

The Changing Healthcare Market and How It Has Influenced the Treatment of Cardiovascular Disease—Part 1

Edmund R. Becker, PhD; Douglas C. Morris, MD; Steven D. Culler, PhD; Patrick D. Mauldin, PhD; Leslee J. Shaw, PhD; J. David Talley, MD; and William S. Weintraub, MD

Abstract

The dramatic transformations taking place in the healthcare environment have created a new paradigm for healthcare and pose far-reaching changes for cardiovascular care. This 2-part paper reviews these changes and discusses the major implications for cardiovascular specialists, based on literature reviews and summaries of legislative initiatives. The new healthcare paradigm focuses on a continuum of care, wellness maintenance and promotion, accountability for the healthcare of defined populations, and provider differentiation based on ability to add 'value' to the patient's healthcare outcome. This paradigm will become 'standard operating procedure' in the cardiovascular market. As a result, major areas of change in the cardiovascular environment include: continuing growth of managed care arrangements, expanding physician and other payment reforms, growing influence of state and private payer initiatives, expanding role of 'centers of excellence,' continuing surplus of physicians, growth in pharmaceuticals and new technologies, and extension of evidence-based guidelines.

Practice guidelines, in particular, will become an integral part of medical practice and will represent the standards against which medical practice will be measured. Given the prominent position of cardiovascular disease in healthcare, cardiovascular specialists will remain in the forefront of these developments.

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With the failure of the Clinton administration's healthcare reform (and the rapid growth in managed care penetration, it appears likely that cost-containment pressures will continue to mount and affect virtually every aspect of the healthcare system. These pressures have already created a new paradigm for the delivery of healthcare services, as shown in Table. The old paradigm emphasized acute patient care, the treatment of illness, individualized care, and homogeneous providers. The new paradigm shifts the focus to a continuum of care, wellness maintenance and promotion, accountability for the healthcare of defined populations, and provider differentiation based on their ability to add value to the patient's outcome. Under this new paradigm, market success is achieved by increasing the number of covered lives and keeping these patients well, as opposed to increasing the market share of inpatient admissions.^{1,2}

In 1995, cardiovascular disease (CVD) accounted for 1 of every 2.4 deaths. The American Heart Association (AHA) estimated the 1997 direct cost of CVD to be \$159 billion, or more than 15% of 1997 US healthcare costs. When the indirect costs of CVD

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From the Department of Health Policy and Management, Rollins School of Public Health, Emory University (E.R.B., S.D.C.); The Emory Heart Center (D.C.M.); Emory University Hospital (W.S.W.); Department of Biometry and Epidemiology, Medical University of South Carolina (P.D.M.); Division of Cardiology, Emory University (L.J.S.); and Division of Cardiology, University of Arkansas for Medical Sciences and Cardiology Section, John L. McClellan Memorial Veterans Hospital (J.D.T.).

Address correspondence to: Edmund R. Becker, PhD, Rollins School of Public Health at Emory University, 1518 Clifton Road NE, Room 626, Atlanta, GA 30345.

are also considered, the total cost of CVD to the nation is an estimated \$280 billion.³ Given the substantial economic and accompanying social costs—coupled with significant advances in medical, technological, and pharmacologic therapies—CVD has been pushed to the forefront of the healthcare revolution.

In this paper, we draw on existing literature and several legislative initiatives to determine how this dynamic healthcare environment will affect the CVD market. We begin by reviewing the healthcare environment and some of the major societal issues and concerns. We also summarize the implications of these issues on the CVD market and review some of the factors that have contributed to the CVD healthcare cost crisis. In a separate, follow-up article, we will outline some of the major developments that will influence the CVD market over the next 10 years. We will discuss the major implications and the future outlook for cardiovascular services.

...HEALTHCARE COST CONCERNS ...

During the last 3 decades, US healthcare costs rose dramatically. As of 1996, the United States was

spending more than \$1.035 trillion annually on healthcare, more than double the nation's 1985 healthcare spending. This represents 13.6% of the gross domestic product (GDP) or almost one seventh of all output in the United States.⁴ Three major areas comprise the bulk of US healthcare spending: hospital services, physician services and drugs, and other nonmedical services. Together, these 3 areas represented \$652 billion in 1996, or 63% of all national health expenditures.

In 1992, the Healthcare Financing Administration (HCFA) predicted that, without major healthcare reform, health spending would reach \$1.7 trillion annually (18.1% of GDP) by 2000 and \$16 trillion (32% of GDP) by 2030.⁵ Further, projections based on trends from the early 1990s showed that, by the year 2000, 28.8% of government expenditures would go toward healthcare and that the Social Security trust fund that supplies Medicare would likely be bankrupt.

Fortunately, the latest tabulation of US healthcare costs suggests a moderating trend. Although national healthcare costs exceeded \$1 trillion in 1996, the 1996 annual increase was the lowest in nearly 4 decades. Between 1993 and 1996, annual increases in health spending averaged only 5%, with each year registering successively slower growth than any year since 1960. These rates contrast sharply with the 11.7% average annual growth rates measured between 1966 and 1993.⁴

Table. The Healthcare Paradigm Shift

Old Paradigm	New Paradigm
Emphasis on acute inpatient care	Emphasis on a 'continuum of care'
Focus on treating illness	Emphasis on maintaining and promoting wellness
Responsible for individual patients	Accountability for the healthcare of defined populations
Essentially homogenous providers	Provider differentiation on the basis of their ability to add 'value' to the patient's healthcare outcome
Success is achieved by increasing market share	Success is achieved by increasing the number of covered lives and keeping people well
Hospitals, physicians, and health plans are distinct units	Integrated healthcare delivery systems

...ROLE OF MANAGED CARE IN HEALTHCARE COSTS ...

A growing body of research supports the premise that managed care has helped restrain costs.⁶⁻⁹ Information from the American Association of Health Plans indicates that managed care enrollment increased from 36% of the population in 1992 to 60% in 1996.¹⁰ This growth is attributed to the fact that managed care, which shifted reimbursement from fee-for-service to some form of capitation, attracts purchasers interested in lower premiums and out-of-pocket costs.^{11,12} To maintain these lower premiums, insurers negotiate price discounts with providers who, it is

argued, consequently alter their services to moderate their expenses. This, in turn, affects consumer utilization patterns.¹³

There is considerable debate, however, about the permanence of this growth reduction. It is unclear if the shift to managed care will produce a permanent or transient reduction in expenditures, like the past 5-year pattern in US healthcare growth. Some actuarial experts argue that healthcare cost increases will remain moderate. Using the most recent systematic data on cost trends—including 1998 private insurance premium, 1997 provider revenue, and 1997/1998 health service establishment payroll data—Ginsberg and Gabel¹⁴ have demonstrated only a small cost increase. Justification for a sustained growth reduction is largely based on the assumption that managed care may slow the diffusion of new technologies and drugs,^{15,16} which often increase costs.⁷ Other actuarial experts, however, project that national healthcare expenditures are climbing and will increase from 13.6% of GDP in 1996 to an estimated 16.6%, or \$2.1 trillion, by 2007.¹⁷ This projection is supported by the belief that managed care may only temporarily slow or delay the diffusion of new drugs and technologies. Further, while there is still considerable growth potential for managed care, especially in the Medicare and Medicaid markets, the influence of managed care on cost issues may wane as managed care enrollment matures and stabilizes.

Healthcare Costs and Comparisons with Other Countries

Regardless of which projection proves true, US healthcare costs and growth remain far higher than healthcare costs in other industrialized countries. In 1996, while the United States spent 13.6% of its GDP on healthcare, Germany spent 10.5% of its GDP, Switzerland 9.8%, France 9.6%, and Canada 9.2%.¹⁸ Despite these expenditures, the United States ranks poorly on most comparative measures of overall health and health status. The United States stands virtually alone in the developed world in that it lacks a rational and unified system for guaranteeing healthcare to its citizens. Other countries, both Western and non-Western, rich and not so rich, provide far better access to care for their citizenry at lower costs and with better health outcomes.¹⁹ Moreover, comparative surveys indicate that the US citizenry is the least satisfied with their healthcare system, while Canadian and West German citizens are the most satisfied with their systems.²⁰

...CARDIOVASCULAR DISEASE AND HEALTHCARE COSTS ...

Nearly 59 million US citizens (23%) have some form of CVD,²¹ and CVD—primarily coronary heart disease and stroke—kills nearly as many US citizens as all other diseases combined.²² In 1995, nearly 961,000 deaths were attributable to CVD, representing about 42% of all deaths in the United States. The AHA reports that if all forms of CVD were eliminated, total life expectancy for the population would rise by 9.78 years. In contrast, if all forms of cancer (the second most prevalent cause of death) were eliminated, the life expectancy gain would be 3 years.²³ Despite these impressive statistics, the death rate from CVD has declined dramatically over the past 15 years—by 35% for all cardiovascular disease, 40% for coronary heart disease, and more than 50% for stroke—thanks to strides in CVD research and technology.²² These statistics underscore the central role of CVD in the nation's healthcare system and raise a fundamental question: Are the benefits of CVD research and technological advancements—namely, improved survival—worth their costs?

CVD Costs

The AHA estimated that CVD and stroke cost the United States approximately \$274.2 billion in direct and indirect costs in 1998.²¹ Of the total CVD costs, heart disease accounted for \$175.3 billion, stroke \$43.3 billion, and hypertensive disease \$31.7 billion. Of the total CVD cost, hospital and nursing home services accounted for an estimated 44% (\$119.9 billion), physician and nursing services 9.4% (\$25.9 billion), medications 5% (\$14.8 billion), home health and other medical durable goods 3.8% (\$10.4 billion), and indirect costs (lost productivity resulting from morbidity and mortality) 37.8% (\$103.1 billion).²¹ CVD is the primary cause of disability for an estimated 2.6 million disabled workers and approximately 1.3 million dependents who receive Social Security disability, for an annual cost of \$16 billion.²⁴ These costs are attributable to 3 primary factors: increased CVD-related procedures, therapeutic advances, and inaccurate or overutilized diagnostic tools.

Increased procedures. The number of CVD-related procedures (Figure) has increased dramatically. For instance, 1 of every 400 men in the United States 65 years of age or older had coronary artery bypass surgery in 1980; by 1990, 1 of every 100 US men in this age group received coronary artery

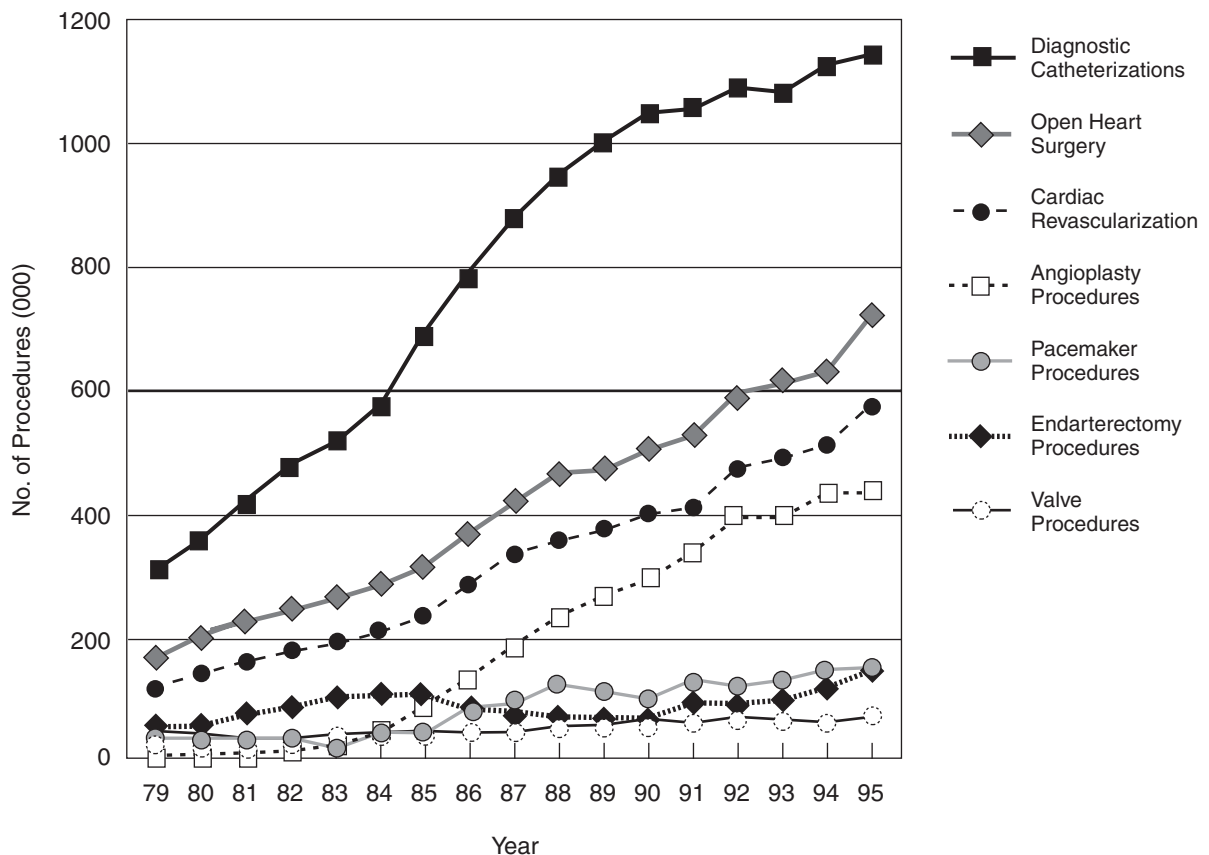
bypass surgery.²¹ This increase is due to refined surgical technique, improved surgical skill, and greater surgical experience—all factors that have expanded the applicability of the procedures to older and sicker patients. Further, recent studies demonstrate that a large proportion of CVD patients show improved survival or a quality-of-life benefit with revascularization.^{25,26}

Despite these study results, overutilization of these procedures is a concern. A large-scale review of patient charts²⁷ concluded that 14% of bypasses were clearly unnecessary and an additional 30% were questionable. Another meta-analysis²⁵ concluded that about 10% of CVD-related surgeries are unnecessary. An additional evaluation of all revascularization procedures performed in California (angioplasty or coronary bypass surgery) revealed that these procedures were performed twice as fre-

quently on fee-for-service patients than on health maintenance organization (HMO) patients.²⁸

Therapeutic advances. The impact of technology on medical costs is clearly evidenced by the changing approach to the treatment of the acute myocardial infarction. In the 1980s, thrombolytic therapy was demonstrated to produce a dramatic reduction in morbidity and mortality following an acute myocardial infarction.^{29,30} More recently, a debate has raged over the relative efficacy and cost of 2 thrombolytic agents, streptokinase (costing \$200-230 per patient) and rt-PA (costing \$2000-2300).³¹ An analysis of The Global Use of Strategies to Open Occluded Coronary Arteries data demonstrated that substitution of accelerated t-PA for streptokinase in the treatment of an acute myocardial infarction costs \$32,678 per year of life saved.³² Currently, there is no universally acceptable cost per year of life

Figure. Inpatient Cardiovascular Procedures, 1979-1995^{21,22}



saved, although hemodialysis for chronic renal failure, a therapy universally considered worthwhile and often used as a benchmark, costs approximately \$35,000 per year of life saved.

Nevertheless, the cost of a drug or procedure cannot be solely measured by the years of life saved. Reduced hospital stays or readmissions attributed to a therapy can offset the initial cost of the therapy. The cost for quality-adjusted life-years model, which follows a cohort of patients through states of health and illness and includes other medication costs and hospital costs, attempts to consider these factors. Such a model established that the cost effectiveness of captopril therapy for survivors of a myocardial infarction with a low ejection fraction compared favorably with other postinfarction interventions.³³

Consideration of these other factors will be especially important as we weigh the costs of lipid-lowering therapy to prevent cardiovascular events. The West of Scotland study³⁴ demonstrated a 30% reduction in the risk of fatal and nonfatal coronary events in middle-aged men with moderate hypercholesterolemia treated with HMG Co-A reductase inhibitors for primary prevention. The cost of using an HMG Co-A reductase inhibitor in secondary prevention of coronary disease is approximately \$17,800 per year of life saved.

Diagnostic tools. The cost of CVD diagnostic tests includes not only the direct cost of the test but the indirect costs of management decisions resulting from the test results. The cost of false-positive results leading to additional unnecessary tests, as well as the cost of false-negative results leading to inadequate treatment and subsequent complications, must be considered. Application of such a global cost model to exercise electrocardiogram, stress single photon emission computed tomography, positron emission tomography (PET), and coronary angiography revealed that stress PET was most cost effective in patients with a low probability of disease but that coronary angiography was more cost effective in patients with a high probability of disease.³⁵

...OUTLOOK...

Growing concern about these socioeconomic issues has resulted in considerable debate about public healthcare policy and accelerated many current trends in the healthcare market. Major trends now under way include: increased growth in the number of managed care arrangements; physician payment reform; continued provider integration;

state and private initiatives for financing, delivery, and payment reforms; development of clinical guidelines and extension of evidence-based guidelines; growing surplus of physicians; and growth in pharmaceuticals and new technologies. In the second part of this paper, we will review these trends and their implications for the healthcare industry, managed care, and CVD treatment in particular.

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