

Healthcare Costs: The Engine Driving the Decline in Insurance

Sandra B. Greene, DrPH

The increase in the percent of the population that is uninsured in both North Carolina¹ and across the nation² is driven by the increasing costs of health insurance premiums. Nationally, health insurance premiums increased 65% between 2000 and 2004. This rise was more than six times greater than general inflation (9.7%), and more than five times the wage growth (12.2%).³ The increase in premiums makes it harder for employers to offer insurance to employees and for individuals to purchase healthcare coverage. Research indicates that for every 10% increase in health insurance premiums, the number of firms that offer health insurance to their employees falls by roughly 2.5%.⁴

Most of the increase in health insurance premiums is due to the increase in the underlying costs of healthcare.^{5,6,7,8} Healthcare costs increase for a variety of reasons, some due to the increased cost of individual services, some due to greater utilization of services, and some due to changes in overall disease prevalence. This commentary examines trends in personal healthcare spending in North Carolina between 1990 and 2000, changes in unit costs and utilization of different services, and the effects of changes in disease prevalence and demographic changes on healthcare spending. The commentary concludes with how these changes impact health insurance premiums and

how employers and individuals respond to rising premium costs.

Total Personal Healthcare Spending in North Carolina (1990-2000)

Data from the Office of the Actuary of the federal Centers for Medicare and Medicaid Services show that North Carolinians spent \$31.3 billion dollars on personal healthcare expenses in 2000.⁹ Table 1 shows how the dollars were spent and the increases in expenditures by service type between 1990 and 2000 (the most recent data available).

In 2000, more than one third of personal health spending in

Table 1.
Per Capita Personal Healthcare Expenditures, North Carolina, 1990, 2000

Healthcare Services or Products	1990	1990 % of total	2000	2000 % of total	% Increase 1990-2000
Hospital Care	\$5,905	42.8%	\$12,060	38.6%	104.2%
Physician and Other Professional Services	\$3,748	27.2%	\$8,025	25.7%	114.1%
Dental Services	\$662	4.8%	\$1,508	4.8%	127.8%
Home Healthcare	\$288	2.1%	\$1,150	3.7%	299.3%
Prescription Drugs	\$1,110	8.0%	\$3,882	12.4%	249.7%
Other Non-Durable Medical Products (e.g., diabetes test strips)	\$546	4.0%	\$679	2.2%	24.4%
Durable Medical Products (e.g., wheelchairs or walkers)	\$215	1.6%	\$477	1.5%	121.9%
Nursing Home Care	\$1,115	8.1%	\$2,524	8.1%	126.4%
Other Personal Healthcare	\$208	1.5%	\$979	3.1%	370.7%
<i>Total</i>	<i>\$13,797</i>	<i>100.0%</i>	<i>\$31,284</i>	<i>100.0%</i>	<i>126.7%</i>

Figures are in millions

Source: Centers for Medicare & Medicaid Services, Office of the Actuary, National Health Statistics Group. North Carolina Personal Health Care Expenditures (PHCE), All Payers 1980-2000.

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North Carolina was spent on hospital care (39%), and approximately one quarter (26%) on physicians and other professional services.⁹ These expenditure rates are similar to those at the national level (36% and 29%, respectively) and accounted for more than half of the increase in total expenditures from 1990-2000. Hospital care accounted for 35% of the increase in spending, while physician and other professional services accounted for 25%. However, in recent years, prescription drugs have been one of the fastest growing components of healthcare spending. Prescription drugs accounted for 16% of the increase in overall healthcare spending between 1990 and 2000. As a result, prescription drugs constituted 12% of North Carolina's personal healthcare expenditures in 2000, compared to 8% in 1990.^{a,9} Long-term care (home health and nursing care) also constituted 12% of North Carolina's personal healthcare expenditures in 2000, with spending on home healthcare increasing more than 300% since 1990.^b

Changes in Unit Cost and Utilization of Different Services

Expenditures for healthcare services are a function of two components: price per unit of service and the number of units (amount of services received). Understanding whether the price or use of a service is increasing, or both, can help policymakers determine how to respond to healthcare cost increases. As described in more detail below, an increase in unit costs explains the rising costs of hospital inpatient care, while increased utilization explains the rising costs of hospital outpatient services and technology (particularly imaging). For prescription drugs, there has been both an increase in utilization and unit costs.¹⁰

Previous efforts to curb rising costs of care have focused primarily on price because it is easier to address what something costs than to manage its utilization. Providers contribute to increased utilization, as changes in technology or treatment protocols lead to increased use of certain services or procedures. Defensive medicine—or ordering unnecessary tests or procedures to prevent a potential malpractice claim—also increases utilization. Consumers' demand for services and

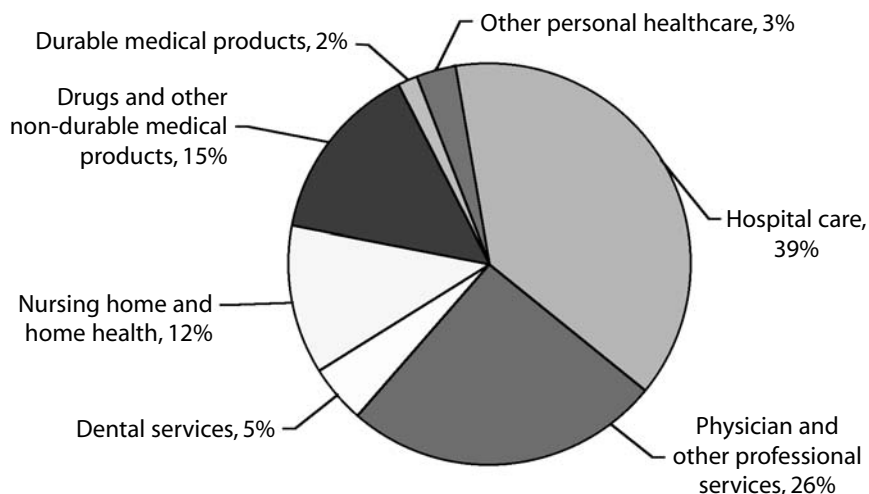
medications also contributes to rising healthcare utilization. Controlling utilization is generally more difficult than trying to control costs because the public often views the former as restrictions on accessing needed healthcare.¹¹ However, recent strategies have designed consumer cost-sharing to influence patient utilization rates. By placing more financial responsibility on consumers, patients may reduce their use of marginally useful or unnecessary healthcare services.^{c,12}

Hospital Care

Between 1990 and 2000, hospital spending increased 104% in North Carolina (see Table 1) and accounted for 35% of total growth in personal healthcare expenditures. Hospital spending includes that spent on both inpatient and outpatient services. More recent national data showed that hospital inpatient spending increased 6.2%, while hospital outpatient spending increased 11.3% between 2003 and 2004.¹³

The increase in hospital services expenditures is due primarily to an increase in unit price, rather than an increase in utilization. Nationally, hospital utilization increased only 2.9% in 2004, but hospital unit costs for inpatient and outpatient services combined increased 7%.¹³ On a population basis, North Carolinians are spending less time as inpatients than a decade ago. In 1989, North Carolina residents' utilization of inpatient hospital services was 752 days per 1,000 persons, compared to

Figure 1.
North Carolina Personal Health Expenditures, 2000



Source: Centers for Medicare & Medicaid Services, Office of the Actuary, National Health Statistics Group. North Carolina Personal Health Care Expenditures (PHCE), All Payers 1980-2000.

- a Prescription drugs, by themselves, constituted 12.4% of personal healthcare expenditures in North Carolina in 2000; non-durable medical products amounted to another 2.2% of the state's personal healthcare expenditures.⁹
- b Long-term care expenditures, unlike most other healthcare expenses, are highly dependent on the payer. Public insurance programs, such as Medicare and Medicaid, account for a substantial portion of total spending on long-term care.
- c The most notable work in this area stems from the RAND Health Insurance Experiment conducted in the late 1970s. Utilization was lower in plans that had greater cost sharing, but there was mixed evidence on whether the healthcare services were necessary. Health status for most people was unaffected by their reduced services, but for the sick and poor, health was adversely affected.

only 542 days per 1,000 in 2003.¹⁴ The most dramatic decline in utilization occurred among the elderly population.

By contrast, the cost per day spent in the hospital or per admission is escalating because there are more services, treatments, and procedures provided to patients once they enter the hospital. In addition, as more non-emergent healthcare needs can be treated on an outpatient basis, inpatient utilization for those services decreases, and the more intensive, higher-cost services account for a greater proportion of inpatient services, which raises costs. Further, hospital labor costs for nursing and other healthcare professionals have increased.^{15,16}

Costs for hospital outpatient care are also increasing as the result of both higher utilization and greater unit price.¹³ This increase is a reflection of more services and procedures, such as biopsies, surgeries, and chemotherapy, which are now safe and acceptable when performed on an outpatient basis. In the past, some of these services would have been performed solely on an inpatient basis. Thus, while outpatient costs have been increasing,

associated with higher utilization and spending on these services.¹⁷ However, the use of these imaging technologies for diagnosis has generally proven to be additive, rather than substitutive. A clinician may first order an x-ray or CT scan and then order another imaging technology, such as an MRI, to confirm or further investigate a suspected malady.¹⁷ Therefore, while a diagnosis may be more accurate, the costs associated with determining that diagnosis are increasing.¹⁸ The latest imaging technology, PET, uses radioactive substances to examine body functions, and it is increasingly used in screening for cancer and heart disease despite professional disagreement over some specific uses of this scanning technique. Between 1970 and 1985, North Carolina had only three PET scanners in the state, located at the largest hospitals. However, since 1985, 19 more PET scanners have been approved, and now all teaching hospitals have at least one PET scanner, and moderate size hospitals are applying for their use. This pattern of diffusion is typical for a new technology and will result in rising costs because of the wider availability of the scanners.

“Previous efforts to curb rising costs of care have focused primarily on price because it is easier to address what something costs than to manage its utilization.”

some of this increase in utilization helped offset the use of more expensive inpatient services. However, there is not a direct one-for-one correlation between increased use of outpatient services and a decrease in inpatient utilization. Further, unit costs for outpatient care are not as well controlled as costs for inpatient care, where the use of diagnosis related groups (DRGs) or similar prospective payment methods limit charges per admission.^d

Technology

Greater availability and use of technology are also significant healthcare cost drivers.¹⁷ Radiographic imaging has been one of the most significant technological advances in medical care. X-rays, introduced in 1895, were the first form of imaging. Newer forms of imaging emerging in the late 20th century included computed tomography (CT), magnetic resonance imaging (MRI), and positron emission tomography (PET). The current (2004) cost of a CT scan is more than \$1,200, an MRI is generally just under \$2,000, and a PET scan costs approximately \$2,300.⁹

The availability of freestanding MRI and CT technology is

Prescription Drugs

The rising cost of prescription drugs is also a major contributor to increasing healthcare costs. In North Carolina, expenditures for prescription drugs increased 250% between 1990 and 2000 (see Table 1). More recent national data show that prescription drug expenditures increased 47% between 2000 and 2003.¹⁹ Both public and private insurance programs have experienced double digit annual increases in prescription expenses.²⁰

This increase is due both to rising cost per prescription and an increased number of prescriptions filled.¹³

The rising costs of medications may be explained, at least in part, by the introduction of new medications into the market. The National Institute for Health Care Management (NIHCM) conducted a study of 1,035 new drug applications to the Food and Drug Administration between 1989 and 2000 and found that only 35% contained new active ingredients, while the remainder contained currently available active ingredients.²¹ Furthermore, only 24% of the drugs offered clinical improvement. Of all the new drug applications, only 15% were both highly innovative and offered significant clinical improvement. In addition, of the \$67.4 billion increase in spending on prescription drugs between 1995 and 2000, only 33% of the expenditures were spent on the pharmaceuticals that offered clinical improvements. This raises questions about the cost effectiveness of the increased spending on pharmaceuticals.

A significant factor in the high utilization of new prescription drugs is direct-to-consumer (DTC) advertising.²² DTC advertising is a successful marketing tool. Drugs that are heavily advertised experience a significant increase in their use.²³ Yet, there are a

d Diagnosis related groups (DRGs) is a hospital payment system used by Medicare and many third-party insurers. It prospectively sets the hospital payment based on the patient's primary and secondary diagnosis, surgical procedures, age, sex, and the presence of complications.

number of concerns about such advertising techniques. Advertisements generally contain limited information about side effects and promote expensive brand name drugs over generics. Patients who see these ads may exert pressure on their physicians to prescribe drugs they have seen advertised, and this may lead to use of higher-cost drugs, rather than generic versions. In some cases, this could lead to inappropriate clinical use.

Malpractice

Rising malpractice premiums have been noted as a problem for some physicians in particular specialties and geographic areas. It may also negatively affect patients living in areas where physicians are no longer practicing presumably as a result of high premiums. Malpractice also contributes to rising healthcare costs because it leads to defensive medicine. Physicians may order unnecessary tests or procedures or avoid some high-risk patients, out of fear of potential malpractice liability.²⁴ While it is difficult to fully quantify the costs of defensive medicine, several recent studies suggest that malpractice costs and malpractice insurance premiums are not primary contributors to the rising costs of healthcare. One study reported that only 7% of the annual increase in healthcare costs can be attributed to litigation and risk management,²⁵ while another showed that malpractice costs account for a very small proportion of healthcare premium costs.²⁶

Changes in Disease Prevalence and North Carolina Demographics

Changes in the prevalence of certain health problems underlie some of the increased use of health services and, consequently, relate to a portion of the increase in national healthcare spending. Healthcare spending is concentrated in a relatively small number of health problems. For example, almost one third of the change in healthcare spending between 1987 and 2000 was attributable to the treatment of five major health problems: heart disease, mental disorders, pulmonary disorders, cancer, and trauma.²⁹ Approximately half of the increase in health spending was attributable to 15 conditions.

For four conditions, cerebrovascular disease, mental disorders, pulmonary conditions, and diabetes, increased spending was due primarily to an increase in treated prevalence or number of cases.^e In contrast, the increased cost per treated case was the primary factor underlying greater spending on trauma, pneumonia, infectious diseases, and heart disease. Overall population growth generally accounted for only 20-30% of the changes in healthcare spending for any specific condition.

Certain lifestyles choices and lifestyle-related illnesses contribute to many healthcare problems. Smoking, heavy drinking, and obesity^f can lead to chronic health problems and, as a

result, increased healthcare costs.²⁷ The growing epidemic of obesity is a major contributor to rising healthcare costs. Obese people have a higher risk of developing certain health problems, such as diabetes, hypertension, and heart disease. According to 2001 figures, 24% of the United States population is obese, an increase of ten percentage points since 1987.²⁸ The increased prevalence in obesity alone accounted for 12% of the real per capita spending growth between 1987 and 2001. Sturm analyzed self-reported health risk data from a national household survey and compared this to reported inpatient, outpatient, and prescription drug utilization. He found that obesity increased healthcare and medication costs by 36% and 77%, respectively, compared to someone with a normal weight.

Obesity has a much greater effect on the prevalence of chronic conditions than current or past smoking and problem drinking. However, current or past smoking also increased healthcare service costs 21% and medication costs 28-30%, depending on whether the individual was a current or past smoker. Compared to obesity, which increased absolute inpatient and ambulatory care costs by \$395 per year, current or ever smoking was associated with a \$230 increase, and problem drinking was associated with a \$150 increase.²⁹

North Carolinians, like Americans in general, are much more likely to be obese than they were even 15 years ago. In 1990, 12.9% of adult North Carolinians were clinically obese; in 2002, nearly one quarter (23.5%) were obese (see Figure 2). This trend in population health, although not a major contributor to the increase in healthcare costs, is generally appreciated by society. Although conventional wisdom holds that the increase in the proportion of the population that is overweight and obese is a major driver of cost trends, other factors outlined above, such as increasing use of technology, are more important.

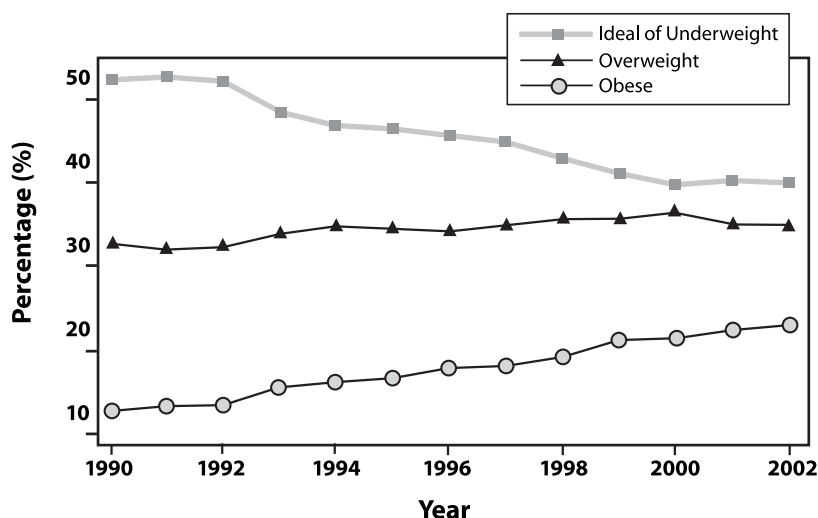
A recent study found that many obese individuals do not realize they are obese.²⁹ Over 70% of normal weight individuals accurately identified themselves as such, but roughly 15% of obese people knew they were obese. All groups reported their height and weight equally well. This finding suggests that there is a need to increase awareness in the population of what a normal weight is.

It is a common misconception that our aging population is a major factor in explaining increases in healthcare costs. Adults over the age of 65 years do spend more per capita on healthcare than younger individuals. Therefore, as the overall population ages, healthcare spending also increases. However, the aging of the overall population is modest from one year to the next, so while it may have a long-term impact on costs, it does not significantly contribute to spending increases from year to year.

e Depending on the condition, the increase in treated prevalence can be due to an increase in epidemiological prevalence of the condition (e.g., diabetes) or to the rate of treatment for a particular condition (e.g., mental health).

f In July of 2004, the United States Department of Health and Human Services announced its Medicare coverage policy would treat obesity as an illness. Obesity is defined as having a body mass index (BMI, calculated as weight in kilograms divided by height in meters squared) that is 30 or more.

Figure 2.
Weight Status of North Carolina Adults, 1990-2002



Source: Behavioral Risk Factor Surveillance System, Centers for Disease Control

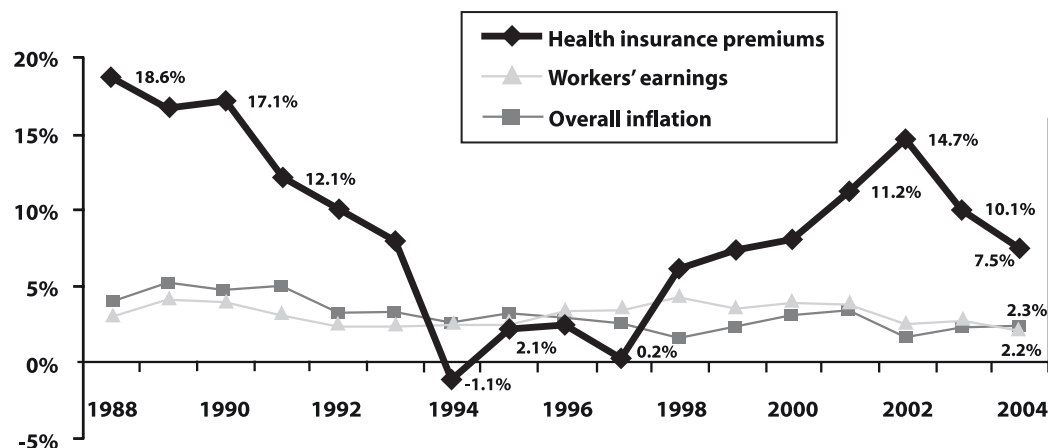
Rising Health Insurance Premiums and Employer Response

One of the most closely watched measures of changing healthcare costs is the national Mercer/Foster Higgins survey of health benefit costs among public and private employers. This survey represents 600,000 employers with at least ten employees

to employees through increased out-of-pocket expenses, such as deductibles and copays. Figure 3 does not reflect the total increase in healthcare costs because it does not include out-of-pocket expenses.

A 2005 survey of employers by the Kaiser Family Foundation and Health Research and Education Trust indicates that many believe shifting costs to the employee is an effective

Figure 3.
Changes in Health Insurance Premiums, Inflation, and Workers Earnings, 1988-2004

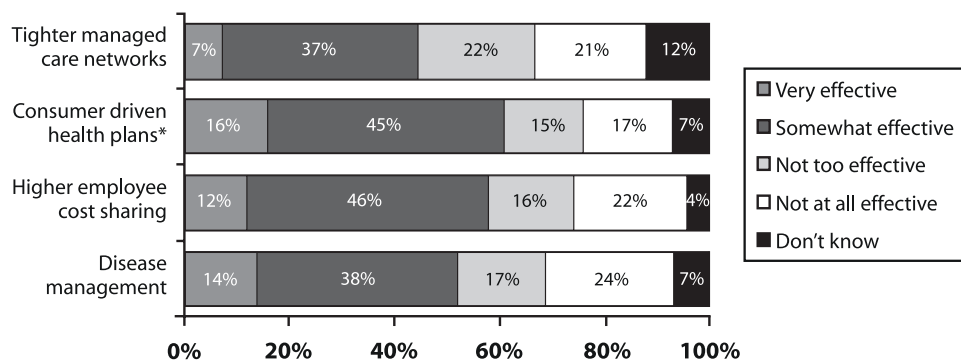


Source: Mercer/Foster Higgins National Survey. (1988-2004). Wage data from: United States Department of Labor. Bureau of Labor Statistics. Average Hourly Earnings of Production Workers, Seasonally Adjusted. April data 2000-2004. General inflation data from: United States Department of Labor. Bureau of Labor Statistics. Consumer Price Index. All Urban Consumers. Not Seasonally Adjusted. April data 2000-2004.

way to control rising health insurance premiums (see Figure 4). This may be because employers feel they have run out of other viable options. But there could be unfortunate implications for their employees. Past studies suggest that higher out-of-pocket costs do deter utilization, and that individuals are equally likely to forgo necessary care as well as unnecessary care.³⁰ This is a

g Another national survey conducted by the Kaiser Family Foundation (Kaiser) and Health Research and Education Trust (HRET) results in somewhat different estimates of premium increases. For example, in 2004, the Kaiser/HRET study showed an 11.2% increase from 2003. This study includes employers with three or more employees. The Mercer Foster Higgins study also includes public programs. These differences in study design help explain the different estimates of premium increases.

Figure 4.
Employers Opinions on the Effectiveness of Different Cost Containment Strategies



Source: Kaiser Family Foundation and Health Research and Education Trust. Employer Health Benefits 2005 Annual Survey, Exhibit 12.5.

*Consumer Driven Health Plans include high-deductible plans with a personal or health savings account.

particularly significant problem for low-income people, who are more likely to forgo necessary care and suffer adverse health outcomes as a result.

Employers are also trying to control rising healthcare costs by managing high-cost claims. A small percentage of the population accounts for the majority of spending on healthcare. In 1996, approximately 5% of the population accounted for 55% of total spending, and 30% of the population accounted for 90% of total healthcare spending. This trend has been consistent over time.

People with chronic conditions are included in the high-cost groups and many employers are trying to manage the high costs of chronic conditions through disease management (DM) programs. More than four fifths of covered workers (81%) are enrolled in plans that use case managers to coordinate the care of persons with high-cost conditions. More than half (56%) of all workers with employer-sponsored health insurance are in a plan with at least one disease management program. Of those covered by disease management programs, most workers are covered by programs that manage diabetes (99%), asthma (86%), hypertension (82%), and high cholesterol (66%).³¹ Fifty-two percent of employers surveyed in 2005 indicated that disease management was a very or somewhat effective strategy to control rising healthcare costs,³² although a review of studies examining the return on investment of disease management programs shows mixed results.^{h,33} Given the frequent use of disease management programs in employer-sponsored insurance programs, there is a need for more evaluation of their effectiveness to understand where investments of this kind will pay off.

The Elusive Fix

It is not surprising that employers continue to struggle, with little success, in controlling the increases in their healthcare premiums. The healthcare system—the way it is structured, managed, and reimbursed—is complex. Solutions will be equally complex and can't be unilaterally imposed by any single segment of the healthcare system. Some critics say the problem is that patients and providers alike are too insulated from the costs of goods and services and suggest that plans that more

closely align consumer/patient and insurer interests (such as Consumer Directed Health Plansⁱ) would increase consumer awareness. Others call for more (or less) competition in the healthcare system to control costs. And others put the blame on lifestyles, and call on all of us to take better care of ourselves to reduce illness and healthcare use. While there may be some truth to all of these observations, our problems are more complex than these convey. It is true we have little competition in the provision of healthcare services, but competition rarely works in healthcare as it does in other sectors of the economy. Two high-cost open heart surgery programs in one community do not result in price competition. And arming patients with price information rarely is useful except for elective care, and then only when assuming there is a choice of providers. Patients usually go where their trusted physician directs them. Once a patient is sick and enters the healthcare system, tests and procedures are ordered *for* them, and there is little a patient can do to control the costs associated with their care. The American healthcare system tends to defer to the professional judgment of the physician as to what tests, procedures, and treatments are necessary to ensure the well-being of the patient. Healthier lifestyles are a laudable goal and should be a focus for employers and employees alike. Yet, the healthiest among us will most likely experience health problems at some point through no fault of their own. And once in the healthcare system, the costs are so great that most individuals need some form of assistance in the form of health insurance to afford their care.

Unfortunately, redesigning the American healthcare system

- h A recent Cornell-Medstat study concluded the jury is still out on whether disease management programs deliver a return on investment. A review of 44 studies analyzing the economic impact of DM programs found mixed results for those targeting depression, diabetes, and asthma, which are the most common diseases targeted. However, those programs targeting congestive heart failure and multiple chronic conditions were more likely to be successful.
- i The premise of Consumer Directed Health Plans (CDHP) is that there is costly, unnecessary use of healthcare services, and by transferring more responsibility for accessing and paying for care to the individual, cost-effective decisions will be made. CDHPs take multiple forms, and may include high-deductible plans, healthcare spending accounts, and tiered benefit plans.

to resolve these problems is an unrealistic goal. In the early 1990s, the American public soundly rejected the Clinton Plan to overhaul the system. And as the HMO backlash of the late 1990s taught us, Americans have been loathe to accept aggressive utilization review that would eliminate marginally beneficial healthcare services, so addressing the “demand” side of the equation is not likely to be fruitful. An alternative method of limiting the use of expensive healthcare services is to limit the supply of expensive technology. In North Carolina we do this to some extent with the Certificate of Need (CON) program. This is not without controversy and often leads to adversarial

relationships as healthcare institutions and physicians disagree on whether a service in a particular community is warranted. As a society, we tend to question the use of expensive technology in the abstract. But most of us would have little difficulty advocating for the service when a loved one has even a small probability of benefiting from an expensive procedure. This disconnect between what is in *society's* and the *individual's* best interest is at the heart of the dilemma. Consequently, our attempts to fix the healthcare system will be limited to modest tampering around the edges of this monstrous system, and from modest reforms, we can only expect minimal improvements. **NCMedJ**

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