

# Muse & Associates



# **E**XECUTIVE SUMMARY

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This report presents findings from an examination of the role of group purchasing organizations (GPOs) in the health care industry in the United States. Organized group purchasing in American health care has existed in some form since at least the early 1900s.<sup>1</sup> However, while group purchasing has been around for a considerable length of time, there has never been a definitive analysis of the contribution of GPOs to the U.S. health care system. To assess the role of GPOs, especially the savings that GPOs produce for the U.S. health care system, the Health Industry Group Purchasing Association (HIGPA) commissioned Muse & Associates to conduct an examination of the GPO industry. The study included the following objectives:

- Estimate the dollar savings to the U.S. health care system that GPOs generate through their purchasing practices;
- Identify other savings “of value” to providers; and
- Examine future trends in GPO savings, including the potential impact of the Internet.

The study began with analyses of general economic trends and the health care sector in order to construct a baseline against which to measure GPO savings. These baseline data are summarized in this Executive Summary and detailed in Appendix A. Next, we surveyed providers in depth to gather data on GPO purchasing, other savings, and Internet utilization. Data from both of these activities were used to estimate GPO savings. The study concludes with a discussion of some of the major issues still to be addressed.

## **The Overall Role of GPOs**

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### **How much do GPOs save hospitals, nursing homes, and others portions of the U.S. health care system?**

Providers report that GPOs save them between 10-15 percent on their purchases. This translates into approximately \$15-\$22 billion in overall savings to the health care system in 1999, which included \$1,190 billion in spending on health services and supplies. A number of the surveyed providers based their estimates of savings on detailed analyses by their staffs. This estimate is

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<sup>1</sup>HIGPA, 1999 HIGPA International EXPO, Palm Desert, CA, October 20-22, 1999.

also consistent with industry experts and other economic analyses performed by Muse & Associates.

### **Are there additional potential savings that GPOs might contribute to the Health Care Sector?**

Responses to our survey indicate that hospitals channel approximately 72 percent of non-labor expenditures through GPOs. The 72 percent figure leads to an estimate that hospitals could make an additional \$38 billion in purchases through GPOs in 2000, at a potential additional savings of \$3-\$6 billion to the health care system.

### **Are there other benefits GPOs provide to hospitals, nursing homes, and others?**

In addition to lower purchasing costs, survey respondents reported that GPOs:

- Save significant amounts of provider staff time that would have been used in purchasing activities; and
- Provide product information and standardization (i.e., comparison shopping and best combinations of cost and quality for desired products).

## **The Internet**

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### **Has the Internet begun to have an impact as a source of purchases in the GPO marketplace?**

Yes. Approximately one-third of hospitals report making purchases through the Internet. Internet users also report that they make 5 percent of their purchases (about \$3 billion) in this manner, with medical/surgical supplies, office equipment, and specialty items being the largest categories they obtain on-line. Another one-third of hospitals report that they hope to begin using the Internet to purchase medical commodities and other supplies in the near future.

## **The Health Care Sector**

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### **How large is the health care sector of the economy?**

In 1997, the most recent year for which actual data are available, national health expenditures represented 13.5 percent, or \$1.1 trillion, of the \$8.1 trillion U.S. economy. National health expenditures exceeded the Gross Domestic Product (GDP) for the agriculture, forestry, and

fishing; mining; transportation and public utilities; wholesale trade; and retail trade sub-sectors of the economy. Only manufacturing and finance, insurance, and real estate had GDPs higher than national health expenditures. Additionally, health services are the biggest component of the service industries sub-sector and a significant component of government expenditures.

### **How has the health care sector been growing historically?**

In 1970 the health care sector totaled \$73.2 billion (7.1 percent of U.S. GDP), rising to \$1,092.4 billion (13.5 percent of GDP) in 1997. In 1999, it was estimated that health care expenditures were \$1,228.5 billion or 13.9 percent of the U.S. economy.

### **How will the health care sector grow over the next ten years?**

National health care expenditures are projected to exceed \$2.3 trillion, or between 16-17 percent of GDP, by 2009. This assumes that current largely optimistic economic projections for the economy as a whole do not change substantially. However, a persistent decline in economic conditions caused by international or Wall Street turmoil has less effect on the growth of the health care sector than on almost all other sectors of the economy. If anything, the health care sector will exceed 17 percent of GDP by 2009.

## **The GPO Marketplace**

### **How large is the GPO marketplace within the health care sector?**

The GPO marketplace is composed primarily of hospitals and nursing homes, which include assisted living facilities. Hospitals and nursing homes represent approximately 41 percent, or \$491.4 billion, of total national expenditures for health services and supplies. Non-labor costs represent 44.6 and 30 percent of hospital and nursing home costs respectively, or \$206 billion dollars of hospital and nursing home expenditures in 1999.

### **What share of the hospital and nursing home marketplace do GPOs currently represent?**

We estimate that between \$148-\$165 billion, or between 72-80 percent of the \$206 billion of non-labor hospital and nursing home expenditures, are currently managed by GPOs.

### **How has the GPO marketplace been growing historically?**

Hospital and nursing home expenditures were \$32.2 billion, 47 percent of national expenditures for health services and supplies, in 1970. Today, they are \$518.1 billion, about 41 percent of such expenditures. This proportion has remained relatively stable since 1990 but should decline slightly to approximately 38 percent (\$856.3 billion) by 2009.

## **In the aggregate, how will the GPO marketplace grow over the next ten years?**

The GPO marketplace will continue to grow faster, an average of 5.7 percent per year, than the overall economy, which is expected to grow between 2 and 2.5 percent per year, and almost as fast as the mid-range estimates for the health care sector which is expected to grow at between 6.0 and 7.1 percent per year. This will lead to a 75 percent increase in the size of the GPO marketplace, from \$148-\$165 billion in 1999 to between \$257 and \$287 billion in 2009. Unfortunately, little data exist to quantify whether the GPO share of the marketplace is increasing.

## **Trends Within the GPO Marketplace**

### **What major aggregate trends can be expected within the GPO marketplace?**

Projections suggest that the ratio of hospital and nursing home expenditures will not change significantly over the next decade. Outpatient hospital and nursing home expenditures are likely to increase at annual rates of growth of 8.3 and 6.0 percent, respectively, while inpatient hospital expenditures will grow at approximately 4.0 percent per year.

### **What changes are expected in the GPO hospital sector?**

Health Care Financing Administration (HCFA) actuaries and others expect that growth in hospital expenditures will keep pace with the overall growth and aging of the American population. The last two decades of declining hospital length of stays has clearly ended. Pharmaceuticals are projected to be an increasing share of hospital expenditures, as pharmaceuticals replace invasive techniques in the treatment of many medical conditions. Pharmaceuticals, currently 12.25 percent of hospital expenditures, could easily increase to over 17 percent. Medical and surgical supplies consumed by hospitals should increase at the overall growth rate for hospital expenditures of 5.7 percent. Thus, in 2009, the size of the GPO hospital marketplace will be between \$222 billion and \$248 billion.

### **What changes are expected in the GPO nursing home sector?**

Reimbursement and other incentives for nursing homes is undergoing fundamental change. Incentives appear to be shifting from care for high acuity patients to low acuity patients. Simultaneously, assisted living arrangements are drawing the coveted private pay patients away from the traditional nursing home. From a GPO's point of view, we project that this will result in a decrease in expenditures to traditional nursing homes that will be more than offset by an increase in sales to assisted living facilities, which will often be owned by the nursing home chains that are currently customers of the GPO industry. As in the hospital sector, we expect

pharmaceutical expenditures will rise from its current 6.6 percent to 9 percent of nursing home non-labor expenditures by 2009. In 2009, we estimate that the size of the GPO nursing home marketplace will be approximately \$35-\$39 billion.

# I NTRODUCTION

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This report presents findings from an examination of the role of group purchasing organizations (GPOs) in the health care industry in the United States. Organized group purchasing in American health care has existed in some form since at least the early 1900s.<sup>1</sup> However, while group purchasing has been around for a considerable length of time, there has never been a definitive analysis of the contribution of GPOs to the U.S. health care system. To assess the role of GPOs, especially the savings that GPOs produce for the U.S. health care system, the Health Industry Group Purchasing Association (HIGPA) commissioned Muse & Associates to conduct a study of the GPO industry. The study included the following objectives:

- Estimate the dollar savings to the U.S. health care system that GPOs their purchasing practices;
- Identify other savings “of value” to providers; and
- Examine future trends in GPO savings, including the potential impact of the Internet.

To accomplish these objectives, three tasks were addressed. These were:

1. Create a baseline (including projections to 2009) on the health care sector of the American economy, against which the role of GPOs can be assessed;
2. Conduct a survey of health care providers to ascertain their purchasing experiences with GPOs; and
3. Determine the cost savings that result from group purchasing.

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<sup>1</sup>HIGPA, 1999 HIGPA International EXPO, Palm Desert, CA, October 20-22, 1999.

The report is divided into five parts. We begin with a discussion of the role that GPOs play in the U.S. health care system. Next we discuss the baseline that was created to describe and project the health care marketplace. In the third section, results from a provider survey that was conducted to examine facility practices and experiences with GPOs are presented. Results of our analyses and general findings are presented in the fourth section. The last section of the report discusses the implications of our findings and future considerations. Appendix A contains a more detailed description of the baseline and health care marketplace trends and projections that were used in the study.

# B BACKGROUND

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Health care in the United States is big business. For all of 1999, national health expenditures are estimated to have totaled \$1.229 trillion, about 14 percent of gross domestic product. This included \$1.190 trillion worth of expenditures for health services and supplies, of which nearly \$1.080 trillion (91 percent) was spent on personal health care. An additional \$38.8 billion was spent on health research and construction.<sup>1</sup>

The health care industry in the United States involves a complex set of relationships among manufacturers, distributors, providers, benefit administrators, payers, and, of course, the ultimate end users, patients. GPOs play an important role and have a significant impact on the U.S. health care system, bringing efficiency and cost savings to the health care industry. By organizing providers into buying groups that command significant market share, they are able to negotiate contracts (and volume discounts) with manufacturers and suppliers that afford their members the best possible products at the most competitive prices. The volume discounts that members receive are attractive to purchasing agents and administrative personnel and help reduce health care costs for providers and the health care system.

GPOs cover virtually everything hospitals, nursing homes, and other health care providers buy, offering discounted prices on supplies and equipment related to almost every aspect of a health care facility (Exhibit 1).<sup>2</sup> They work with vendors and their members to develop fair and progressive contracts and innovative programs to meet the objectives of both. GPOs present opportunities, choice, and flexibility to their members to make their own decisions about which products to obtain while working with suppliers to offer innovative products at acceptable prices. Thus, GPO members are able to obtain the medical commodities they require in a timely manner and at substantial discounts on the prices they are charged, while suppliers receive significant volume and market share that only large purchasing blocs can provide. In their capacity as brokers and facilitators, GPOs walk a fine line, balancing their members' desire for flexibility and freedom to suit their needs with suppliers' desire for standardization and increased market share.<sup>3</sup> For the customer, the value of purchasing through GPOs is that they end up paying less per unit of good. For suppliers, GPOs provide opportunities to increase profits and, thereby, continue with technological innovation.

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<sup>1</sup>HCFA, OACT, National Health Expenditures Projections: 1998-2008, July 1999.

<sup>2</sup>Schlag-Mendenhall, M., In Search of a Cost-Control Cure-All, Sanitary Maintenance, March 1988.

<sup>3</sup>Betz, R., The GPO Balancing Act, Medical Distribution Solutions, Inc., 1998.

## EXHIBIT 1

### MOST WIDELY USED GPO CONTRACTS

\$ Med./Surgical Supplies	\$ Access to Capital
\$ Medical Equipment	\$ Collections
\$ Pharmaceutical	\$ Insurance
\$ Dietary	\$ Allied Prof. Recruitment
\$ Distribution	\$ Telecommunications
\$ Equipment Maintenance	\$ Data Processing
\$ Waste Management	\$ Laundry
\$ Energy/Utilities	\$ Management Consulting
\$ Physician Preference Items	\$ Market Research
\$ Microfilming	\$ Quality Assurance
\$ Strategic Planning	\$ Risk Management
\$ Claims Processing	

According to Richard Norling, CEO of Premier, Inc., GPOs produce substantial savings by removing costs from across the sales and supply chain, not simply by contracting for the

cheapest products.<sup>1</sup> By obtaining best prices on the products that members indicate are most medically appropriate for their use/needs, GPOs have evolved partnerships with both providers and suppliers. Through ongoing consultation with their members, GPOs seek to identify and understand members' objectives. They then work with their trading partners to develop innovative contracts and programs to meet these needs. The overall goal is to achieve savings, not just in terms of the unit costs of individual products but also in total supply chain management, the overall process by which medical commodities are ordered, delivered, inventoried, paid for, used, and disposed of. Through improvements in supply chain management, the efficiency and cost-effectiveness of clinical care processes will also be enhanced, resulting in better clinical outcomes across episodes of care and provider settings and savings to both the health care system and the ultimate consumer, the patient. For some providers, the savings and efficiencies realized through group purchasing are significant to their survival and ability to provide services, especially as payers seek ways to lower their own costs.

The role and contributions of GPOs to the U.S. health care industry, therefore, go beyond unit costs for individual products to a much broader focus on systems and processes.<sup>2</sup> Lower costs result from the broad range of improvements in business processes for sourcing, procuring, receiving, storing, transferring, and consuming health care commodities. These improvements include quality control programs, training and education, information sharing/best practices guidelines (e.g., new models/methods to evaluate drugs, devices, and therapies; appropriate staffing models; superior methods offering greater value; product evaluations, emerging technologies, etc.), and new software systems (electronic infrastructure/connectivity) to streamline business processes and the movement of products. Collectively, they lead to increased efficiency, better use of staff, lower total costs, as well as better clinical outcomes. Thus, the role and contributions of GPOs result in savings to providers, patients, and the entire health care system.

There is no question that GPOs have a significant impact on the marketing and movement of health care commodities in the United States, which can be translated into a reduction of health care costs. While GPOs do have a positive effect on the health care sector, questions do remain as to the size of the impact. The challenge, therefore, is to construct an estimate of the contributions that GPOs make, including costs that providers would incur if there was no group purchasing.

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<sup>1</sup>Norling, R., *Group Purchasing's Relationship to New Technologies Including Safety Devices*, May 1999.

<sup>2</sup>Schlag-Mendenhall, M., March 1988, *op. cit.*

# CREATING THE BASELINE

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To understand the role and contributions of GPOs in U.S. health care, it is first necessary to construct a baseline from which this assessment can take place. Construction of the baseline includes examination of both general economic conditions and trends and, more specifically, those within the health care sector. To construct the baseline, data were compiled from several sources including the Congressional Budget Office (CBO), the Federal Reserve Board (Fed), and the Health Care Financing Administration (HCFA).

We begin this section with a brief discussion of general economic trends and an explanation of the economic model we have used. We then examine projections of private and public sector organizations on the future of the overall economy and the medical sector. Next we discuss two sub-sectors of particular interest to HIGPA and its members: 1) hospitals and 2) nursing homes. More detailed discussions of each of these components may be found in Appendix A.

## General Economic Trends

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The general state of the economy affects all sub-sectors, including health care. Cyclical fluctuations in overall economic conditions should be mirrored in the health care system. Whether the economy is robust and expanding or growth is stagnant, the health care sector is likely to reflect these trends. Likewise, changes in the rate of inflation will also be echoed in health care.

As a new century begins, the U.S. economy is performing rather well. The current expansion has been extended to more than eight years, the longest period of sustained economic growth in U.S. peacetime history. During 1998 and 1999, economic growth remained solid, unemployment was at its lowest level in 30 years, and inflation remained under control. Growth in revenues and restraints on federal spending have resulted in a budget surplus for the first time in 30 years.<sup>1</sup> According to CBO, U.S. gross domestic product (GDP) for all of 1998 was approximately \$8.5 trillion.<sup>2</sup> CBO estimates that U.S. GDP increased to almost \$9.0 trillion in 1999 and will grow to approximately \$9.4 trillion by the end of 2000.

Real economic growth is expected to continue through 1999 and into 2000. Continued strong growth with expectations of higher inflation and a tight labor market, however, has prompted the Fed to adjust the federal funds rate in an effort to slow the expansion and control inflation.

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<sup>1</sup>Federal Reserve Board, Remarks by Vice Chair Alice M. Rivlin at La Conference de Montreal, June 1, 1999.

<sup>2</sup>Congressional Budget Office, The Economic and Budget Outlook: An Update, July 1, 1999.

Current projections for the overall economy in the middle and long term remain more optimistic than they have been in the recent past.<sup>3,4</sup> CBO anticipates average annual growth in the GDP of about 2.4 percent for the period 2001-2009. While this rate is slightly lower than the 1998 and 1999 rates of increase, it is sufficient for the economy to continue to expand into the new millennium. At this rate, the GDP will grow to almost \$13.7 trillion in 2009. Over the period, inflation is expected to average 2.6 percent per year and unemployment will rise to about 5.7 percent. Large federal budget surpluses are also forecast, if current forces and policies do not change.

The Fed is somewhat less optimistic than CBO. In its February 23, 1999 report to Congress, the Fed anticipates more moderate growth. For all of 1999, the Fed forecast that economic growth would slow somewhat,<sup>5</sup> although recent economic reports suggest that the economy is still expanding at a more rapid pace than had been anticipated. Also, the Fed is expecting an increase in inflationary pressures as we complete 1999 and enter 2000.

## **The Health Care Sector**

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In 1997, the most recent year for which complete data are available, national health expenditures (NHE) totaled \$1,092.4 billion, approximately 13.5 percent of GDP.<sup>6</sup> Of this amount, \$1,057.5 billion (97 percent) was spent on health services and supplies and \$34.9 billion on research and construction. Expenditures for personal health care totaled \$969.0 billion, nearly 92 percent of all spending on health services and supplies. During 1997, health care spending increased 4.8 percent. While this was the slowest annual rate of increase since 1960, it was still more than twice as high as the overall rate of inflation. On a per capita basis, spending for health care totaled \$3,925 in 1997, an increase of 3.8 percent per person over 1996.

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<sup>3</sup>Congressional Budget Office, Testimony of June O Neil before the Senate Committee on the Budget, January 29, 1999.

<sup>4</sup>Congressional Budget Office, The Economic and Budget Outlook: Fiscal Years 2000-2009, January 1999.

<sup>5</sup>Federal Reserve Board, Monetary Policy Testimony by Alan Greenspan and Semiannual Report on Monetary Policy to the Congress, February 23, 1999.

<sup>6</sup>Braden et al., National Health Expenditures, 1997, Health Care Financing Review, 20(1):Fall, 1998.

In July 1999, HCFA released new projections for future health care spending.<sup>1</sup> According to HCFA, the NHE were expected to total about \$1,159 billion in 1998, rising to \$1,229 billion in 1999. Annual growth rates were expected to range between 6-7 percent for the period, significantly higher than overall inflation rates. Because the NHE are rising faster than GDP, they will constitute an increasing proportion of GDP (approximately 13.7 percent of GDP in 1998 and 13.9 percent in 1999). For all of 1999, it was anticipated that \$1,189.7 billion would be spent on health services and supplies, with \$1,078.3 billion (91 percent) going for personal health services. Health expenditures per capita were also projected to rise by 5.2 percent, to \$4,340 in 1999.

For 2000, HCFA actuaries project that the NHE will total \$1,361.2 billion, with \$1,275.5 billion (94 percent) spent on health services and supplies and \$1,150.9 billion (90 percent of all spending on health services and supplies) on personal health care. Expenditures are expected to continue to rise through the first decade of the twenty-first century. Using HCFA inflators, we estimate that, in 2009, the NHE will total \$2,319 billion and will reach 16.4 percent of GDP.

How close these estimates and projections will come to reflect reality only time will tell. However, there appears to be growing concern that the relatively low rates of health care inflation that have been experienced over the past several years cannot be sustained indefinitely and that a rise in the rate of health care inflation is inevitable. Results from a recent national survey of health insurers, for example, indicate that health care costs are likely to increase in 2000.<sup>2</sup> These increases are attributed to the convergence of a number of factors including tight federal limits on Medicare and Medicaid spending causing providers to shift costs to private payers, a growing number of state and Federal mandates, more providers passing on the costs of increased regulatory requirements, expensive new medical technology and products (including prescription drugs). However, the relatively slower rate of increase in public sector spending on health care may offset at least a portion of the overall increase.

## **Model of the Health Care Sector**

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The health care sector of the economy can best be understood in terms of trends in population, prices and utilization of health care services. Specifically, health economics textbooks state that changes in total payments for health care are determined by the following equation:

$$\Delta \text{Total payments}^3 = (\Delta \text{Population} \times \Delta \text{Price} \times \Delta \text{Utilization}) + \text{Administration}$$

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<sup>1</sup>HCFA, OACT, National Health Expenditures Projections: 1998-2008, July 1999.

<sup>2</sup>Buck Consultants, The National Health Care Trend Survey, 1999.

<sup>3</sup>  $\Delta$  means "changes in". For example, an increase in the total population should lead to an increase in total program payments.

In its simplest form, the model postulates that changes in population, price, and utilization cause changes in health care expenditures with a small add-on for administration. Future trends in hospitals, nursing homes, and pharmaceutical, and other expenditures are a product of trends in these three factors. The next sections detail the specific subsections of the health care sector that are of interest to HIGPA members.

## **Hospitals**

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Hospitals dominate the health care sector and hospital expenditures comprise the largest single category of health expenditures. In 1997, \$371.1 billion was spent on hospital care. Hospital expenditures accounted for more than one-third (35 percent) of all spending on health care services and supplies in 1997, with community hospitals responsible for nearly ninety percent of the total (Table 3, p. A8).<sup>1</sup> HCFA estimates that expenditures for hospital services reached \$385.9 billion in 1998 and totaled \$401.3 billion in 1999, approximately 34 percent of total spending on health services and supplies in each year.

Hospital expenditures, which increased at a rate of about 2.9 percent in 1997, an all-time low, were expected to grow at about 4 percent in 1998 and 1999. These relatively low rates of increase in hospital expenditures result from a marked deceleration in spending on inpatient services. With few exceptions, most measures of inpatient care including number of beds, number of admissions, and occupancy rates, are declining, continuing a trend that began in the 1980s. During 1997, inpatient revenues still accounted for about two-thirds (\$244 billion) of all community hospital revenue. However, this was down from 87 percent in 1980 and 75 percent in 1991.

Declining use of inpatient services has been offset by continued growth in outpatient hospital services, including a 10.3 percent increase in 1997, the most recent year for which complete data are available. The number of outpatient visits, for example, rose almost 30 percent between 1992 and 1997, from 349 million to more than 450 million visits.

Hospital expenditures are expected to reach \$424.0 billion in 2000 (Table 5, p. A11), including \$266.0 billion (63 percent) for inpatient services and \$158.0 billion (37 percent) for outpatient hospital care. By 2009, it is projected that hospital care expenditures will total \$695.8 billion. Of this amount, approximately \$373.9 billion (54 percent) will go towards inpatient care and an additional \$321.9 billion (46 percent) will be spent on outpatient services.<sup>2</sup>

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<sup>1</sup>Braden et al., 1998 op. cit.

<sup>2</sup>HCFA, OACT, July 1999, op. cit.

Hospitals will react to changes in the health care marketplace through a variety of adaptive behaviors designed to help them remain financially viable, improve their competitive position, enhance their negotiating position with payers, and increase their ability to assume risk, control market share, and generate increased revenue. Thus, the U.S. health care system could experience increased merger and joint-venture activity, increased specialization in profitable lines of service, and continued diversification, including expansion into post-acute care (i.e., skilled nursing facilities (SNFs) and home health care).<sup>1</sup> As a result, GPOs may be expected to encounter fewer, but larger, more vertically and horizontally integrated providers who control a bigger share of the health care market than was previously the case.

## **Nursing Homes**

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The nursing home industry is another major component of the health sector and a significant marketplace for GPOs. The most recent national survey of nursing homes was conducted in 1995.<sup>2</sup> Results from the National Nursing Home Survey (NNHS) indicate that approximately 16,700 facilities nationwide provided care to about 1.5 million residents (mostly elderly, white females) during 1995.

In 1997, spending on nursing home care totaled \$93.2 billion, 9.6 percent of all spending on personal health care. In freestanding nursing facilities, expenditures were \$82.8 billion, nearly 90 percent of the total. Hospital-based facilities accounted for an additional \$10.4 billion (11 percent of total expenditures for nursing home care). For all of 1998, it is estimated that 98.3 billion was spent on nursing home care (\$86.4 billion (88 percent) in freestanding facilities and \$11.9 billion (12 percent) in hospital-based SNFs), an increase of about 5.5 percent over 1997. Nursing home expenditures are projected to rise to \$103.8 billion in 1999 and include \$90.1 billion (87 percent of all SNF spending) in expenditures in freestanding nursing homes and \$13.7 billion (13 percent of SNF spending) in hospital-based SNFs. Between 2000 and 2009, HCFA projects that expenditures for freestanding nursing home care will grow from \$94.1 billion to \$160.5 billion, an increase of more than 70 percent.<sup>3</sup>

Nursing home care is expensive. On average, the annual cost of nursing home care exceeds \$40,000 per year. Additionally, the nursing home industry is changing. Consolidation, integration, and the introduction of new payment systems, such as the prospective payment system implemented for Medicare, will provide both opportunities as well as challenges for GPOs and their members.

## **Other Provider Groups**

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Health care delivery has undergone many changes in recent years. GPO customers now include a broad scope of health care providers and settings (i.e., hospitals, nursing homes, hospices, ambulatory surgery centers, clinics, continuous care/assisted living facilities, etc.).

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<sup>1</sup>Deloitte Touche, U.S. Hospital and the Future of Health Care, 1998.

<sup>2</sup>Strahan, G. An Overview of Nursing Homes and Their Current Residents: Data from the 1995 National Nursing Home Survey, NCHS, Advance Data Number 280, January 23, 1997.

<sup>3</sup>HCFA, OACT, July 1999, op. cit.

Unfortunately, for settings other than hospitals and nursing homes, there is little hard data to examine the potential GPO marketplace for these other types of providers. However, as the population ages, as the focus shifts to episodes of care, as the shift to community-based services continues to grow, and as efforts to maintain independent, community-based living expand, the market for goods and services is likely to shift somewhat from traditional institutional settings, providing new growth opportunities for GPOs. While these segments of the GPO marketplace are currently relatively small, they will likely increase in importance in the future. As more data become available, it will be possible to calculate the impact of GPOs in these emerging markets.

# SURVEY

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Despite the major impact that GPOs have on the health care sector, estimates of the size of the GPO marketplace are difficult to calculate. There is very little published data on the GPO industry, especially hard data on the actual contributions GPOs make or the magnitude of the savings they generate. Much of the information that is available is either self-reported, anecdotal, or incomplete. In order to obtain more accurate primary data on purchasing practices and the role of GPOs, and to fill in some of the information gaps, it was decided that a short provider survey needed to be conducted. The survey involved calling twenty-seven hospitals in the Washington, D.C. metropolitan area plus a random sample of hospitals throughout the rest of the United States. Using a formal survey protocol, we collected information on hospitals' use of and purchases through GPOs and others. A total of 221 hospitals were contacted.

The initial contact with each facility was through the chief financial officer or chief executive officer. After a brief introduction, we were referred to the most appropriate staff person, usually in the accounting or purchasing department, to conduct an interview. In most cases, we began the interview with someone in the accounting department and then, after just a few questions, were directed to and completed the interview with the purchasing manager. Seventy-two percent of respondents were independent facilities and 28 percent were affiliated with hospital chains. Every facility that responded reported that they are members of at least one GPO.

# FINDINGS

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Information obtained through the survey was applied to the baseline. First, estimates of the non-labor components of hospital and nursing home expenditures were calculated. The next task was to estimate total expenditures for pharmaceuticals and medical/surgical equipment and supplies in both hospitals and freestanding nursing facilities. We then estimated the size of the potential GPO marketplace, calculated savings resulting from GPO practices, and identified other advantages and disadvantages of group purchasing.

## **Non-Labor Expenditures**

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To estimate the value and importance of GPOs, it was first necessary to disaggregate hospital expenditures into personnel and non-labor components. To accomplish this, facilities were queried about the proportion of their total expenditures that were non-labor. Respondents reported that, on average, 44.6 percent of their total expenditures are non-labor. The survey results confirm and validate data on hospital personnel expenditures compiled from the 1998 annual survey of hospitals conducted by the American Hospital Association.<sup>1</sup> After determining the proportion of total expenditures for personnel, it was possible to calculate non-labor expenditures. For hospitals, total non-labor expenditures were approximately \$172.1 billion in 1998 and \$179.0 billion in 1999. For 2000, it is estimated that hospital non-labor expenditures will total \$189.1 billion, increasing to \$310.3 billion in 2009.

Nursing facilities are more labor intensive than hospitals. Thus, a higher proportion of a nursing home's expenditures will go towards personnel costs. Assuming a non-labor proportion of 30 percent, total expenditures for materials, supplies, food, etc. in freestanding nursing facilities<sup>2</sup> were \$25.9 billion in 1998 and \$27.0 billion for all of 1999. For 2000, we estimate that non-labor expenditures in freestanding nursing facilities will total \$28.2 billion. Projecting forward, non-labor expenditures in freestanding nursing facilities will reach \$48.2 billion in 2009.

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<sup>1</sup>American Hospital Association, Hospital Statistics, 1999 Edition.

<sup>2</sup>Data for hospital-based nursing facilities are included in the hospital data.

## **Pharmaceutical Expenditures**

Having determined the magnitude of non-labor expenditures in both hospitals and nursing facilities, the next step was to estimate the amount of spending for pharmaceuticals and medical/surgical equipment and supplies. We begin by focusing on pharmaceuticals. In the next section, we examine medical/surgical equipment and supplies (see below).

Participants in the survey were questioned about the proportion of their non-personnel expenditures that were spent on pharmaceuticals. Survey results indicate that pharmaceutical expenditures in hospitals averaged 12.25 percent of all non-labor expenditures in 1999. Therefore, for 1999, it is estimated that a total of \$21.9 billion was spent for pharmaceuticals in hospital settings. After factoring in inflation, we estimate that annual hospital expenditures for pharmaceuticals will total \$25.1 billion, 13.25 percent of all non-labor expenditures, for all of 2000 and will increase to \$53.5 billion (17.25 percent of non-labor expenditures) in 2009.

Pharmaceutical expenditures in freestanding nursing facilities are expected to be a smaller proportion of non-labor expenditures than in hospitals. Based on discussions with industry representatives and our own knowledge and experience, we assume that pharmaceutical expenditures in freestanding nursing facilities are about 6.6 percent of total non-labor expenditures in 1999 and 2000. As a result of inflation, we also expect that this percentage will increase over the next decade, to about 9.0 percent of non-labor expenditures by 2009. Applying these proportions to the baseline, pharmaceutical expenditures in freestanding nursing homes are estimated at \$1.8 billion in 1999 and \$1.9 billion for 2000, increasing to \$4.3 billion in 2009.

When combined, pharmaceutical expenditures in hospitals and freestanding nursing facilities are estimated to have totaled \$23.7 billion in 1999. It is expected that such expenditures will rise to \$26.9 billion for 2000 and increase to nearly \$58 billion in 2009.

## **Medical/Surgical Equipment and Supplies Expenditures**

Estimates of expenditures for medical/surgical equipment and supplies were obtained by replicating the approach used for pharmaceuticals. As was the case for pharmaceuticals, the survey included a question on the proportion of non-labor expenditures for medical/surgical equipment and supplies. In 1999, hospital spending on medical/surgical equipment and supplies averaged just over 19 percent of total non-labor expenditures, somewhat higher than had been anticipated. For estimating expenditures for future years, we assumed that this proportion will remain stable through 2009.

When applied to the baseline, hospital spending on medical/surgical equipment and supplies is estimated to have totaled \$34.1 billion in 1999. For 2000, such spending is expected to increase to \$36 billion. Projecting forward, hospital spending on medical/surgical equipment and supplies will increase to over \$59 billion in 2009.

In freestanding nursing facilities, spending on medical/surgical equipment and supplies during 1999 is estimated to be 7.0 percent of total non-labor expenditures. As in hospitals, it is assumed that this proportion will not change through 2009. Therefore, we estimate that spending on medical/surgical equipment and supplies in freestanding nursing homes totaled \$1.9 billion for all of 1999 and will come to about \$2.0 billion in 2000. By 2009, such spending will reach \$3.4 billion.

Combining the medical/surgical equipment and supplies figures for hospitals and freestanding nursing facilities results in estimates of total spending for these products of \$36.0 billion in 1999 and \$38.0 billion for 2000. By 2009, spending on these commodities is projected to rise to \$62.4 billion.

## **GPO Marketplace**

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One of the major objectives in this study was to estimate the size of the GPO marketplace. The size of the GPO marketplace is open to debate. There is little hard data to indicate whether the GPO share of the marketplace is increasing or decreasing. However, HIGPA and other industry representatives estimate that approximately 80 cents of each dollar of hospital non-personnel expenditures is channeled through GPOs. On average, survey respondents reported that approximately 72 percent of their purchases are made through GPOs. Using the industry value as an upper boundary and the survey finding as a lower threshold, the size of the potential GPO marketplace was estimated for both hospitals and nursing homes.<sup>1</sup>

If GPO market penetration is 80 percent of non-labor expenditures, then the size of the hospital marketplace was \$143.2 billion in 1999. For 2000, the potential GPO marketplace will be \$151.3 billion and by 2009, the size of the GPO marketplace will increase to over \$248 billion. On the other hand, if the 72 percent figure (obtained from the survey) is a more accurate rate of market penetration, then the potential GPO marketplace was \$128.3 billion in 1999 and will grow to \$135.6 billion in 2000. At this rate, it will reach \$222.5 billion in 2009.

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<sup>1</sup>Because of the lack of data, it is not presently possible to develop firm estimates for other providers and settings. However, we assume that other providers currently comprise only a small portion of GPO business activities, although this proportion is likely to increase over time. Also, data for hospital-based nursing facilities are included in the hospital figures.

The same market penetration rates were then applied to the freestanding nursing homes baseline. At the 80 percent rate of penetration, the potential GPO nursing home marketplace was estimated at \$21.6 billion in 1999 and \$22.6 billion for 2000, increasing to \$38.5 billion in 2009. At the lower penetration rate of 72 percent, the estimates of the potential GPO nursing home marketplace for 1999 and 2000 are \$19.4 billion and \$20.2 billion, respectively, with a 2009 projection of \$34.5 billion.

When combined, the potential GPO marketplace for hospitals and nursing facilities ranged from approximately \$148 billion to \$165 billion in 1999 and is expected to be between \$156 billion and \$174 billion in 2000. Projecting forward, the potential GPO marketplace will grow to between \$257 billion and \$287 billion in 2009.

## **Savings**

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An equally important component of the study was to estimate the savings that result from efficiencies and other improvements to business processes that GPOs bring to the marketplace. That GPOs save money for their customers and, therefore, for the entire health care system was never an issue. The real question was the magnitude of the savings attributable to GPOs. The task, then, was to calculate what the additional costs to facilities (i.e., how much more would hospitals and nursing homes have had to spend) had the option of purchasing through GPOs not existed. To do this, two issues needed to be addressed. First, it was necessary to determine the rate of savings that is attributable to GPOs. Second, once the rate was established, it needed to be converted to actual dollars of savings.

Facilities were surveyed about the magnitude of the savings, if any, they receive by channeling their purchasing through GPOs. According to respondents, average savings of between 10 percent and 15 percent are achieved through use of GPO contracts. When queried further about how they determined this percentage, purchasing managers stated that they conduct internal studies and detailed cost comparisons. Thus, many GPO customers are not only knowledgeable about pricing, but they are continually assessing the marketplace and tracking their costs and expenditures.

The reported rate of savings was converted to actual dollars by applying it to the baseline. Applying the savings rate to the lower threshold of GPO market penetration (72 percent), a 10-15 percent savings rate equates to absolute minimum savings of approximately \$15-\$22 billion in 1999. This includes savings to hospitals of between \$12.8 billion and \$19.2 billion and savings to freestanding nursing facilities of \$1.9 billion-\$2.9 billion. At the higher rate of market penetration (i.e., 80 percent), total savings are even greater (\$16.5-\$23.5 billion)

## **Other Benefits of GPO Purchasing**

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As stated earlier in this report, the contributions of GPOs goes beyond mere unit costs for individual products and includes a much broader set of contributions related to enhancing the efficiency of business processes. This was confirmed by our provider survey. Among the other positive benefits of purchasing commodities and supplies through GPOs, respondents most often reported that GPOs also save them staff time, provide them with product information that they would otherwise have to compile by themselves, and help supply product standardization. Thus, while the monetary impact of streamlining and otherwise improving the sourcing, procuring, storing, transferring, and consuming of health care products may be difficult to quantify, these improvements also contribute to overall cost savings to providers, patients, and, therefore, the entire health care system.

## **Purchasing Over the Internet**

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Several questions were asked about use of the Internet in an effort to gauge the impact of this new technology on the purchase of health care commodities.<sup>1</sup> Approximately one-third of respondents stated that they currently purchase through the Internet, but half of those who said they do not currently use the Internet (one-third of all respondents) expressed a desire to do so in the future. Of those who use the Internet to make purchases, only a small percentage (5 percent) of all goods are obtained in this manner. We expect that the volume of Internet purchases will grow as companies increase their access to and become more comfortable with this technology.

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<sup>1</sup>Respondents were not asked to gauge the extent of electronic transactions currently in use.

# C ONCLUSIONS

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It is clear from our analyses that GPOs play a major role and make significant contributions to the U.S. health care system. The importance of GPOs is manifested in two distinct ways: 1) cost savings and 2) value added to their clients. Through their ability to command market share and, thereby, negotiate volume discounts, GPOs save their members between 10-15 percent on their purchases. In 1999, this amounted to absolute savings of between \$15 billion and \$22 billion. This directly translates into a savings for the overall health care system. In addition, by streamlining business processes, they introduce important efficiencies to the health care marketplace which, although difficult to quantify, produce additional savings to providers, patients, and the entire health care system. In particular, providers report that GPOs reduce burden on their staffs.

GPOs operate in a realm that is continuously evolving. The health care marketplace, itself, is experiencing significant changes. As a result, GPOs may encounter fewer, but larger, more vertically and horizontally integrated providers who control a bigger share of the health care market than was previously the case. Changes in the characteristics of GPO members and continued shifts in service delivery patterns to ambulatory and community-based settings will provide new growth opportunities for GPOs and their trading partners, including expansion of GPO membership to retail outlets who sell medical equipment and supplies directly to non-institutionalized community-based consumers. The Internet provides yet another opportunity for GPOs for expansion.

While this study represents a significant step towards understanding the value of GPOs to the U.S. health care system, there are important questions about the role of GPOs that still need to be addressed. The analyses indicate that the potential GPO marketplace is huge (between \$156-\$174 billion in 2000). It also appears that customers are purchasing much less through group contracts than they could, providing opportunities and new growth potential. However, to better understand the contributions of GPOs and calculate more precise estimates of the savings they generate, more information is needed from facilities/providers on the products they purchase through group contracts, especially better data on sales volume and purchases by category or commodity type. Additional research is also needed to identify the products providers do not obtain through GPOs, why they are not taking advantage of group purchasing for these items, where and how they obtain these commodities, and whether these products and services represent new opportunities for the group purchasing industry.

# APPENDIX A

## Baseline Marketplace and Trends

# I NTRODUCTION

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This Appendix is included as background to the report on The Role of Group Purchasing Organizations in the U.S. Health Care System. In order to assess the role and contributions of GPOs, it is first necessary to construct a baseline from which this assessment can take place. To construct baselines on the overall economy and the health care sector, data have been compiled from several sources, including the Congressional Budget Office (CBO), the Federal Reserve Board (Fed), and the Health Care Financing Administration (HCFA).

It is important that the Health Industry Group Purchasing Association (HIGPA) and its members examine industry trends in order to understand the characteristics of the health care system and how sectoral changes in medicine and health affect the group purchasing industry. In this Appendix, we (1) identify the factors that affect health care costs of interest to HIGPA, and (2) we prepare projections of non-labor health care costs by categories of products and services relevant to HIGPA members.

The Appendix begins with a discussion of general economic trends and an explanation of the economic model we will be using. We then examine projections of private and public sector organizations on the future of the overall economy and the medical sector. Next, the report examines three sub-sectors of particular interest to HIGPA members: 1) hospitals and medical/surgical supplies within hospitals, 2) nursing homes, and 3) pharmaceuticals.

# UNDERSTANDING HEALTH CARE SECTOR TRENDS

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National health care expenditures reflect both general economic trends and the impact of forces operating within the health care sector. An understanding of the factors driving these systems is important in order to understand the role and contributions of GPOs. We begin, therefore, by reviewing recent trends in overall economic performance and then move to an examination of the health care sector and its components.

## General Economic Trends

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The general state of the economy affects all economic sectors, including health care. Cyclical fluctuations in overall economic health are, therefore, likely to be reflected in each sector. If the economy is robust and expanding, then the health care sector should mirror these conditions. When overall economic growth is slow or stagnant or the economy is contracting, the resulting pressures should also be manifested in the health care sector. Likewise, general inflationary pressures resulting from both internal factors and, to some extent, the effects of events occurring in other countries and world regions are also likely to be reflected in the American health care sector.

The United States economy once again performed very well during 1998 and 1999, expanding beyond expectations.<sup>1,2,3</sup> Economic growth remained solid in spite of recent negative financial events abroad and a tight U.S. labor market. Output continued to expand, unemployment fell to its lowest level since 1970, and inflation remained under control. According to recent (July 1999) data from CBO, US gross domestic product (GDP) was approximately \$8,511 billion in 1998 (Table 1).<sup>4</sup> CBO estimated that U.S. GDP would rise to \$8,964 billion in 1999 and \$9,351 billion by the end of 2000.

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<sup>1</sup>Federal Reserve Board, Monetary Policy Testimony by Alan Greenspan and Semiannual Report on Monetary Policy to the Congress, February 23, 1999.

<sup>2</sup>Congressional Budget Office, The Economic and Budget Outlook: Fiscal Years 2000-2009, January 1999.

<sup>3</sup>Congressional Budget Office, The Economic and Budget Outlook: An Update, July 1, 1999.

<sup>4</sup>Ibid.

**Table 1**  
**CBO Economic Projections for Calendar Years 1998 - 2009**

	Year	Gross Domestic Product (\$billions)	GDP % Change	CPI % Change	Unemployment Rate (%)
<u>Actual</u>	1998	\$8,511	3.9	1.6	4.5
<u>Forecast</u>	1999	\$8,964	4.0	2.2	4.2
	2000	\$9,351	2.4	2.5	4.3
<u>Projected</u>	2001	\$9,751	2.4	2.5	4.6
	2002	\$10,159	2.3	2.5	4.9
	2003	\$10,583	2.3	2.5	5.1
	2004	\$11,027	2.3	2.5	5.3
	2005	\$11,508	2.5	2.5	5.4
	2006	\$12,017	2.5	2.5	5.5
	2007	\$12,554	2.5	2.5	5.5
	2008	\$13,113	2.5	2.5	5.5
	2009	\$13,695	2.5	2.5	5.5

Source: CBO, July 1, 1999

During 1998, output continued to grow. Real GDP is estimated to have increased at an impressive annual rate of 3.9 percent, about the same as in 1997, with similar performance anticipated for 1999. Thus, the current expansion was extended to over eight years, the longest economic expansion in U.S. peacetime history. Unemployment continued to edge down, to 4.2 percent, its lowest level in 30 years, while inflation remained under control and long-term interest rates remained low.

The performance of the economy was reflected in the continuous improvement in the Federal budget. Growth in revenues and continued restraints on Federal spending have resulted in a budget surplus for the first time in 30 years.<sup>5,6</sup> For FY 1998, CBO reports a Federal budget surplus of \$69 billion (Table 2).<sup>7</sup> CBO also anticipates that the surplus will increase over the next ten years, if current policies do not change and the economy remains on its present course. These surpluses are much larger than those projected in August 1998<sup>8</sup> and have been further revised upward since last April. For FY 1999, CBO is projecting a total budget surplus of \$120

<sup>5</sup>Federal Reserve Board, January 23, 1999, op. cit.

<sup>6</sup>Federal Reserve Board, Remarks by Vice Chair Alice M. Rivlin at La Conference de Montreal, June 1, 1999.

<sup>7</sup>Congressional Budget Office, July 1, 1999, op. cit.

<sup>8</sup>Congressional Budget Office, The Economic and Budget Outlook: An Update, August 1998.

billion, about \$10 billion higher than they had previously estimated.<sup>9</sup>

**Table 2**  
**Federal Budget Surpluses: 1998 - 2009**  
**(\$ in billions)**

<u>Year</u>	<u>Billions</u>
1998 (actual)	\$69
1999	\$120
2000	\$161
2001	\$193
2002	\$246
2003	\$247
2004	\$266
2005	\$286
2006	\$334
2007	\$364
2008	\$385
2009	\$413

Source: CBO, July 1, 1999

The economy entered 1999 in good shape, despite recent fluctuations in foreign markets and the concerns over inflationary pressures in the U.S. As job opportunities continued to expand, real incomes rise, and consumers experienced relatively high levels of wealth, CBO forecast significantly stronger growth for calendar years 1999 and 2000 than it had in January 1999. Business investment is likewise robust. It is anticipated, therefore, that domestic demand will continue to rise. During 1999, CBO estimated that real growth in GDP would continue to average around 4.0 percent with inflation at around 2.2 percent and unemployment remaining relatively unchanged. However, as one projects forward, there are some indications of a cooling of the American economy. The boom in capital spending and the growth in consumer spending, which, in large part, helped fuel the expansion, may not be able to continue indefinitely at current levels. Also, continued strong growth combined with expectations of higher inflation have prompted the Fed to increase the federal funds rate to slow the economy and control inflation. For 2000, CBO is forecasting real economic growth on the order of 2.4 percent.

In its January 1999 report, the Fed expected economic growth for all of 1999 to slow somewhat, to between 2.5 percent and 3.0 percent, with inflation ranging between 2.0 percent and 2.5

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<sup>9</sup>Congressional Budget Office, July 1, 1999, op. cit.

percent.<sup>10</sup> As a result, it was expected that the unemployment rate would remain about the same.

According to the Fed, growth abroad will remain sluggish due to persistent economic problems in Russia, Asia and parts of Latin America. Thus, the prospects for increasing exports will be limited while growth in the domestic economy will continue to generate increases in imports. As we move into the new millennium, gains in domestic spending are also expected to moderate. Additionally, the tightening of the labor market may cause upward pressures on inflation.

## **Future Economic Projections**

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Historically, the American economy has moved through a series of expansion and contraction cycles. It is highly unlikely, therefore, that current economic expansion, coupled with low inflation, can continue indefinitely. Weakness in the Russian economy, in certain Asian and Latin American countries, and in other markets and political instability in some parts of the world have generated concerns about the economies of specific countries and regions. Because of the increased connectivity and interdependence between and among nations and regions in our global economy, the rest of the world, including the U.S., may experience repercussions from these situations. Continued instability in foreign markets and high labor force utilization in the U.S. may act to restrain future U.S. economic activity. Therefore, the degree of uncertainty about the future of the U.S. economy has increased. This is reflected, for example, in the recent volatility in the stock market and concerns about inflation, leading the Fed to adjust the federal funds rate upward and to seriously consider future increases as well.

However, current projections for the overall economy in the middle and long term remain more optimistic than they have been in recent decades.<sup>11,12</sup> As shown in Table 1, CBO anticipates continued healthy growth. In 2000, CBO expects growth in the GDP to moderate, with slight increases in inflation and unemployment. CBO estimates an overall average annual growth rate in the GDP of about 2.4 percent per year for the period 2001-2009, down from the 3.9 percent rates for all of 1998 but still sufficient for the economy to continue to expand. Given these assumptions, the GDP will grow to almost \$13.7 trillion in 2009. Over the ten year period, inflation is expected to average 2.6 percent per year and unemployment will rise to about 5.7 percent. If current forces and policies do not change, the Federal budget surplus, currently estimated at \$69 billion for 1998, is expected to rise to \$120 billion for 1999, \$161 billion in 2000 and to \$413 billion by 2008 (Table 2).<sup>13</sup> Information released by the White House Office of

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<sup>10</sup>Federal Reserve Board, January 23, 1999, op. cit.

<sup>11</sup>Congressional Budget Office, Testimony of June O'Neill before the Senate Committee on the Budget, January 29, 1999.

<sup>12</sup>Congressional Budget Office, January 1999, op. cit.

<sup>13</sup>Congressional Budget Office, July 1, 1999, op. cit.

Management and Budget (OMB) in late June estimated an FY 1999 budget surplus of \$99 billion, \$20 billion higher than their February figure.<sup>14</sup> Some private economists, including Standard and Poor's DRI, expect even higher surpluses in 1999 than either CBO or OMB are predicting.<sup>15</sup>

The Fed, on the other hand, expects somewhat slower economic performance in the short term. In its report to the Congress, the Fed anticipates more moderate expansion over the next 12-18 months. For all of 1999, growth in the GDP was expected to slow to between 2-2.5 percent, slightly lower than the more recent CBO estimate.<sup>16</sup> However, the economy continued to expand at a somewhat higher rate. The Fed also believed that unemployment would remain near its current low level of 4.5 percent throughout 1999 while it actually fell to about 4.1 percent at year's end. Also, concerns emerged about higher inflation in the second half of 1999, due to strong upward pressure on wages and a weakening of the forces that have held down the growth of prices. Overall, the CPI was expected to increase to between 2-2.5 percent during 1999.

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<sup>14</sup>E. Pianin and J. Harris, Budget Surplus Forecast Grows by \$1 Trillion, Washington Post, June 29, 1999.

<sup>15</sup>G. Hager, Believe It or Not, \$1 Trillion Extra is Possible, Washington Post, June 29, 1999.

<sup>16</sup>Federal Reserve Board, February 23, 1999, op. cit.

# T HE HEALTH CARE SECTOR

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Our discussion of the health care sector is divided into three sections. We begin by describing national health expenditures for 1997, 1998 and 1999. Next we discuss projections on future spending for health care. Finally, we introduce the economic model that was used to develop the projections that are presented later in this Appendix.

## The Current Health Care Sector

In 1997, the most recent year for which complete data are available, national health expenditures totaled \$1,092.4 billion (Table 3). Of this total, \$1,057.5 billion (97 percent) was spent on health services and supplies and \$34.9 billion (3 percent) on research and construction. The public sector accounted for \$507.1 billion (46 percent of all national health expenditures), with the Federal government responsible for nearly three-fourths (72.4 percent) of this amount.<sup>17</sup>

Expenditures for personal health care totaled \$969.0 billion, nearly 92 percent of all spending on health services and supplies. The remaining 8 percent of spending on health services and supplies went for government public health activities (\$38.5 billion) and for program administration and the net cost of private health insurance (\$50.0 billion).

During 1997, health care spending increased 4.8 percent, continuing a trend of deceleration that began in 1991. However, while this is the slowest annual rates of increase since 1960, when the Federal government first began measuring such spending, it was still more than twice as fast as the overall rate of inflation. On a per capita basis, spending for health care totaled \$3,925 in 1997, up from \$3,781 (3.8 percent) per person in 1996 and \$3,500 per capita in 1994.

In the Fall of 1998, HCFA published its annual projections for future health care spending through 2007.<sup>18</sup> New projections through 2008 were released in July 1999.<sup>19</sup> As shown in Table 3, national health expenditures were expected to total about \$1,159 billion in 1998, rising to \$1,229 billion in 1999. This indicates a rate of increase between 1997 and 1998 of approximately 6 percent, about 1.2 percent higher than the rate of increase between 1996 and

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<sup>17</sup>Braden et al., National Health Expenditures, 1997, Health Care Financing Review, 20(1): Fall 1998.

<sup>18</sup>Smith et. al., The Next Ten Years of Health Spending: What Does the Future Hold?, Health Affairs, 17(5): September/October 1998.

<sup>19</sup>HCFA, OACT, National Health Expenditures Projections: 1998-2008, July 1999.

1997, and an even higher rate, about 7 percent, for 1998-1999. For all of 1998, expenditures for health services and supplies were expected to reach \$1,121.1 billion, 90 percent of which (\$1,021.8 billion) would be spent on personal health care. An additional \$36.8 billion would be spent on research and construction. For 1999, it was estimated that \$1,189.7 billion would be spent on health services and supplies, with \$1,078.3 billion (91 percent) going for personal health services.

**Table 3**  
**National Health Expenditures 1960 - 1999**  
(\$ in billions)

Spending Category	1960	1970	1980	1990	1994	1995	1996	1997	1998	1999*
National Health Expenditures	\$26.9	\$73.2	\$247.3	\$699.5	\$947.7	\$993.7	\$1,042.5	\$1,092.4	\$1,158.6	\$1,228.5
Health Services and Supplies	25.2	67.9	235.6	675.0	917.2	963.1	1,010.6	1057.5	1121.1	1189.7
Personal Health Care	23.6	63.8	217.0	614.7	834.0	879.3	924.0	969.0	1021.8	1078.3
Hospital Care	9.3	28.0	102.7	256.4	335.7	347.2	360.8	371.1	385.9	401.3
Physician Services	5.3	13.6	45.2	146.3	193.0	201.9	208.5	217.6	229.1	241.5
Dental Services	2.0	4.7	13.3	31.6	42.4	45.0	47.5	50.6	53.5	56.6
Other Professional services	0.6	1.4	6.4	34.7	49.6	53.6	57.5	61.9	66.8	72.1
Home Health Care	0.1	0.2	2.4	13.1	26.2	29.1	31.2	32.3	33.0	33.8
Drugs and other medical nondurables	4.2	8.8	21.6	59.9	81.6	88.9	98.3	108.9	120.2	132.6
Prescription Drugs	2.7	5.5	12.0	37.7	55.2	61.1	69.1	78.9	89.1	100.6
Vision Products and other medical durables	0.6	1.6	3.8	10.5	12.5	13.1	13.4	13.9	14.1	14.3
Nursing Home Care	0.8	4.2	17.6	50.9	71.1	75.5	79.4	82.8	86.4	90.1
Other Personal Health Care	0.7	1.3	4.0	11.2	21.9	25.1	27.4	29.9	32.8	36.0
Program administration and net cost of private health insurance	1.2	2.7	11.9	40.7	55.1	53.3	52.5	50.0	57.1	65.1
Government public health activities	0.4	1.3	6.7	19.6	28.2	30.4	34.0	38.5	42.2	46.2
Research and Construction	1.7	5.3	11.6	24.5	30.5	30.6	32.0	34.9	36.8	38.8
Research	0.7	2.0	5.5	12.2	15.9	16.7	17.2	18.0	18.8	19.7
Construction	1.0	3.4	6.2	12.3	14.6	13.9	14.8	16.9	18.0	19.2
National Health expenditures per capita	\$141	\$341	\$1,052	\$2,691	\$3,500	\$3,637	\$3,781	\$3,925	\$4,125	\$4,340
GDP, Billions of dollars	\$527	\$1,036	\$2,784	\$5,744	\$6,947	\$7,270	\$7,662	\$8,111	\$8,468	\$8,845
National Health expenditures as percentage of GDP	5.1%	7.1%	8.9%	12.2%	13.6%	13.7%	13.6%	13.5%	13.7%	13.9%
National Health Expenditures: annual rate of increase	NA	10.6%	12.9%	11.0%	5.6%	4.9%	4.9%	4.8%	6.0%	7.1%

\*Projected by HCFA

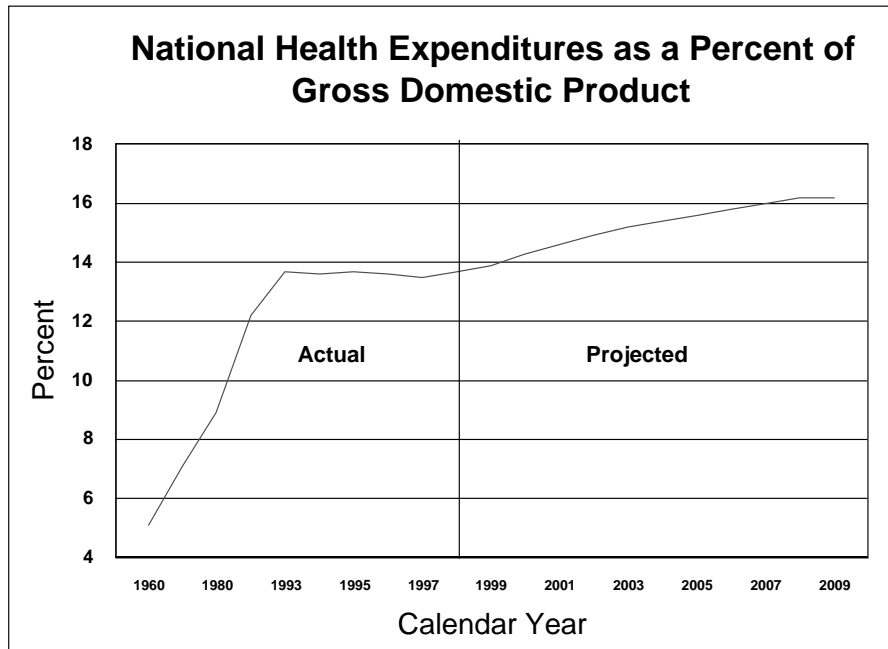
Source: HCFA 1997, 1998, and 1999

## The Future Health Care Sector

During the decade of the 1990s, the health care system experienced important changes. Many of these changes mirrored the performance of the overall economy (i.e., expansion coupled with low inflation). The decade began with double-digit inflation in health expenditures. Since 1993, annual rates of increase in health expenditures have slowed considerably and national health

expenditures as a percentage of GDP have remained relatively unchanged, fluctuating between 13.6 and 13.7 percent (nearly one-seventh of GDP). According to the most recent HCFA data, national health expenditures declined slightly to about 13.5 of GDP in 1997. This proportion increased to 13.7 percent in 1998 and 13.9 in 1999, and was expected to continue to rise beyond 2000 (Figure 1).<sup>20,21</sup>

Figure 1



CBO projected that GDP would increase to almost \$13.7 trillion in 2009 with national health expenditures estimated at \$2,186 billion (Table 4). By 2009, the annual rate of change in national health expenditures, according to CBO, will have risen from the 1996 level less than 5 percent to 6.4 percent. Through 2000, national health expenditures will remain at approximately 13.5 percent of GDP, gradually rising to about 16.0 percent of GDP in 2009. Published projections of national health expenditures by HCFA staff show generally similar trends (Table 5), although the HCFA projections show higher values for total NHE, higher annual NHE growth rates, higher total GDP, and, a slightly higher value for NHE as a percent of GDP. By 2009, HCFA projects the NHE to total \$2,319 billion and reach 16.4 percent of GDP.

<sup>20</sup>Braden et al., Fall 1998, op. cit.

<sup>21</sup>HCFA, OACT, 1999 op. cit.

**Table 4**  
**National Health Expenditures (NHE) for Calendar Years 1996 - 2009\***

	GDP (\$billions)	NHE (\$billions)	Annual Rate of Change in NHE	NHE as percent of GDP
1996	7,636	1,045	4.9%	13.7%
1997	8,081	1,085	4.8%	13.4%
1998	8,511	1,138	4.9%	13.3%
1999*	8,964	1,197	5.3%	13.4%
2000*	9,351	1,259	5.2%	13.5%
2001*	9,751	1,332	5.8%	13.7%
2002*	10,159	1,412	6.0%	13.9%
2003*	10,583	1,503	6.4%	14.2%
2004*	11,027	1,601	6.5%	14.5%
2005*	11,508	1,705	6.5%	14.8%
2006*	12,017	1,815	6.5%	15.1%
2007*	12,554	1,931	6.4%	15.4%
2008*	13,113	2,055	6.4%	15.7%
2009*	13,695	2,186	6.4%	16.0%

\* Projected data

Sources: CBO, *The Economic & Budget Outlook: An Update*, July 1, 1999.  
CBO, *The Economic & Budget Outlook: Appendix H: Projections of National Health Expenditures, 1997-2008*, Jan. 1998.

Relatively low rates of health care inflation persisted through 1998 and 1999. They result from the convergence of several factors including excess health system capacity, which enables health plans to negotiate discounts from providers, and continued reduction in the use of inpatient hospital services. Coupled with competition among health plans, ongoing expansion of ambulatory and community-based care, a conscious effort by employers to hold down escalating health care costs, and the expansion of managed care, these factors have all contributed to the decline in medical inflation during the 1990s. These trends, which have historically driven rapid growth in health expenditures, particularly technological change, are still in place and will continue to drive the underlying demand for medical services.<sup>22</sup> It is unclear, therefore, how much longer medical inflation can be held in check.<sup>23</sup>

Decreasing profit margins among managed care plans, concerns with the long-term financial viability of the Medicare program, a growing and aging population, expensive new products (including pharmaceuticals) and technological innovations, implementation of new payment and other cost containment initiatives (i.e., increased use of prior authorization, utilization review, etc.) in the Balanced Budget Act of 1997 (BBA), for example, are likely to add new pressures to the marketplace that could lead to a rise in future rates of health care inflation. On the other

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<sup>22</sup>HCFA, OACT, 1999, op. cit.

<sup>23</sup>Congressional Budget Office, Testimony of Dan Crippen, Director, before the Subcommittee on Employer-Employee Relations, Committee on Education and the Workforce, U.S. House of Representatives, June 11, 1999.

hand, the rate of increase in public sector spending on health care should slow, at least in the short term, as provisions of the BBA are implemented.

**Table 5**  
**Projected National Health Expenditures 1998 - 2009**  
(\\$ in billions)

Spending Category	1997	1998*	1999*	2000*	2001*	2002*	2003*	2004*	2005*	2006*	2007*	2008*	2009**
National Health Expenditures	\$1,092.4	\$1,158.6	\$1,228.5	\$1,316.2	\$1,403.6	\$1,495.5	\$1,590.4	\$1,690.4	\$1,799.5	\$1,917.3	\$2,043.1	\$2,176.6	\$2,319.1
Health Services and Supplies	1057.6	1121.1	1189.7	1275.5	1361.0	1451.0	1543.7	1641.5	1748.2	1863.3	1986.5	2117.1	2256.6
Personal Health Care	969.0	1021.8	1078.3	1150.9	1227.3	1310.0	1397.9	1488.6	1586.4	1692.1	1805.2	1925.2	2053.4
Hospital Care	371.1	385.9	401.3	424.0	447.5	473.9	502.5	530.7	560.3	591.7	624.9	659.5	695.8
Physician Services	217.6	229.1	241.5	258.7	275.9	293.3	310.7	328.7	347.9	369.0	391.8	416.1	441.9
Dental Services	50.6	53.5	56.6	60.2	63.9	67.7	71.5	75.3	79.3	83.7	88.2	93.1	98.2
Other Professional services	61.9	66.8	72.1	77.9	83.9	90.1	96.4	102.8	109.7	116.8	124.4	132.4	141.0
Home Health Care	32.3	33.0	33.8	36.0	38.3	41.0	43.9	47.4	51.1	55.4	60.2	65.4	71.0
Drugs and other medical nondurables	108.9	120.2	132.6	145.5	159.1	173.9	189.9	206.9	225.6	245.4	266.3	288.3	312.2
Prescription Drugs	78.9	89.1	100.6	112.1	124.4	137.7	152.4	168.0	185.2	203.6	223.0	243.4	265.8
Vision Products and other medical durables	13.9	14.1	14.3	15.0	15.8	16.6	17.6	18.5	19.5	20.5	21.7	22.9	24.2
Nursing Home Care	82.8	86.4	90.1	94.1	99.2	104.9	111.1	117.6	124.9	132.9	141.5	150.7	160.5
Other Personal Health Care	29.9	32.8	36.0	39.5	43.7	48.6	54.3	60.7	68.1	76.7	86.3	96.8	108.6
Program administration and net cost of private health insurance	50.0	57.1	65.1	74.5	79.6	82.9	83.5	85.8	89.5	93.3	97.2	101.1	105.1
Government public health activities	38.5	42.2	46.2	50.2	54.0	58.0	62.4	67.1	72.3	77.9	84.1	90.8	98.1
Research and Construction	34.9	36.8	38.8	40.7	42.6	44.5	46.6	48.9	51.4	53.9	56.7	59.6	62.5
Research	18.0	18.8	19.7	20.6	21.6	22.8	24.0	25.4	26.9	28.4	30.1	31.9	33.8
Construction	16.9	18.0	19.2	20.1	21.0	21.8	22.6	23.5	24.5	25.5	26.5	27.6	28.7
National Health Expenditures per capita	\$3,925	\$4,125	\$4,340	\$4,611	\$4,877	\$5,155	\$5,439	\$5,737	\$6,061	\$6,409	\$6,780	\$7,170	\$7,586
GDP, Billions of Dollars	\$8,111	\$8,468	\$8,845	\$9,193	\$9,591	\$10,019	\$10,488	\$11,001	\$11,560	\$12,154	\$12,784	\$13,446	\$14,145
National Health Expenditures as percentage of GDP	13.5%	13.7%	13.9%	14.3%	14.6%	14.9%	15.2%	15.4%	15.6%	15.8%	16.0%	16.2%	16.4%
National Health Expenditures: annual rate of increase	4.8%	6.0%	6.0%	7.1%	6.6%	6.6%	6.3%	6.3%	6.5%	6.5%	6.6%	6.5%	6.5%

\*Projected by HCFA

\*\* Projected by Muse & Associates using HCFA inflators

Source: HCFA, Office of the Actuary, 1998.

As the myriad of factors converge and as excesses are squeezed out of the health care system, growth in overall health care spending will likely accelerate. While few experts are suggesting that a return to the double-digit rates of increase experienced during the 1980s is imminent, there is growing concern that the current situation cannot be maintained indefinitely and that a rise in the rate of health care inflation is inevitable. Over the past year, insurance premiums have begun to grow more rapidly as health plans, which had held down premium increases in order to capture larger market share, seek to improve profit margins. According to data compiled by Credit Suisse First Boston, the annual percent change in HMO premium costs, which had actually declined in 1995 and 1996, increased 3.5 percent in 1997 and 5 percent in 1998. For 1999, the rate of increase of 6.5 percent was anticipated. Even bigger hikes are likely next year.<sup>24</sup> Other analysts are predicting increases in the range of 6-10 percent for both 1999 and 2000, with some predicting even larger hikes.<sup>25</sup> Results from a recent national survey of health insurers indicate that health care costs are likely to increase between 6-12 percent during the last half of 1999 and into 2000. This includes a 6 percent increase for HMOs, 7.7 percent for point-of-service plans, 10.2 percent for PPOs and 12.1 percent for indemnity plans.<sup>26</sup> These projected increases are attributed to a number of factors including tight limits on Medicare and Medicaid reimbursement

<sup>24</sup>Reported in U.S. News & World Report, July 12, 1999.

<sup>25</sup>Congressional Budget Office, June 11, 1999, op cit..

<sup>26</sup>Buck Consultants, The National Health Care Trend Survey, 1999.

causing providers to shift costs to private payers, a growing number of federal and state mandates, more providers passing on the costs of increased regulatory requirements, consolidation among providers resulting in greater bargaining power and higher rates of reimbursement from managed care organizations, and advances in medical technology.

## **Model of the Health Care Sector**

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The health care sector of the economy can best be understood in terms of trends in population, prices and utilization of health care services. Specifically, health economics textbooks state that changes in total payments for health care are determined by the following equation:

$$\Delta \text{Total payments}^{27} = (\Delta \text{Population} \times \Delta \text{Price} \times \Delta \text{Utilization}) + \text{Administration}$$

In its simplest form, the model postulates that changes in population, price, and utilization cause changes in health care expenditures with a small add on for administration. Future trends in hospitals, nursing homes, and pharmaceutical, and other expenditures are a product of trends in these three factors. The next sections detail the specific subsections of the health care sector that are of interest to HIGPA members.

## **Components of the Health Care Sector**

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Health care delivery has changed substantially in recent years. GPO operations now include a broad scope of health care providers and settings (i.e., hospitals, nursing homes, hospices, ambulatory surgery centers, clinics, etc.). For settings other than hospitals and nursing homes, there is, unfortunately, little or no data. Hence, we could not project these “other” types of providers. However, we are told by industry experts that these “other” settings represents less than 5 percent of the GPO marketplace. Thus, the estimates and projections presented in this report should be viewed as minimums that may slightly understate the actual GPO marketplace and market share.

Figure 2 outlines the components of the health care sector that we will be examining in the remainder of this Appendix.

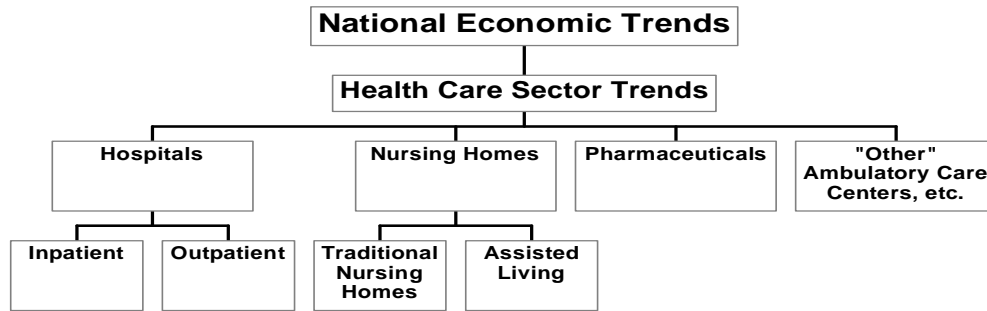
Figure 2

### **Components of the**

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<sup>27</sup>  $\Delta$  means "changes in". For example, an increase in the total population should lead to an increase in total program payments.

# Health Care Sector



While the delivery of health care services has changed, hospitals and nursing homes, which include assisted living facilities, remain the primary GPO marketplace. In 1970, hospital and nursing home expenditures were 47 percent of national health expenditures for health services and supplies. For all of 1999, hospitals and nursing homes represent approximately 41 percent, or \$491.4 billion, of total national expenditures for health services and supplies (Table 5). This is expected to increase to about \$856.3 billion in 2009. However, as a proportion of overall national health spending on services and supplies, the hospital and nursing home share will decline slightly to around 38 percent.

Because of the importance of pharmaceuticals to future costs of both hospitals and nursing homes, we discuss separately pharmaceuticals and their trends within hospitals and nursing homes.

The following sections focus on those subsectors of the health care system that are of particular interest to HIGPA members.

# HOSPITALS

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Expenditures for hospital care comprise the single largest category of health care expenditures. In 1997, the last year for which complete data are available, a total of \$371.1 billion was spent on hospital services.<sup>28</sup> Hospital expenditures accounted for more than one-third (35 percent) of all spending on health care services and supplies in 1997, with community hospitals<sup>29</sup> responsible for nearly nine out of every ten dollars spent on hospital services.<sup>30</sup> HCFA estimates that hospital expenditures reached \$385.9 billion in 1998 and \$401.3 billion in 1999, approximately 34 percent of total spending on health services and supplies in each year.<sup>31</sup>

During 1997, hospital expenditures, which had been increasing at a rate of about 4 percent per year for the past several years, grew by only 2.9 percent, an all-time low. According to HCFA analysts, this low rate of growth has been driven by a marked deceleration in spending for inpatient services in community hospitals, which actually declined 0.3 percent in 1997.<sup>32</sup> Number of admissions, length of stay, and occupancy rates all declined, continuing the trend that began in the 1980s. In 1997 for example, inpatient expenditures (\$244 billion) still accounted for about two-thirds (65.7 percent) of all community hospital revenue. However, this is down from 87 percent in 1980 and 75 percent in 1991. The dramatic increase in outpatient revenues, which increased 10.3 percent in 1997, is due to a variety of factors, such as changes in technology that allow surgeries and procedures to be done on an outpatient basis, and financial pressures to restrict admissions. The growth of managed care, for example, has provided incentives to treat patients in less expensive ambulatory settings and to reduce lengths of stay for patients who are admitted to the hospital. For both 1998 and 1999, the annual rates of increase in expenditures for hospital care services were expected to be 4.0 percent.<sup>33,34</sup>

Results from a recent Muse & Associates survey of hospitals indicate that payroll and related

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<sup>28</sup>Braden et. al., 1998, op. cit.

<sup>29</sup> Community hospitals do not include Federally owned and operated hospitals. In 1997, Federally owned and operated hospitals represent approximately 6.67 percent of all hospital expenditures. These hospitals can purchase non-labor items from the Federal Supply Schedule (FSS).

<sup>30</sup>Braden et. al., 1998, op. cit.

<sup>31</sup>HCFA, 1999, op. cit.

<sup>32</sup>Braden et. al., 1998, op. cit.

<sup>33</sup>HCFA, 1998, op. cit.

<sup>34</sup>HCFA, 1999, op. cit.

employee benefits account for about 55.4 percent of total hospital expenditures. The residual non-labor expenditures (i.e., medical equipment, supplies, pharmaceuticals, food, etc.) are about 44.6 percent of total hospital costs. The survey results confirm and validate data on hospital expenditures compiled from the annual survey of hospitals conducted by the American Hospital Association.<sup>35</sup>

Hospital personnel expenditures for 1998 were approximately \$214 billion. Thus, the potential 1998 hospital marketplace for pharmaceuticals, materials and supplies, food, etc., was about \$172 billion. Based on survey responses, this included \$20.7 billion for pharmaceuticals and an additional \$32.8 billion for medical/surgical equipment and supplies.

HIGPA and many other industry representatives estimate that approximately 80 cents of each dollar of hospital non-personnel expenditures is channeled through GPOs. However, responses to our survey yielded a slightly lower number, 72 cents of each dollar. If both of these figures are applied to the non-labor component of hospital expenditures, then the 1998 GPO share of the hospital marketplace is estimated to have ranged between \$123.4 billion and \$137.7 billion.

Applying these same proportions to 1999 estimates of expenditures for hospital care, results in personnel costs of \$222.3 billion. The size of the marketplace for pharmaceuticals, materials and supplies, food, etc. was \$179 billion in 1999. Spending on pharmaceuticals is estimated to have totaled \$21.9 billion, with an additional \$34.1 billion spent on medical/surgical equipment and supplies. The potential GPO hospital marketplace is estimated at between \$128.3 billion and \$143 billion in 1999 and between \$135.6 billion and \$151.3 billion in 2000.

Hospitals dominate the health care sector. According to the American Hospital Association, there were 5,057 community hospitals located throughout the country in 1997 (Table 6). This represents a decline in number of facilities of nearly 5 percent since 1992. Approximately 56 percent of all community hospitals are situated in urban/metropolitan areas. Nearly 60 percent are nonprofit institutions, about one-fourth are owned by state and local governments, and the remaining 16 percent are proprietary.

Almost half of all community hospitals have between 50 and 200 beds. At the smaller end of the scale, about 18 percent have between 25 and 49 beds. An additional 13 percent of facilities are between 200-299 beds. Facilities with more than 300 beds represent 16 percent of all community hospitals and very small (< 25 beds) facilities comprise about 6 percent of all community hospitals.

As shown in Table 6, most measures of inpatient care have declined since 1992. On almost all of these measures (i.e., total beds, hospital admissions, inpatient days, length of stay, and inpatient surgeries), the values are lower in 1997 compared with 1992. The only exception is total admissions, where the number of admissions in 1997 is slightly (1.75 percent) higher than in

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<sup>35</sup>American Hospital Association, 1999 Hospital Statistics.

1992.

Decreasing use of inpatient care has been offset by continued growth in hospital outpatient services. Use of outpatient services has increased significantly. The total number of outpatient visits has grown substantially, by almost 30 percent compared with 1992. This is especially true for other outpatient visits, which have risen by 39 percent, and outpatient surgeries, which show a 19 percent increase.

<b>Table 6</b>		
<b>U.S. Registered Community Hospitals</b>		
<b>Overview 1992-1996</b>		
	<b>1992</b>	<b>1997</b>
<b>Total</b>	5,292	5,057
<b>Bed Size Category</b>		
6-24	230	281
25-49	900	890
50-99	1,210	1,111
100-199	1,321	1,289
200-299	725	679
300-399	412	367
400-499	201	185
500+	293	255
<b>Location</b>		
Hospitals Urban	3,007	2,852
Hospitals Rural	2,285	2,205
<b>Control</b>		
State and Local Government	1,396	1,260
Nonprofit	3,173	3,000
Investor Owned	723	797
<b>Utilization</b>		
Total Beds	920,943	853,287
Total Admissions	31,033,557	31,576,960
Total Inpatient Days	221,047,104	192,504,015
Hospital Unit Beds	850,846	769,505
Hospital Unit Admissions	30,806,169	31,047,930
Hospital Unit Inpatient Days	198,339,610	165,605,620
Avg. Length of Stay (Total Facility)	7.1	6.1
Hospital Unit Length of Stay	6.4	5.3
Emergency Outpatient Visits	90,768,575	92,819,892
Other Outpatient Visits	257,753,077	357,320,118
Total Outpatient Visits	348,521,652	450,140,010
Inpatient Surgeries	10,552,378	9,509,081
Outpatient Surgeries	12,307,594	14,678,290
Total Surgeries	22,859,972	24,187,371
Births	3,924,944	3,742,191
<b>Personnel</b>		
Full Time RNs	692,041	708,245
Full Time LPNs	131,238	112,517
Part Time RNs	323,496	385,909
Part Time LPNs	51,939	49,489
Total Full Time	3,132,110	3,248,861
Total Part Time	1,122,155	1,246,592

Source: American Hospital Association, 1999

In the future, pharmaceuticals are projected to be an increasing share of hospital expenditures, as drug-based therapies slowly replace invasive techniques in the treatment of many medical

conditions. Pharmaceuticals, currently 12-13 percent of hospital expenditures, could easily increase to 17 percent or more of non-labor costs by 2009. Medical and surgical supplies should increase at the overall growth rate for hospital expenditures of 5.7 percent. Outpatient hospital expenditures will grow even faster, at average annual rates of 8.3 percent. In 2009, the non-labor hospital spending will be approximately \$310 billion. At the current rate of penetration, total GPO market share will grow by almost 75 percent, to between \$222 billion and \$248 billion.

Hospitals will react to changes in the health care marketplace, especially the growth of managed care and the development of prospective payment systems, through a variety of adaptive behaviors. These include increased merger and joint-venture activity, specialization in profitable product lines, diversification into new lines of business, including expansion into post-acute care (i.e., skilled nursing facilities and home health care), where, until recently, reimbursement was less restrictive, with fewer constraints on the growth of expenses.<sup>36</sup> All of these strategies are designed to help hospitals remain financially viable, improve their competitive position, enhance their negotiating position with payers, increase their ability to assume risk, increase market share, and generate increased revenue. In the future, GPOs may encounter fewer, but larger, more vertically and horizontally integrated providers who command a bigger share of the health care market than was previously the case.

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<sup>36</sup>Deloitte Touche, U.S. Hospitals and the Future of Health Care, 1998.

# NURSING HOMES

The nursing home industry is another major component of the health sector and a significant marketplace for GPOs. Results from the most recent national survey of nursing homes indicate that approximately 1.5 million residents received care in 16,700 nursing facilities nationwide in 1995 (Table 7). Most of these residents were elderly, female, and white. Over 90 percent were over age 65.<sup>37</sup>

**Table 7**  
**Data on Nursing Homes in United States - 1995**

Facility Characteristic	Number of Facilities	Number of Beds	Beds per Nursing Home	Number of Residents	Occupancy Rate**
All facilities	16,700	1,770,900	106.0	1,548,600	87.4
<i>Ownership</i>					
Proprietary	11,000	1,151,700	104.7	989,700	85.9
Voluntary nonprofit	4,300	468,100	108.9	420,800	89.9
Government and other	1,400	151,000	107.9	138,100	91.5
<i>Certification</i>					
Certified by Medicare and Medicaid	11,600	1,378,400	118.1	1,213,700	88.0
Certified by Medicare only	1000*	59,600	59.6	50,000	83.9
Certified by Medicaid only	3,400	280,300	82.4	240,600	85.8
Not certified	700*	52,600	75.1	44,300	84.2
<i>Bed Size</i>					
Less than 50 beds	2,800	87,300	31.2	71,100	81.4
50-99 beds	5,900	430,400	72.9	378,300	87.9
100-199 beds	6,700	902,500	134.7	794,200	88.0
200 beds or more	1,300	350,800	269.8	305,000	86.9
<i>Census Region</i>					
Northeast	2,900	378,800	130.6	346,700	91.5
Midwest	5,600	564,400	100.8	494,900	87.7
South	5,500	572,700	104.1	495,000	86.4
West	2,800	254,900	91.0	212,000	83.2
<i>Metropolitan Statistical Area (MSA)</i>					
MSA	10,300	1,217,500	118.2	1,068,200	87.7
Not MSA	6,400	553,400	86.5	480,400	86.8
<i>Affiliation***</i>					
Chain	9,100	978,000	107.5	857,300	87.7
Independent	7,600	788,200	90.7	689,100	87.4

\*Figure should not be assumed reliable because the sample size is between 30-50 or the sample is greater than 60 but has a relative standard error over 30 percent.

\*\* Occupancy rate is calculated by dividing residents by available beds.

\*\*\* Excludes a small number of homes, beds, and residents with unknown affiliation.

Source: NCHS, 1995 National Nursing Home Survey

<sup>37</sup>Strahan, An Overview of Nursing Homes and Their Current Residents: Data from the 1995 National Nursing Home Survey, NCHS, Advance Data Number 280, January 23, 1997.

Approximately two-thirds of all nursing homes are proprietary. Voluntary nonprofit facilities comprise slightly more than one-fourth of all facilities and government-owned nursing homes account for the remainder (about 8 percent). Between 1985 and 1995, the number of proprietary nursing homes decreased by nearly one-fourth, from 14,300 to 11,000. Voluntary nonprofits, however, increased in number from 3,800 to 4,300 facilities during the same period, a rise of 13.2 percent. Government and other facilities increased by 30 percent, from 1,100 facilities in 1985 to 1,400 in 1995.

More than half (54.3 percent) of all nursing homes are affiliated with multi-facility nursing home chains while 45.5 percent are independent operations. Most nursing facilities are located in the Midwest (33.4 percent) and in the South (32.8 percent). Over 60 percent are in metropolitan areas. Approximately 70 percent of all nursing facilities are certified for both Medicare and Medicaid, twenty percent are certified for Medicaid only, and fewer than 10 percent are certified for Medicare only or are uncertified.

In 1997, total spending in freestanding and hospital-based nursing facilities was approximately \$93.2 billion, 9.6 percent of all spending on personal health care (Table 8). Spending for freestanding nursing home care totaled \$82.8 billion, nearly 90 percent of the total. Hospital-based nursing facilities accounted for an additional \$10.4 billion (11 percent of total nursing home expenditures). Growth in overall nursing home spending slowed from 6.1 percent in 1996 to 5.4 percent in 1997. However, total expenditures increased about 15 percent for hospital-based facilities, but only 4.3 percent in freestanding facilities. For all of 1998, it is estimated that expenditures for nursing home care totaled \$98.3 billion, \$86.4 billion (88 percent) in freestanding facilities and \$11.9 billion (12 percent) in hospital-based SNFs, an increase of about 5.5 percent over 1997. Total nursing home expenditures were projected to rise 5.6 percent in 1999, to \$103.8 billion. This included \$90.1 billion (87 percent) of expenditures in freestanding nursing homes and \$13.7 billion (13 percent) in hospital-based facilities.

Assuming a non-labor proportion of 30 percent, the potential GPO marketplace for materials and supplies in freestanding nursing facilities was \$26 billion for 1998 and increased to \$27 billion in 1999. For 2000, it is expected that non-labor expenditures in freestanding nursing facilities will reach \$28.2 billion. Of these amounts, the GPO market share for 1998 was estimated at between \$19 billion and \$21 billion, including \$1.7 billion worth of pharmaceuticals and \$1.8 billion of medical equipment and supplies. For 1999, the GPO market share was between \$19.4 billion and \$21.6 billion, with \$1.8 billion for pharmaceuticals and \$1.9 billion for medical equipment and supplies. In 2000, it is projected that the GPO market share will be between \$20.2 billion and \$22.6 billion, with \$1.9 billion for pharmaceuticals and \$2.1 billion for medical equipment and supplies. No separate estimates were calculated for hospital-based nursing facilities because they have already been included under hospital expenditures (see above).

Nursing home care is expensive. On average, annual nursing home care costs were \$41,000 in 1996, or \$110 per day. However, most Americans will not be able to pay for long-term care services on their own. Nearly 70 percent of nursing home residents currently rely on Medicaid to

pay for their care. Medicare pays for some nursing home care, but only for a small proportion (7 percent) of nursing home residents, and only for recuperative services following a hospitalization. The remaining 24 percent of residents are covered through private funding sources. Long-term insurance covers only about 3 percent of nursing home care costs.

Reimbursement, especially the introduction of a prospective payment system for Medicare, and

**Table 8**  
**Total Expenditures for Nursing Home Care,**  
**by Type of Facility: Calendar Years 1990-99**

Year	Total	Hospital-Based Nursing Home Facilities*	Freestanding Nursing Home Facilities**
<i>Amount in Billions</i>			
1990	\$54.7	\$3.7	\$50.9
1991	61.5	4.4	57.2
1992	67.4	5.1	62.3
1993	72.5	6.1	66.4
1994	77.8	6.7	71.1
1995	83.3	7.8	75.5
1996	88.4	9.0	79.4
1997	93.2	10.4	82.8
1998	98.3	11.9	86.4
1999	103.8	13.7	90.1
<i>Annual Percent Growth</i>			
1990	---	---	---
1991	12.6%	17.0%	12.2%
1992	9.5%	16.8%	9.0%
1993	7.6%	18.7%	6.6%
1994	7.3%	11.3%	7.1%
1995	7.1%	16.4%	6.2%
1996	6.1%	15.0%	5.2%
1997***	5.4%	15.0%	4.3%
1998***	5.5%	15.0%	4.3%
1999***	5.6%	15.0%	4.3%

\*Included in the hospital spending category of the National Health Accounts (NHA).

\*\* Estimated spending reported in the nursing home care category of the NHA.

\*\*\* Projected by Muse & Associates using HCFA inflators.

Source: HCFA, Office of the Actuary.

other incentives for nursing homes are changing. As the population ages and as inpatient hospital length of stay continues to decline, the demand for nursing homes and other community-based services will grow. Consolidation within the nursing home sector is expected to continue. Incentives appear to be shifting from care for high acuity patients to lower acuity patients. Simultaneously, assisted living arrangements are drawing the coveted private pay patients away

from the traditional nursing home. From the GPO's point of view, we project that this will result in a decrease in expenditures to traditional nursing homes that will be more than offset by an increase in sales to assisted living facilities that will often be owned by the nursing home chains that are currently customers of the GPO industry. Therefore, increased levels of purchasing through integrated health networks, chains, or group purchasing organizations is likely to occur. This may accelerate with the shift to prospective payment, especially within the Medicare program.<sup>38</sup>

Between the present and 2009, HCFA projects that expenditures for freestanding nursing home care will increase at an average annual rate of about 5.9 percent. By 2009, total spending in freestanding nursing facilities is projected to grow to about \$160.5 billion.<sup>39</sup> In 2009, non-labor expenditures in freestanding nursing home marketplace will rise to \$48 billion. At the current rate of market penetration, between \$34.5 billion and \$38.6 billion worth of expenditures in freestanding nursing home sector will be channeled through GPOs. We expect pharmaceutical expenditures will rise from current levels (6.6 percent of non-labor expenditures) to 9 percent of non-labor nursing home expenditures by 2009, while spending on medical supplies will grow more slowly. Consequently, in 2009, within freestanding nursing homes, we project that \$4.3 billion will be spent on pharmaceuticals and \$3.4 billion on medical supplies.

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<sup>38</sup>SMG Market Letter, A Quick look at the Health Care Industry in 1998, January 1998.

<sup>39</sup>Projections of expenditures for hospital-based nursing homes are included in the data for hospitals.

# A ASSISTED LIVING

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Assisted living is a rapidly growing component of the long-term care system. Assisted living provides relatively independent seniors with supervision, assistance, and limited health care services. It combines housing, personal services, and minimal medical/nursing care in an environment that promotes individual independence and privacy.<sup>40</sup> Assisted living includes 24-hour protective oversight, food, shelter, and the provision and/or coordination of a range of services that promote quality of life for the individual. No longer able to live on their own, assisted living residents are too healthy to require the level and scope of services provided in nursing homes. At the beginning of 1998, it was estimated that there were approximately 25,000 assisted living facilities serving as many as 1 million individuals. A typical assisted living resident is an elderly, white female who is mobile but needs assistance with some personal activities.<sup>41</sup>

Costs for assisted living vary greatly. Assisted living is not inexpensive. On average, assisted living expenses are thought to range between \$1,000 - \$3,000 per month, depending on the nature of the facility and the services/amenities required and/or provided. Total expenditures are expected to grow rapidly over the next several years, reaching \$33 billion in 2001. This is a significant amount of money.

Nearly all assisted living services are paid for with private funds. SSI, the Older Americans Act, and Social Services Block grants may provide payments for some assisted living services. In some states, the Medicaid program will also pay for certain assisted living services. Long-term care insurance is another source of payment. Currently, managed care is not a significant factor in assisted living. In 1996, less than 5 percent of assisted living residents had their care provided and/or paid through managed care plans.

From the perspective of the GPO industry, the important question is what proportion of assisted living expenditures are for pharmaceuticals, equipment, and other supplies obtained through GPOs and how much is for personal services to assist individuals with activities of daily living. Residents of assisted living facilities are healthier and more mobile than nursing home patients and, therefore, do not require more intensive skilled nursing and related complex medical services associated with nursing facilities. Unfortunately, there is little hard data to examine the assisted

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<sup>40</sup>American Health Care Association, Assisted Living: Meeting the Needs of a Growing Elderly Population, October 1997.

<sup>41</sup>American Health Care Association, Facts-at-a-Glance: Assisted Living, September 1998.

living marketplace. However, as the population grows and continues to age, a larger number of individuals will likely need these types of services and the assisted living marketplace will continue to grow.

# P HARMACEUTICALS

## Overall Growth in Pharmaceuticals

**Table 9**  
**Retail Prescription Drug Expenditures and**  
**Average Annual Percent Growth:**  
**Selected Calendar Years 1960 - 2009**

Year	Amounts (\$ billions)	Average Annual Percent Growth from Previous Year Shown
1960	\$2.7	--
1970	5.5	7.5
1980	12.0	8.2
1990	37.7	12.1
1991	42.1	11.9
1992	46.6	10.6
1993	50.6	8.7
1994	55.2	9.0
1995	61.1	10.6
1996	69.1	13.2
1997	78.9	14.1
1998*	89.1	12.9
1999**	100.6	12.9
2000**	112.1	11.4
2001**	124.4	11.0
2002**	137.7	10.7
2003**	152.4	10.6
2004**	168.0	10.2
2005**	185.2	10.2
2006**	203.6	9.9
2007**	223.0	9.5
2008**	243.4	9.2
2009**	265.8	9.2

\* Projected by Muse & Associates using HCFA inflators

\*\* Projected by HCFA

Source: HCFA, Office of the Actuary, 1997, 1998 & 1999.

Expenditures for prescription drugs purchased in retail outlets totaled \$78.9 billion in 1997 (Table 9). An additional \$21.8 billion of prescription drugs were dispensed through hospitals, nursing homes and other non-retail outlets.<sup>42</sup> Together, prescription drug expenditures account for 9.2 percent of all national health expenditures and 9.5 percent of expenditures for health services and supplies. In 1998, total prescription drug expenditures are estimated to have reached \$113.9 billion, including \$89.1 billion in retail sales (Table 9) and \$24.8 billion dispensed through institutional settings. For 1999, prescription drug expenditures were projected to total \$126.4 billion, with \$100.6 billion from retail sales and \$25.8 billion in institutional expenditures.

Prescription drug expenditures continue to be one of the fastest growing components of health care spending (Figure 3). After declining for several years, prescription drug price growth appears to be increasing once again.<sup>43</sup> Over the past several years, spending for prescription drugs has grown at

<sup>42</sup> Neither CBO nor HCFA estimates institutional prescription drug sales. The PhRMA annual survey collects industry reported data that estimate a portion of the institutional market based on IMS data but exclude hospitals. Hence, we estimated the institutional expenditures by using a combination of the IMS data and the hospital estimates developed in this report. The resultant estimates were shared with several pharmaceutical industry experts who confirmed that they were reasonable.

<sup>43</sup>Shutan, Keeping Costs Capped, Employee Benefit News, Feb. 1998.

double-digit rates<sup>44</sup> According to data compiled by HCFA for the 1997 NHEs, spending on prescription drugs purchased through retail outlets increased 10.6 percent in 1995, 13.2 percent in 1996, and 14.1 percent in 1997. The 1997 rate of increase was nearly three times as fast as the increase in overall health expenditures.

Average annual rates of increase for retail prescription drug expenditures are expected to continue at double digit levels through 2005, after which they will begin a gradual decline to about 9.2 percent per year in 2009. At these rates, retail prescription drug expenditures are projected to total \$265.8 billion in 2009.

## **Sources of Pharmaceutical Growth**

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HCFA reports that the recent rapid growth in drug costs over the past few years has often been cited as a contributing factor to health plans' escalating costs. Unlike the 1980s, when sharp increases in drug spending were largely due to price increases, recent higher spending growth is almost entirely accounted for by rising utilization (number of prescriptions) and intensity (including changes in size and mix of prescriptions). Growth in the number of prescriptions dispensed, up 6.0 percent in 1995 and 4.2 percent in both 1996 and 1997, are well above historical rates.<sup>45</sup> In 1998, 80 percent of the growth in prescription drug expenditures was due to increased volume, mix, and availability of pharmaceutical products (Figure 3).<sup>46,47</sup> Drug price inflation (as measured by the CPI for prescriptions drugs), which has historically been a major factor in rapid growth, has been relatively restrained since 1993. Excess inflation for prescription drugs averaged only 0.5 percent for 1993-1998, following a period (1982-1993) of 5.3 percent average growth.

The increase in the number of prescriptions filled is attributed to several factors. These include increased coverage by third-party payers, the growth of managed care, improved drug therapies, direct marketing to consumers, a change in Medicare rules, and lower out-of-pocket costs. In some instances, drug therapies have been substituted for other types of medical services. For example, under certain circumstances, it may be possible to substitute antidepressant drugs for more expensive psychotherapy or an inpatient hospital stay.

### **Figure 3**

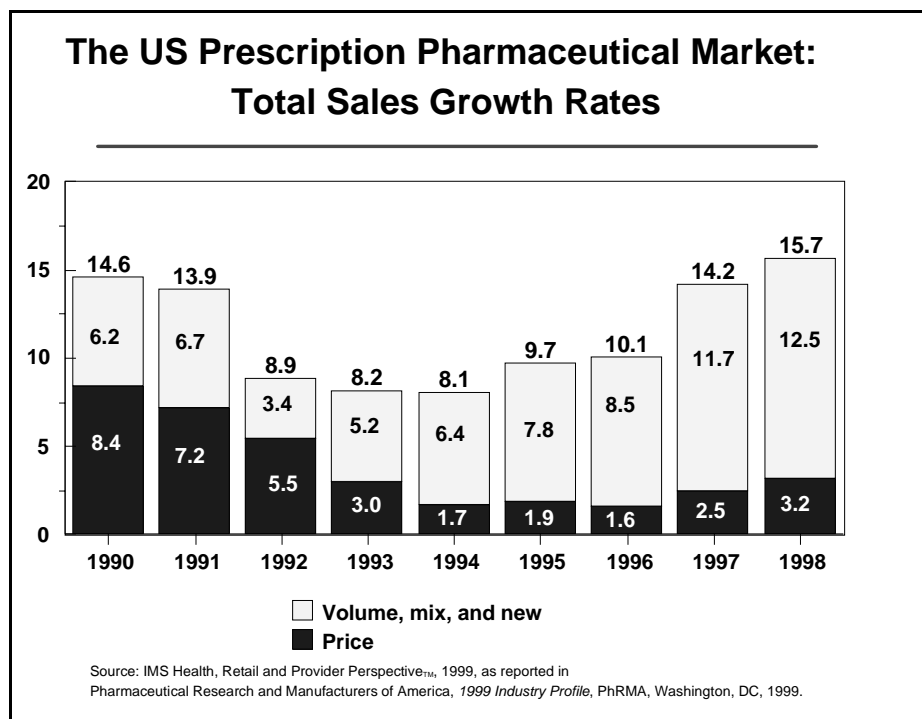
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<sup>44</sup>Braden et al., 1998, op. cit.

<sup>45</sup>Ibid.

<sup>46</sup>IMS Health, Retail and Provider Perspectives<sup>TM</sup>, 1999, as reported in Pharmaceutical Research and Manufacturers of America, 1999 Industry Profile, PhRMA, Washington, D.C., 1999.

<sup>47</sup>C. Copeland, EBRI Issue Brief No. 208, April 1999.

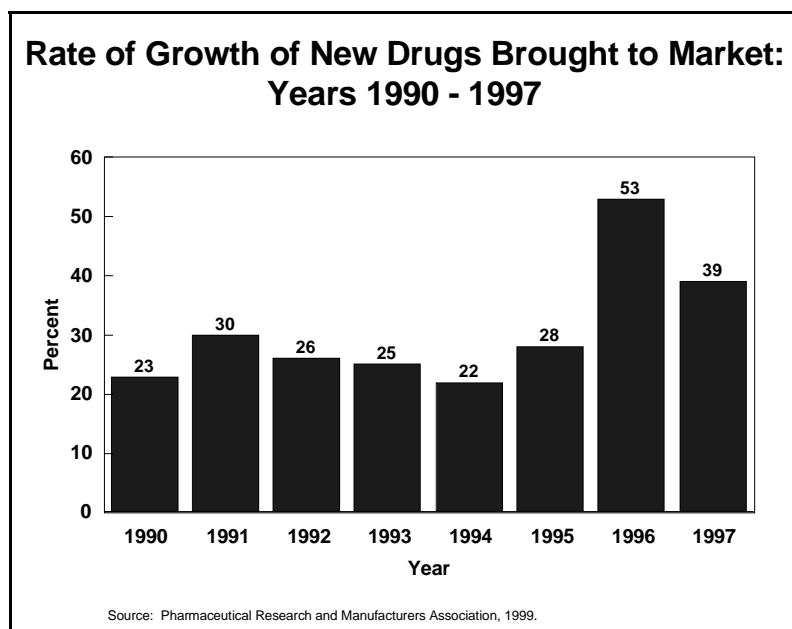


Also responsible for the recent growth in prescriptions is the response by both consumers and health plans to slower growth in consumers' out-of-pocket payments for drugs which has clearly played a role in the recent rise in utilization. In addition to slower drug price inflation, growth in out-of-pocket expenditures has been low since 1993, which reflects the shift to managed care, in which copayments for drugs tend to be much lower.

The number of new medications brought to market has also increased (Figure 4). During 1997, the Food and Drug Administration approved 39 new drugs, second only to the 53 new drugs introduced in 1996.<sup>48</sup> Typically, new drugs are introduced at higher prices than existing drugs. However, new expensive medications such as recently introduced protease inhibitors, asthma medications, and schizophrenia drugs may shorten episodes of illness, or avoid hospital stays and other costly medical procedures, and speed recovery. Conversely, many drugs developed during the 1970s and 1980s are approaching the ends of their patents and less expensive, generic alternatives may soon be available. Thus, the number of patent expirations could counterbalance pharmaceutical price increases and total prescription drug expenditures.

**Figure 4**

<sup>48</sup>Braden et al., 1998, op. cit.



Payments by insurance companies for prescription drugs have increased substantially. Third-party coverage for drugs increases the likelihood that patients will fill prescriptions. Drug benefits among private insurers have risen from 5.4 percent of premiums in 1990 to 11.4 percent in 1997. For Medicaid, prescription drug spending increased from 6.7 percent to 8.3 percent of total program payments.<sup>49</sup> Within managed care plans, drug expenditures have risen substantially since 1993. Increases in drug expenses are one of the biggest factors resulting in sluggish HMO earnings. In 1996, while drugs accounted for approximately 10 percent of HMO medical budgets, they accounted for half of their cost increases.<sup>50,51</sup> Thus, increased third-party coverage along with the switch to managed care has contributed to the recent rise in prescription drug expenditures.

To date, insurers and other payers have been reluctant to implement aggressive cost containment measures for fear of triggering adverse clinical outcomes and a backlash among patients. However, curbs on utilization may increase in the future. Efforts to contain the rise in drug expenditures could take several forms, including contraction of benefits through use of restricted formularies, increased substitution of generics for brand names, prior authorization and retrospective review, higher deductibles and copayments, etc. This may have important effects on Medicare managed care plans who often promote prescription drug benefits as a way to entice beneficiaries to enroll. On the other hand, as was mentioned previously, drug therapies may offset more expensive hospitalizations and medical procedures.

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<sup>49</sup>Levit et al., National Health Expenditures in 1997: More Slow Growth, *Health Affairs*, 17(6), November/December 1998.

<sup>50</sup>Levit et al. National Health Expenditures, 1996, *Health Care Financing Review*, 19(1), Fall 1997.

<sup>51</sup>Smith et. al., 1998, op. cit.

The structure of the prescription drug marketplace in 1998 is illustrated in Figure 5. Retail outlets dominate prescription drug sales. Chain drug stores and independent pharmacies accounted for nearly half (48.8 percent) of all prescription drug sales. Together with mail order (10.8 percent), food stores (8.2 percent), and mass merchandisers (7.4 percent), retail outlets account for three-fourths of all prescription drug sales. Institutional providers, primarily hospitals, clinics, and nursing homes, account for the other quarter.

**Figure 5**

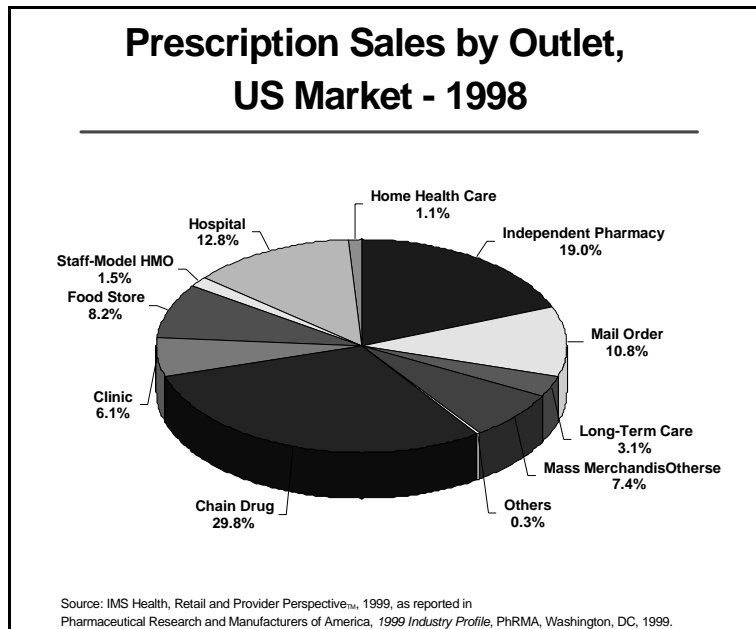
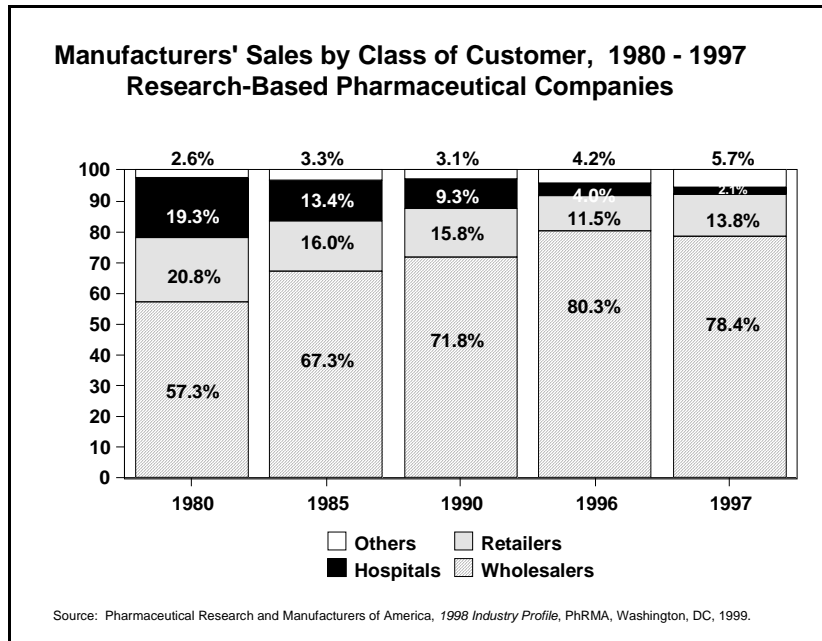


Figure 6 shows the distribution of manufacturers' prescription drug sales by class of customer. In 1980, 57.3 percent of all sales were to wholesalers, 21 percent to retailers, 19 percent to hospitals, and about 3 percent to others. By 1997, the proportion of sales to wholesalers had increased significantly, to nearly 80 percent, while direct sales to hospitals and retailers had declined although, between 1996 and 1997, sales to hospitals did increase slightly. Sales to other customers have more than doubled, although they account for only about 6 percent of total sales. Therefore, over time, both the dollar volume and the proportion of pharmaceutical sales channeled through GPOs has increased.

**Figure 6**



## **Breakthrough Drugs**

In recent years, great strides have been made in the diagnosis and treatment of many medical conditions. Much progress is occurring in the development of new drugs and therapies for the treatment of many diseases. New “lifesaving” drugs are continually reaching the marketplace. However, tremendous amounts of effort and huge costs are being incurred in the search for new cures and methods to treat different disease states (Table 10). When new breakthroughs do occur, they are, therefore, often accompanied by high development costs. Thus, while the introduction of new drugs and therapies will often result in many positive outcomes, the high costs of these new pharmaceuticals will inevitably contribute to a more rapid rise in pharmaceutical expenditures. New breakthroughs in drug and other therapies may, therefore, result in higher medical care inflation than has been experienced over the past few years.<sup>52</sup>

<sup>52</sup>Watson Wyatt Worldwide, Medical Inflation to Hit Double Digits in 1999, June 1, 1998.

**Table 10**  
**Prevalence, Cost and Medicines in Development for**  
**Selected Major Diseases in the United States**

Uncured Disease	Approximate Prevalence	Approximate Annual Economic Cost (\$billions)	Number** of Medicines in Development	Source
Alzheimer's Disease	4,000,000	\$100.0	17	National Institute on Aging
Arthritis	40,000,000	\$54.6	28	Arthritis Foundation
Asthma	14,000,000	\$6.2	17	National Heart, Lung, and Blood Institute
Cancer	8,000,000	\$107.0	316	American Cancer Society
Congestive Heart Failure	4,900,000	\$20.2	17	American Heart Association
Coronary Heart Disease	13,900,000	\$95.6	38	American Heart Association
Depression	17,600,000	\$53.0	13	National Institute of Mental Health
Diabetes	15,700,000	\$98.2	21	National Institute of Diabetes and Digestive and Kidney Diseases
Hypertensive Disease	50,000,000	\$31.7	10*	American Heart Association
Osteoporosis	10,000,000	\$13.8	27	National Osteoporosis Foundation
Schizophrenia	1,500,000	\$23.0	12	National Institute of Mental Health
Stroke	4,000,000	\$43.3	22	American Heart Association

\* Hypertension Medicines

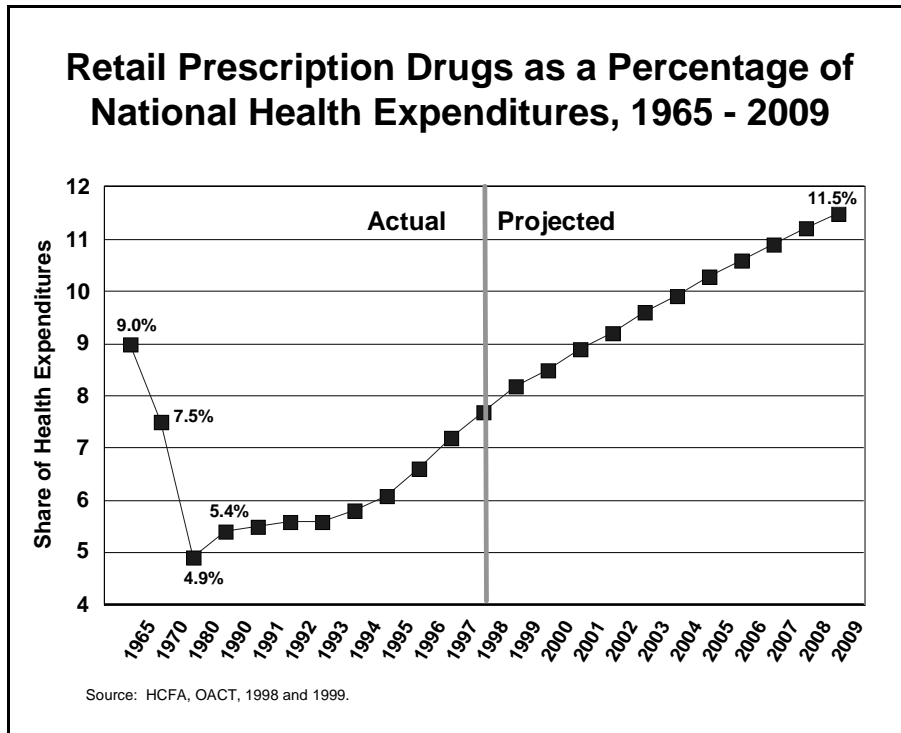
\*\* PhRMA data

Pharmaceutical Research and Manufacturers of America, 1999 Industry Profile, PhRMA, Washington, DC, 1999.

### Projections of Pharmaceutical Spending

We and HCFA believe that the growth in drug spending will accelerate moderately through 2000 and sustain fairly rapid rates of growth through 2009. While drug prices are projected to accelerate from recent lows, average inflation rates are assumed to remain below the exceptionally rapid pace of the 1980s, with excess drug price inflation averaging 1.0 percent for 1999-2009. Rapid growth in use and intensity are expected to continue to account for most of the growth in spending. This will lead to an increase in the proportion of national health expenditures that retail prescription drugs will represent as is shown in Figure 7.

Figure 7



# P ROJECTIONS

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The foregoing sections have detailed the nature, scope, and trends in the health care sector over the recent past and presented projections from CBO and HCFA, where available. These sections examined overall historic trends and changes in population, price, and utilization, wherever possible. This section:

- Recasts the earlier trends into a framework appropriate for projecting trends for the next ten years;
- Elaborates on the model presented earlier in a manner suitable to projecting the next decade; and
- Pulls together the data presented in the earlier sections and restates the projections for the hospital inpatient, outpatient, and nursing home subsectors. The projection of pharmaceuticals was touched on in the preceding section.

The methodology and descriptions used in this section rely heavily on similar models that have been developed by the two Federal organizations that have responsibilities for projecting health care spending -- the Congressional Budget Office and the Office of the Actuary in HCFA. Their models and assumptions differ slightly. As HCFA points out in their projections:

“These projection are generated within a model framework that incorporates actuarial, economic, and judgmental factors.”<sup>53</sup>

CBO does not employ actuarial techniques. We have resolved the differences between CBO and HCFA using our professional judgment for these projections.

## **A Framework for Projecting Expenditures**

The first step in projecting the future GPO marketplace is projecting the growth of the health care sector. The retrospective growth in health care spending can be divided into five distinct periods:

- 1965 to 1983, when health care spending grew largely unencumbered by policy or financing constraints;

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<sup>53</sup> Smith et al., 1998, op. cit.

- 1983 to 1987, when government and private cost containment efforts temporarily reduced the growth of health spending (especially for costly inpatient hospital stays) and the number of uninsured people increased significantly;
- 1987 to 1990, when more rapid growth of expenditures resumed;
- 1990 to 1993, a time of mild recession; and
- 1993 to 1999, a period of solid economic growth.

The factors driving the growth of health care spending in each of these periods differs significantly, as shown by the analysis presented later in this section.

The prospective projections we present are divided into two periods:

- 2000 to 2001, a time where we and others project a period of significant slowdown in health care expenditures; and
- 2002 to 2009, a period of assumed relatively stable economic growth and growth in health care expenditures.

## **Projection Methodology**

The CBO and HCFA projection methodologies are similar in that they use HCFA's accounting framework for national health expenditures. The methodology is actuarial rather than econometric, consisting of series of identities, the elements of which are projected and reconciled. It explicitly takes into account the effect of changes in the demographic (age and sex) composition of the population on the use of health services per person and on the complexity or intensity of the services provided.

Each type of personal health care spending – spending that is directly related to patient care – is broken down into factors that account for its growth. These factors are projected into the future based on analysis of current trends, judgements about patients' demands for services, and the consequent demands of providers for payment. Because some types of health spending may complement or substitute for other types of spending, the projection factors are reconciled among themselves to ensure consistent patterns of use and expenditure among types of health services. Finally, the projection of expenditures for each service are matched with projected sources of health care financing.

## **Growth Factors in Health Spending**

The factors accounting for the growth in spending on health care are population change, the demographic composition of the population, trends in the per capita use of basic health care

services (i.e., hospital days and physician visits), overall inflation rates, and trends in the relative prices of health services. Intensity of service is understood to express the growth in expenditures associated with additional health services per basic unit use and with advancing technologies and sophistication of health services. The tables presented later in this section show the relative contributions of population growth, change in demographic composition, growth in basic use of services, inflation, and the combined contributions of increases in the relative price and of the intensity of health care services to the projected rise in personal health spending for the subsectors relevant to GPOs.

### Demographics

Shifts in the size and composition of the population, including the increase in the proportion of the elderly, will add only modestly to the growth of health spending over the next decade. Population growth alone accounts for just 0.8 percentage points per year of the 8.7 percent average annual growth in personal health spending between 1990 and 2000. Although older people use a disproportionate amount of health care services, the aging character of the population adds an average increase of only about 0.5 percent per year to the growth of personal health spending.<sup>54</sup>

The aging of the baby-boom generation will probably add upward pressure to health spending after 2000, but even at its peak, just before 2030, changes in demographic composition are expected to add less than 1 percentage point to the annual growth rate of health spending.<sup>55</sup> The share of the population 65 years old and older has been growing steadily, but this growth will slow during the 1990s. Fewer children were born during the Great Depression of the 1930s and the 1940-1945 war years, and this accounts for a short-term slowdown in the number of people reaching retirement age in this decade. The baby-boom generation, born between World War II and about 1965, will begin reaching retirement age after 2010, and the population over age 65 will then increase sharply. Within the over-65 population, the share of people over 85 will continue to increase during the 1990s – leading to pressures for increased use of nursing homes.

### Use of Basic Services

The number of basic health services used per person, such as the number of hospital days or physician visits, is also projected to grow relatively slowly in the first decade of the 21<sup>st</sup> century. Rapid increases in hospital outpatient visits will be largely offset by declines in inpatient (overnight) stays, if current trends continue. The number of times a person visits a physician will increase by less than 1 percent per year, and dental visits are expected to increase slowly, especially in the later years of the projection. Increases in use of basic services per person have not driven rapid health spending growth in the past, and despite the assumption that modest growth in basic hospital and physician contacts resumes, use per person is not the key factor

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<sup>54</sup>CBO historical baseline, February 1999.

<sup>55</sup>Ibid.

accounting for increasing health spending.

### Price and Intensity Increases

The primary factors behind rapid growth of health spending are higher than average price increases received by health care providers and rapid growth in intensity per unit of service, based on extra services provided per basic unit of use and on the introduction of technologies and treatments that lead to increases in spending.

Unfortunately, health prices are difficult to measure and interpret. The statistics do not allow higher charges resulting from increased intensity to be disentangled from increases in prices for identical procedures. Measured price indexes for health care may not account for new technologies or disconnected fees. Some evidence indicates that, when fees are strictly controlled, providers order more treatments and procedures for their patients and change their billing practices in ways that increase revenues in order to maintain income levels.

Despite measurement problems, the forces driving increasing health care spending are the combination of increasing prices, expensive new services and procedures, and additional services and procedures per medical contact. Assuming current policies and trends continue, rising prices and more expensive procedures will also be the rule in the late 1990s, and even more so through year 2009. It should be noted that price and intensity increases, after overall inflation, are measured with the GDP deflator.<sup>33</sup>

### Overall Health Care Sector Expenditure Projections

The sustained low growth in national health spending since 1993 is markedly different from the pattern of growth observed over the past thirty years. However, the outlook for the next few years is somewhat less propitious. Following five years of near-stability, health spending is expected to rise as a share of gross domestic product (GDP) beginning in 1998, climbing from 13.5 percent in 1997 to between 16-17 percent by 2009 (see Figure 1). National health spending will likely exceed \$2.3 trillion by 2009 (Table 5).

Growth in real per capita national health spending is estimated to have edged upward only slightly in 1998 and 1999, remaining near the low rate of increase experienced in 1997, the last year for which we have complete data. However, real per capita national health spending is projected to accelerate during the next decade. Recent stronger growth in real per capita income is expected to boost underlying demand for medical services, and higher medical inflation is expected to fuel increasing health spending growth. An anticipated slowdown in the growth of private-sector managed care enrollment and a pause in the downward trend for private health insurance coverage

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<sup>33</sup>The GDP deflator is not a measure of pure price inflation, since it does not hold constant the proportions of items purchased. But, for this application, the deflator is used because the differences between the GDP deflator and, more appropriate, fixed-weighted indexes are minor, and because of the GDP deflator facilities comparisons with HCFA's projection factors.

also are expected to contribute to an acceleration in health spending growth.

In a reversal of recent trends, the higher anticipated growth in real per capita national health spending will be driven almost entirely by rising expenditures in the private rather than the public sector. Growth in real per capita national health spending was projected to level out in 1997-1998 and then to slow through 2000. This follows a period of relatively rapid growth in real per capita public spending for the early to mid-1990s. Growth in aggregate real per capita national health spending is projected to be 3.4 percent over 1997-2007. This is below the average pace for 1970-1993, when real per capita health spending growth tended to cycle around a trend just below 5 percent, but well above the average of 1.5 percent for 1993-1996.

## **Hospital Expenditure Projections**

Because only HCFA separately projected inpatient and outpatient expenditures, the following projections rely heavily on their methodology. The assumptions used for growth are also drawn from HCFA.

For purposes of the hospital projections, there are two major subcategories of hospital spending: inpatient spending in community hospitals and outpatient spending in community hospitals. Community hospital inpatient and outpatient hospital spending make up 90 percent of total hospital spending and 95.3 percent of all non-Federal hospital spending. Federal hospitals account for an additional 6.4 percent and non-Federal, non-community hospitals make up the remainder. For purposes of our projections, we have eliminated Federal hospital spending because of its dependence on the whims of Congress. For those interested in this marketplace, our best guesstimate is that it will show no growth through year 2009. This is consistent with our earlier analysis of hospital spending, which is based on hospitals' total receipts and includes the value of drugs and durable goods paid for through hospital bills and the services of salaried hospital medical personnel.

### **Hospitals: Inpatient Care**

Spending for inpatient care at hospitals, which amounts to about two-thirds of total hospital expenditures, grows in HCFA's projection at an annual rate of 3.5 percent in the 1990s, from about \$180 billion in 1991 to \$266 billion in 2000. This growth reflects continuing reductions in inpatient use per person and continued strong growth in hospital prices and intensity of services provided. Inpatient use, measured by inpatient days per person, is projected to decline by 2.7 percent per year between 1992 and 2000, while price and intensity increases over and above general inflation grow by 6.4 percent. The aging of the population adds about one-half of one percentage point to the expected growth of inpatient spending each year.

Since the early 1980s, the number of inpatient hospital days per person has fallen in response to government and private-sector initiatives to reduce costs. Technological and procedural changes that allow outpatient treatment have made the decrease possible. The number of inpatient days

has decreased consistently since 1982 and is projected to continue declining through 2000, although at slower rates than during the last 10 years. Nationwide, the hospital occupancy rate fell from about 75 percent in 1982 to 58.7 percent in 1996, despite significant reductions in the number of beds available during the period. Most sources agree that occupancy rates have generally remained stable since 1996.

Based on current data, HCFA found that growth in spending for hospital services slowed in 1997 and 1998. The lower growth rate is attributable to a slowdown in hospital input price inflation (the measure of medical prices for the hospital sector) and in intensity of services provided per inpatient day. Utilization will be a positive factor for growth, as the rate of decline in inpatient days slows. A modest rebound in expenditures was expected for 1999 as input price inflation increases and the rate of decline in inpatient utilization continues to slow.

Growth in spending for hospital services will remain well below growth in aggregate national health spending throughout the projection interval. This is particularly the case for the period through 2001. Hospital spending share is expected to remain at approximately one-third of all spending on health services and supplies.

The primary explanation for the short-term decline in share is the expected effect on inpatient spending of multiple changes in Medicare reimbursement associated with provisions in the BBA. The combination of reductions in the growth of Medicare payment rates for hospital services and the effects of substituting ambulatory services for inpatient care, especially as Medicare beneficiaries move into managed care, will restrain Medicare hospital spending. For 1998-2000, Medicare spending for inpatient hospital services is expected to grow at the lowest rate in the program's history. Table 11 contains a summary of the growth factors behind the projections.

**Table 11**  
**Factors Accounting for Growth in Inpatient Hospital Expenditures**  
**(Average annual growth rate)**

	1965-1983	1983-1987	1987-1990	1990-1993	1993-1996	1996-2000	2000-2009
<b>Total Growth in Inpatient Hospital Expenditures</b>	15.3	5.6	8.4	8.4	8.3	4.2	4.7
<b>Factors Accounting for Growth</b>							
Population Increase	1.0	1.0	1.0	1.0	0.9	0.8	0.8
Demographic Composition	0.5	0.4	0.4	0.4	0.5	0.4	0.4
Use Per Person	0.0	-5.5	-2.4	-3.7	-2.5	-2.1	-2.0
GDP implicit price deflator	6.4	3.5	4.1	3.3	3.1	2.1	2.2
Other Price and Intensity	6.8	6.5	5.2	7.5	6.1	3.0	3.3

Source: CBO and Muse & Associates estimates

## Hospitals: Outpatient Services

Substantial increases in the number of outpatient hospital visits have coincided with declines in inpatient hospital days since the mid-1980s. As a result, total outpatient spending at community hospitals has continued to grow rapidly. Outpatient spending will grow at an average annual rate of 16 percent between 1992 and 2000, compared with 18 percent growth in 1991 and 1992. Outpatient visits per capita (measure of outpatient use) are expected to continue growing by almost 8 percent per year over the coming decade. Rapid technological change has allowed many procedures that previously required overnight stays to be accomplished on an outpatient basis.

Both HCFA and we expect growth in outpatient services to rise more slowly during the coming decade from its historically rapid pace, extending a deceleration trend that began in the mid-1990s (Table 12). Medicare's scheduled switch to a PPS for outpatient services will contribute to this slowdown. Table 12 contains a summary of the growth factors behind the projections.

**Table 12**  
**Factors Accounting for Growth in Outpatient Hospital Expenditures**  
**(Average annual growth rate)**

	1965-1983	1983-1987	1987-1990	1990-1993	1993-1996	1996-2000	2000-2009
<b>Total Growth in Outpatient Hospital Expenditures</b>	18.8	16.7	17.5	17.7	15.5	8.7	9.2
<b>Factors Accounting for Growth</b>							
Population Increase	1.0	1.0	1.0	1.0	0.9	0.8	0.8
Demographic Composition	0.1	0.1	0.1	0.2	0.2	0.2	0.2
Use Per Person	4.3	4.0	4.3	4.0	3.5	1.0	1.1
GDP implicit price deflator	6.4	3.5	4.1	3.3	3.1	2.1	2.2
Other Price and Intensity	5.9	7.2	7.0	8.3	7.0	4.4	4.6

Source: CBO and Muse & Associates estimates

## Nursing Home Expenditure Projections

CBO and HCFA project that spending for nursing home care will grow at a 10 percent annual rate in the 1990s, continuing its recent trend.<sup>34</sup> Table 13 shows the major factors accounting for the growth of nursing home spending.

In the future, the demand for nursing home and other types of long-term care is expected to rise. There are several reasons to anticipate an increase in the demand for such services. Total population is growing and people are living longer. The elderly population, the highest consumers of nursing home services, is growing rapidly. (The fastest growing segment of the

<sup>34</sup>The nursing home estimates include intermediate care facilities for the mentally retarded financed by the Medicaid program.

population is those over age 85.) The American Health Care Association (AHCA) estimates that two out of every five Americans will require nursing home care sometime in their lives.<sup>35</sup> Also, unlike earlier generations, today's families are geographically more scattered and more women are working outside the home. Often, it is not possible for other family members to serve as care givers for their elderly relatives. With the baby boom generation aging, the population requiring nursing home services is expected to grow exponentially over the next 15 to 20 years.

Projections of nursing home spending depend heavily on the projected sources of payment. In 1990, Medicaid paid for about 45 percent of all nursing home care. Consumers paid for another 45 percent out of pocket. Private health insurance and Medicare have paid for a very small portion of nursing home spending.

The aging of the population will have a strong impact on the demand for nursing home care, adding 1.4 percentage points of growth to the demand for nursing home days per person between 1992 and 2000. However, CBO projects that actual nursing home days per person per year will increase by only 1 percent a year, in part because the supply of nursing home beds is expected to grow less rapidly than the medical demand prompted by demographic changes. In the 1980s, the number of nursing home days per person increased barely at all, despite the demographic predictions of 1.4 percent growth a year. The nursing home occupancy rate is projected to continue at more than 90 percent of available beds through the foreseeable future, and the number of nursing home days will increase as fast as the availability of beds allows. States, which pay for a significant amount of nursing home care through Medicaid, have been reluctant to issue permits for new nursing home construction, a development that has helped limit the supply of nursing home beds.

Table 13 contains a summary of the growth factors behind our nursing home projections. Expenditure growth for nursing home care is expected to grow 4.3 percent on average (down from 5.8 percent for 1993-1996) during the 1996-2000 period. This slowdown is accounted for by the effects of slower growth in Medicaid expenditures and a sharp cutback in the rate of growth for Medicare spending after the introduction of prospective payment. The 1999 revisions of the BBA of 1997 restored little of these monies. The decline in public-sector funding is expected to be partially offset by an acceleration in private-sector funding, primarily from out-of-pocket expenditures.

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<sup>35</sup>American Health Care Association, Fifteen Key Questions About Long Term Care, September 1998.

**Table 13**  
**Factors Accounting for Growth in Nursing Home Expenditures**  
**(Average annual growth rate)**

	1965-1983	1983-1987	1987-1990	1990-1993	1993-1996	1996-2000	2000-2009
<b>Total Growth in Nursing Home Expenditures</b>	17.0	8.3	10.2	10.6	10.2	5.8	6.2
<b>Factors Accounting for Growth</b>							
Population Increase	1.0	1.0	1.0	1.0	0.9	0.8	0.8
Demographic Composition	2.0	1.4	1.2	1.3	1.4	1.4	1.5
Use Per Person	2.4	-1.1	-1.1	-0.3	-0.4	-0.5	-0.3
GDP implicit price deflator	6.4	3.5	4.1	3.3	3.1	2.1	2.2
Other Price and Intensity	4.2	3.3	4.7	5.0	4.8	1.9	1.9

Source: CBO and Muse & Associates estimates

(G:Higpa/GPOSSAVE/ApendixA)