And the fact that more hospitals around the country have not copied the technique indicates how inefficient our health care system is, compared to other markets.

The Rand study focused on the decision to perform surgery and strongly implied that unnecessary care was being delivered for economic reasons. However, the opposite incentive is present with respect to length of stay. Most physicians have a direct or indirect economic incentive to reduce length of stay.<sup>19</sup> The fact that it takes so long for efficient surgical techniques to be widely adopted implies that doctors are not responding quickly enough to economic incentives!

Why not? It is tempting to conclude that physicians find it easier to continue inefficient surgical procedures and the risks of early release than to invest in learning more efficient techniques. Unfortunately, this conclusion is consistent with the idea that managed care rewards cost reduction at the expense of quality more than cost reduction produced by greater efficiency and subsequent quality improvement.

## UNNECESSARY CARE IN OTHER COUNTRIES

One might suppose that in countries where health care is rationed and many medical needs go unmet, doctors would tend to provide only “necessary” care. This is not the case. According to Rand research, those who receive care may not be those most in need of care. A review of the medical records on coronary artery bypass surgery performed in the Trent region of Britain found many were performed for less than appropriate reasons (using both British and American criteria).<sup>20</sup> Overall, Rand researchers found that<sup>21</sup>

- 21 percent of British coronary angiographies and 16 percent of coronary artery bypass graft surgeries were performed for inappropriate reasons.
- In some regions, coronary angiography and coronary artery bypass procedures were found to be inappropriate about 50 percent of the time.
- In the Northwest Thames region, 60 percent of gall bladder removals with a laparoscope were found to be inappropriate about 50 percent of the time.

Despite waiting lists, health authorities appear not to question the appropriateness of the procedures for which patients are waiting.<sup>22</sup> Rand researcher Robert Brook, himself a physician, told a U.S. Senate committee, “I was shocked to find that half of the people who actually got cardiac revascularization did not meet criteria established by physicians in the UK for getting those procedures.”<sup>23</sup>

Rand researchers found similar results in other countries with national health insurance. For example:

- In Israel, 29 percent of gall bladder removals were performed for “less-than-appropriate” reasons.<sup>24</sup>
- A panel of reviewers found that 19 percent of referrals of Swedish patients for coronary revascularization were inappropriate.<sup>25</sup>

The Rand summary concluded, “Contrary to the researchers’ expectations, habitual rationing of resources did not restrict use of these sophisticated and expensive treatments to only those who would most clearly benefit from them.”<sup>26</sup> Other studies have come to similar conclusions.<sup>27</sup>

## NOTES

1. Robert H. Brook, “Practice Guidelines and Practicing Medicine: Are They Compatible?” *Journal of the American Medical Association* 262, no. 21 (December

1, 1989): 3028. The Rand Corporation has published a number of studies over the past decade examining the appropriateness of various medical and surgical procedures. For a summary and selected bibliography of Rand research, see "Assessing the Appropriateness of Care," Rand Corporation, Health Research Highlights, RB-4522, 1998. The methodology used in the studies is described by Robert H. Brook, "The Rand/UCLA Appropriateness Method," in K. A. McCormick, S. R. Moore and R. A. Siegel, eds., "Clinical Practice Guidelines Development: Methodology Perspectives," available as Rand Reprint RP-395, 1995.

2. A summary of Rand Corporation research may be found in Mark R. Chassin, ed., *The Appropriateness of Selected Medical and Surgical Procedures* (Ann Arbor, Mich.: Health Administration Press, 1989).

3. See, for example, John E. Wennberg, "Understanding Geographic Variations in Health Care Delivery," *New England Journal of Medicine* 340, no. 1 (January 7, 1999): 52–53.

4. John W. Dawson, "Practice Variations: A Challenge for Physicians," *Journal of the American Medical Association* 258, no. 18 (November 13, 1987): 2570.

5. Mark R. Chassin et al., "Does Inappropriate Use Explain Geographic Variations in the Use of Health Care Services? A Study of Three Procedures," *Journal of the American Medical Association* 258, no. 18 (November 13, 1987): 2533–37; Jacqueline Kosecoff et al., "Obtaining Clinical Data on the Appropriateness of Medical Care in Community Practice," *Journal of the American Medical Association* 258, no. 18 (November 13, 1987): 2538–42; and Mark R. Chassin et al., "How Coronary Angiography Is Used: Clinical Determinants of Appropriateness," *Journal of the American Medical Association* 258, no. 18 (November 13, 1987): 2543–47.

6. "Appropriateness" was not determined by Monday morning quarterbacking, rather it was based on indications prior to the procedure. A procedure was judged appropriate if the expected benefit (increased life expectancy, relief of pain, etc.) exceeded the expected negative consequences (mortality, morbidity, etc.) by a margin sufficient to justify the procedure.

7. "Disagreement among the panelists diminished following their discussions, but by no means disappeared." Chassin, *The Appropriateness of Selected Medical and Surgical Procedures*, 8.

8. Lucian Leape et al., "The Appropriateness of Use of Coronary Artery Bypass Graft Surgery in New York State," *Journal of the American Medical Association* 269, no. 6 (February 10, 1993): 753–60; Lee Hilborne et al., "The Appropriateness of Use of Percutaneous Transluminal Coronary Angioplasty in New York State," *Journal of the American Medical Association* 269, no. 6 (February 10, 1993): 761–65; Steven Bernstein et al., "The Appropriateness of Use of Coronary Angiography in New York State," *Journal of the American Medical Association* 269, no. 6 (February 10, 1993): 766–69.

9. Dawson, "Practice Variations." Also see David H. Mark, "Variations and Inappropriateness Are Not the Same," *Journal of the American Medical Association* 263, no. 23 (June 20, 1990): 3149–50.

10. This is part of M&R's efforts to aid employers and insurers in managing their costs.

11. David V. Axene, Richard L. Doyle and Dirk van der Burch, "Research Report: Analysis of Medically Unnecessary Inpatient Services," Milliman & Robertson, 1997; and "Length of Stay Efficiency Index for 1996," Milliman & Robertson, 1997.

12. M&R's estimate is based upon a population of under-sixty-five, private sector insured patients and excludes a small number of highly efficient managed care patients. Also see Axene, Doyle and van der Burch, "Research Report."

13. Jason Lazarou, Bruce H. Pomeranz and Paul N. Corey, "Incidence of Adverse Drug Reactions in Hospitalized Patients: A Meta-Analysis of Prospective Studies," *Journal of the American Medical Association* 279, no. 15 (April 15, 1995): 1200-5. See also Lawrence K. Altman, "Experts See Need to Control Antibiotics and Hospitals Infections," *New York Times*, March 12, 1998; Barbara Starfield, "Is U.S. Health Care Really the Best in the World?" *Journal of the American Medical Association* 284, no. 4 (July 26, 2000): 483-85, available at <http://jama.ama-assn.org/cgi/content/full/284/4/483>.

14. See Arthur Allen, "Overreaction," *New Republic* (June 8, 1998): 14-15.

15. The risk is of readmission for hyperbilirubinemia, an elevated level of bilirubin in the blood that can cause jaundice. See M. Jeffrey Maisels and Elizabeth Kring, "Length of Stay, Jaundice, and Hospital Readmission," *Pediatrics* 101, no. 6 (June 1998): 995-98.

16. The length of stay numbers in table VI were taken from the *Bulletin of the American College of Surgeons*, April 1997.

17. Milliman & Robertson, "The Length of Stay Efficiency Index," *Perspectives*, Milliman & Robertson, July 1995, with examples available online at [www.op.net/~jcookson/hlos.html](http://www.op.net/~jcookson/hlos.html); and Robert Rutledge et al., "An Analysis of 25 Milliman & Robertson Guidelines for Surgery," *Annals of Surgery* 228, no. 4 (1998): 579-87.

18. Among fee-for-service patients, about 10 percent of mastectomies without complications are performed as outpatient procedures, with a hospital stay of less than 24 hours. The risk of rehospitalization would be about 3.0 percent to 3.5 percent if all women were treated outpatient. See Joan L. Warren et al., "Trends and Outcomes of Outpatient Mastectomy in Elderly Women," *Journal of the National Cancer Institute* 90, no. 11 (June 3, 1998): 833-40.

19. Almost all physicians under managed care contracts have a direct financial interest in lowering hospitalization costs by reducing the length of stay. Fee-for-service insurance, including Medicare, often pays fixed fees for hospital procedures as well.

20. Steven J. Bernstein et al., "The Appropriateness of the Use of Cardiovascular Procedures: British versus U.S. Perspectives," Rand Corporation, RP-269, 1994.

21. Robert H. Brook, "Appropriateness: The Next Frontier," *British Medical Journal* 308, no. 6923 (January 22, 1994): 218-19. Also see Robert H. Brook et al., "A Method for the Detailed Assessment of the Appropriateness of Medical Technologies," *International Journal of Technology Assessment in Health Care* 2 (1986): 53-63.

22. Harry Hemingway and Bobbie Jacobson, "Queues for Cure?" *British Medical Journal* 310, no. 6983 (April 1, 1995): 818-19.

23. Robert H. Brook, "Ensuring Delivery of Necessary Care in the U.S.," Statement before the U.S. Senate Committee on Health, Education and Labor and Pensions, March 2, 1999. Also see Bernstein et al., "The Appropriateness of the Use of

Cardiovascular Procedures: British Versus U.S. Perspectives,” *International Journal of Technology Assessment in Health Care* 9, no. 1 (1993): 3–10.

24. “Assessing the Appropriateness of Care,” Rand Corp., RB-4522.

25. Steven J. Bernstein et al., “Appropriateness of Referral of Coronary Angiography Patients in Sweden,” *Heart* 81, no. 5 (May 1999): 470–77.

26. “Assessing the Appropriateness of Care,” Rand Corp., RB-4522.

27. See Kathryn Fitch et al., “European Criteria for the Appropriateness and Necessity of Coronary Revascularization Procedures,” *European Journal of Cardio-Thoracic Surgery* 18, no. 4 (2000): 380–87.

