

# “Big Pharma:” Mergers, Drug Costs and Health Caregiver Staffing Ratios

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Representative Dennis J. Kucinich (D-OH-10).

Representative Kucinich is the ranking member of the National Security subcommittee of the Government Reform Committee. He is a member of the Committee on Education and the Workforce. He is also Chairman of the Congressional Progressive Caucus. Representative Kucinich is in his third term.

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## **I. Executive Summary**

This study explores the relationship between patient access, merger and acquisition activity within the pharmaceutical industry and health caregiver staffing ratios. The study’s principal hypothesis may be stated as:

*Increasing volume and values of pharmaceutical mergers and acquisitions may impact drug prices and drug prices will strongly influence hospitals to reduce caregiver to patient staffing ratios – the national nursing shortage notwithstanding.*

This hypothesis is generated from the following scenario concerning pharmaceutical mergers and acquisitions and the ratio of staff to patients in the nation’s hospitals.

The recent wave of pharmaceutical mergers (1995-2000) has contributed to the corporate drug sector’s ability to raise prices on pharmaceutical preparations across the board. Those prices will financially impact drug distribution companies and Pharmacy Benefit Management (PBMs) corporations, HMOs and hospitals, some of whom are now struggling with declining revenues. HMOs will:

1. Begin to drop even more Medicare patients, since drug costs are a primary expense in caring for the those 65 and older, resulting in a reduction in access to care for one of the nation’s most vulnerable patient populations.
2. Require tighter price controls and reduced numbers of available drugs in their existing formularies
3. Pass what costs they can, including simply withholding payments, to hospitals with whom they contract.(1)

Hospitals may then respond by:

1. Increasing the spread between what they pay for drugs and what they charge for them
2. Trim labor costs via reduction of staff to patient ratios by:
  - Speedup
  - Layoffs
  - Both Speedup and Layoffs

The hospital response of combining layoffs with speedup programs – both of which are de-facto reductions in the effective ratio of caregivers to patients – may come at a time the industry itself has proclaimed to be a severe shortage of skilled caregivers, particularly among licensed nurses.(2).<sup>1</sup>

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<sup>1</sup> It may also be coincident when a number of states are considering mandating licensed nurse to patient ratios and one state has already done so. (98)

To our knowledge, to date no other systematic study exists which documents the interrelationships among patient access, (in the present instance, Medicare patients) corporate health care market share efforts conceptualized in terms of mergers and acquisitions and health caregiver staffing ratios.<sup>2</sup> For purposes of this study, it is useful to distinguish *expenses* from *costs*. Profits, mergers and acquisitions and concentrated executive compensation are costs. They are health care values that are not necessarily used to provide or enhance patient care. By way of contrast, expenses are those values that are used to provide or enhance patient care. The expense issue in particular has been a central concern of the industry, the federal government and most researchers. Yet, the conceptualization of “costs,” while seemingly self-evident, has not entered the mainstream of health care policy debate, and no previous study has categorized merger and acquisition figures *per se* as costs<sup>3</sup> – even though they account for billions of dollars in total health care spending each year.

### ***A. Hospital Survey Results: More Staffing Cuts on the Way***

#### **1. Survey Methodology**

In July of 2000, the office of Representative Dennis Kucinich conducted a hospital phone survey. Utilizing an *IHSP* supplied nationwide listing of more than 6000 hospitals detailing hospital name, location and telephone numbers, selected CEOs, CFOs, or Administrators of acute care hospitals across the country were called. The survey consisted of 5 questions<sup>4</sup>, two of which dealt with whether top level hospital administrators believed pharmaceutical mergers and acquisitions resulted in higher drug prices and that higher drug prices lead to further cuts in patient to staff ratios. The targeted hospital sample consisted of 100 hospitals delimited by population, state, and rural versus urban hospitals. Hospital selection criteria did not include mode of control by for-profit vs. not-for-profit status; however, this information was obtained. Government hospitals (including veterans’ hospitals) and specialty hospitals (children’s and psychiatric hospitals) were excluded from the targeted sample. The goal was to obtain a targeted sample of 100. Achieving that sample required calling 919 hospitals across the nation for an effective response rate of 11 percent. Only those calls that resulted in a conversation with the CEO, CFO, or other Administrator were included in the survey results. There was no follow up on calls where the CEO, CFO, or other Administrator was not available. Once a targeted sample of 100 was reached no more phone calls were made.

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<sup>2</sup> More recently (149) has conducted a study on the fiscal impacts of health care re-engineering efforts. His findings are mixed but there are indications that hospital re-engineering programs have had little impact on increasing hospital revenues.

<sup>3</sup> Corporate profits and executive compensation as well as executive stock holdings can also be considered as costs since both remove from the system value that could perhaps be utilized elsewhere in the provision of care as opposed to enhancing market share or as financial perks for a managerial elite within the industry.

<sup>4</sup> See Addenda for a copy of survey instrument.

As approximately 80% of the general population lives in an urban environment vs. 20% in a rural setting, (3) 80 hospitals were designated as urban and 20 were designated as rural. A hospital was designated urban if its address was located in a major city. Designation as a rural hospital consisted of a three-step process. First, the hospital could not be located in a city that was deemed by Representative Kucinich’s office to have “name recognition” immediately recognizable by the general public. Second, the hospital could not have more than 150 beds. Third, the state the hospital was located in had to have a low urban-rural ratio. So for a hospital to be considered rural for this study, the hospital could not be located in a recognizable city, had fewer than 150 beds, and was located in a relatively rural state.

Each state was allocated one hospital for approximately every four congressional districts in their state. Some states were combined to achieve a multiple of 4 congressional districts. For example, Kentucky and West Virginia were combined to achieve an even multiple of four congressional districts. The combinations generally were done with similar urban-rural ratios and geographical proximity, though Nebraska and Alaska were combined as they had similar urban-rural ratios.

## 2. Survey Results

The table below synthesizes the findings of the hospital survey administered by Representative Kucinich’s office with the assistance of the IHSP. The results are presented for both the national and regional levels.<sup>5</sup> The survey findings strongly corroborate the principal hypothesis of this study, that increasing volume and values of pharmaceutical mergers and acquisitions may impact drug prices and drug prices will strongly influence hospitals to reduce caregiver to patient staffing ratios – the national nursing shortage notwithstanding.

**Table 1 Percent Of Hospital Survey Respondents That Said That Pharmaceutical Mergers Lead To Higher Drug Prices And That Higher Drug Prices Would Pressure Them To Reduce Staff to Patient Ratios**

Location	Mergers Lead To Higher Drug Prices	Increased Drug Prices Lead To Staffing Cuts
Nationwide	66%	68%
Northeast	65%	59%
Midwest	58%	79%
South	70%	75%
Southeast	73%	64%
Southwest	67%	33%
West	67%	67%

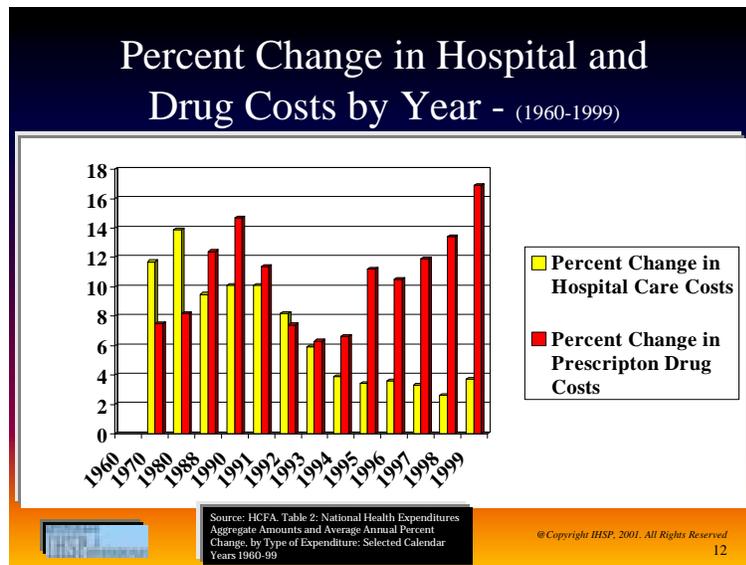
The responses are extraordinary - not so much in themselves - but because so many top level hospital executives were willing to publicly state that increases in drug prices may lead to the reduction of patient to staff ratios in the midst of a high profile political and economic quagmire nationwide focused on a nursing shortage that sees no foreseeable end in sight.

<sup>5</sup> See the hospital survey charts in the addenda for regional membership by state.

Fully 68% of respondents at the national level said that increased drug prices put current staffing ratios at risk. The responses are even more disconcerting in the Midwest and South – 79% of Midwestern respondents and 75% of Southern respondents indicated that staffing levels are at risk from increases in drug prices. In the Southeast, 64% indicated that staffing levels may be reduced and 73% stated that they believed pharmaceutical mergers and acquisitions lead to higher drug prices.

These assessments in isolation are worrisome. Taken in the current context of an **already** woefully inadequate caregiver staffing level, such assessments by high-level hospital administrators may portend a clear and present danger to the public health that the nation can ill afford to ignore.

Furthermore, the findings have both prospective and retrospective implications for caregiver staffing ratios. Prospectively, it is clear that the vast majority of respondents believe that continued merger and acquisition activity in the pharmaceutical sector drives up drug prices and places future staffing ratios at risk. One possible retrospective implication is that the significant increase in pharmaceutical mergers and their attendant rise in drug prices may have been significantly responsible in part for the hospital industry’s willingness to engage in the wholesale downsizing of its caregiver staff in the failed post-Clinton healthcare plan era. That possibility is made more plausible in light of the relative percent cost increase in drugs compared to hospital care since the mid 1990s as the below chart, “Percent Change in Hospital and Drug Costs by Year” indicates. If hospital executives currently feel that they may reduce staffing ratios due to increased drug prices, it seems a reasonable assumption that drug prices may have been a significant factor in **past** hospital industry decisions to layoff caregiver staff.



## ***B. Pharmaceutical Merger Costs: Economic and Medical***

Worldwide, pharmaceutical revenues and profits are imposing. Those publicly traded corporations that had net sales of one million or more for their most recent filing year numbered 413 and their net sales totaled more than \$411 billion and profits \$43.6 billion.<sup>6</sup> The United States accounts for the largest proportion of the world market for pharmaceuticals, or 34.5 percent.(4) In 2000, pharmaceutical sales in 13 key markets<sup>7</sup> grew an average of 10 percent(5) and the global market is expected to stay as profitable through 2004. (6)

Pharmaceutical companies are the most profitable business in America, according to Forbes magazine. The average compensation for 12-drug company CEOs in 1998 was \$22 million. (7) The industry was number one in return on revenues (18.5 percent), assets (16.6 percent), and equity (39.4 percent). (8) Profits were over three times greater than the average of all other industries. Huge tax benefits afforded to drug companies lowered their average effective tax rates nearly 40 percent relative to all other major US industries from 1990-1996.(7)

Within the drug industry, there has been significant growth in coordination and consolidation. Strategic alliances grew from 120 in 1986 to 635 in 1997.(9) Though there are hundreds of pharmaceutical companies, there are only 50 companies that control about two-thirds of the total world pharmaceutical market, (10) and the top 10 U.S. companies make up 39.5 percent of the domestic market.(6) In the pharmaceutical industry, between 1998 and 2000, 15 of the top 25 pharmaceutical companies publicly engaged in such merger negotiations; industry analysts believe that all 25 have negotiated privately.(11) In terms of market share, the newly merged GlaxoSmithKline is the largest, capturing about 7 percent of the world market.(12) Mergers and acquisitions have been increasingly profitable. The average market value of an acquired pharmaceutical company has risen three-fold since 1990.(12) While in 1989, the value of SmithKline and Beecham was \$8.9 billion,(12) the 2000 Warner Lambert/Pfizer deal was worth \$90.2 billion. (13)

All this merger activity is having extraordinary market impacts:

*Five of the 10 most powerful marketers in the industry recently merged. The list includes:*

- *GlaxoSmithKline, created in December 2000 when Glaxo Wellcome joined with SmithKline Beecham.*
- *Pfizer, which took over Warner-Lambert in June 2000.*
- *Pharmacia, formed by the union of Pharmacia & Upjohn and Searle in April 2000.*
- *AstraZeneca, created by the 1999 merger of Astra AB and Zeneca.*
- *Aventis, launched in 1999 through the union of Hoechst Marion Roussel and Rhone-Poulenc Rorer.*

*These five new entities accounted for more than 35 percent of all promotional spending by the pharmaceutical industry in 2000, according to Scott-Levin's marketing research audits. They also generated more than 30 percent of all retail sales, reports Scott-Levin's Source(TM) Prescription Audit.*

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<sup>6</sup> See Addenda Table, *Top Global Corporations Involved in Pharmaceutical Manufacturing by Net Sales*

<sup>7</sup> These 13 markets include: USA, Canada, Germany, France, Italy, UK, Spain, Japan, Brazil, Mexico, Australia/New Zealand and Argentina.

*Overall, the top 10 companies were responsible for 66 percent of the industry's promotional spending and 58 percent of retail prescription sales. (14)*

The volume and value of mergers and acquisitions in the industry as indicated in the below table has been significant. From 1993 through the first quarter of 2001, the costs of such mergers in year 2000 dollars is about \$270,000,000,000. That figure, however, includes only 227 transactions that have publicly announced prices out of a total of 351 publicly announced transactions.

**Table 2 Pharmaceutical Merger and Acquisition Costs: 1993 to the Present<sup>8</sup>**

<b>Year</b>	<b>Number Of Transactions</b>	<b>Number With Price Present</b>	<b>Price in Year of Transaction</b>	<b>PRICE IN YEAR 2000 DOLLARS</b>
1993	11	8	\$6,116,950,000	\$7,289,541,801
1994	38	35	\$3,425,524,420	\$3,980,265,217
1995	23	23	\$606,355,000	\$ 685,133,406
1996	53	29	\$2,279,096,130	\$2,501,340,685
1997	69	41	\$2,733,946,850	\$2,933,243,909
1998	53	25	\$13,039,017,111	\$13,774,961,638
1999*	27	14	\$39,273,722,500	\$40,593,847,611
2000*	63	46	\$184,965,626,306	\$184,965,626,306
2001 (January-March)*	11	6	\$13,727,900,000	\$13,243,385,878
Year and Price Missing	3	0		
<b>Total</b>	<b>351</b>	<b>227</b>	<b>\$266,168,138,317</b>	<b>\$269,967,346,450</b>

A number of observations are in order concerning the above table. First, it is critical to note that the total cost of about \$270 billion is an **extremely** conservative figure. This is due to the fact that of the 351 total transactions, only 227 or about 65% of them had publicly announced prices. The price of the other 124 transactions or 35% of the total transactions is unknown. We believe that imputing a price to them through any statistical technique is methodologically risky given the limitations of the available data elements for those transactions. A simple averaging of transactions costs would imply another \$100 billion should be added to the \$270 billion total. The median cost of the transactions would also add substantially to the total costs, but here, too, we feel that the discrepancies between the largest and smallest transactions are so great as to render the median approach no better than a simple averaging. A more fruitful approach would be to consider the relative market share of the pre-merging firms, their product mix and disaggregated share of each facet of that mix, their overall debt structuration, and other relevant data elements; however, that approach is rendered intractably problematic due to the lack of availability of these data elements for all firms.

In addition we should note the following concerning these transactions:

<sup>8</sup> Source: IHSP calculations of Levin & Associates Database and Publicly Available Data.

- Total Number of Transactions 351<sup>9</sup>
- Number of Acquiring Companies 139
- Top 10% (14) of Purchasers accounted for 53 % of transactions
- One Firm (Omnicare, Inc of Ohio) accounted for 18% of transactions
- Top 5 firms accounted for 40% of transactions
- Top 10 firms accounted for 48% of transactions
- Top 20 Firms accounted for 59% of transactions

The relative impact of extremely large financial figures in everyday lived experience is often difficult to convey. The *IHSP* has therefore adopted what we call “Medical/Social Equivalencies” to better bridge the gap between enormous economic figures in the abstract and their impact on the everyday health concerns of the nation’s population. Below are a few of those “Medical/Social Equivalencies:”

The nearly \$270 billion in pharmaceutical merger and acquisition costs is an amount sufficient to fund the following “Medical Equivalencies”:<sup>10</sup>

- Of the 5,270 U.S. hospitals that filed Medicare Cost Reports<sup>11</sup> in either 1999 or 2000, there were 298,564,700 adjusted patient days at a median cost of \$1,296 per day for an adjusted total cost of about \$387 billion.
  - The \$270 billion in pharmaceutical mergers since 1993 would pay for about 70% of the national total costs per adjusted patient day at median rates, or 208,995,290 patient days.
  - The state of Ohio had a total of 12,149,968 adjusted patient days with a median rate of \$1,367 per day for an adjusted total cost of about \$16.6 billion, or only 6% of the \$270 billion in pharmaceutical mergers and acquisition costs. That \$270 billion is sufficient to pay for the state’s total hospital costs per adjusted patient day for a period of more than 16 years.
- Employ about 6.4 million full time Registered Nurses for one year at average national rates
- Employ the anticipated additional need of 450,000(15) Registered Nurses by the year 2008 for 12 years at an average salary of \$50,000 per year
- Or employ **all** Registered Nurses that worked in all the nation’s acute care facilities in 1998 (16) for a period of about nine years at current average pay rates<sup>12</sup>

### **1. Medicare Patients Left Stranded**

While public sector hospitals, who tend to have a greater proportion of poorer Medicare patients than private sectors hospitals, are disproportionately impacted by the reduction in Medicare payment rates, (17-25) the wider claim by the hospital and HMO industry alike that the Balanced Budget Act of 1997 mandated reduction in Medicare payments has been the principal cause for recent reduced profits is at best incorrect.

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<sup>9</sup> 3 transactions did not have date or price information.

<sup>10</sup> Source: *IHSP* calculations of Medicare Cost Report data for all U.S. hospitals most current filing year.

<sup>11</sup> Medicare Cost Report data, Thompson Financial.

<sup>12</sup> Figures are *IHSP* calculations of American Hospital Association data.

Numerous past reports document that Medicare HMOs tend to recruit the healthiest and wealthiest patients while Medicare fraud is in full swing.(26-29) However, currently (30-37), Medicare HMOs are deserting the Medicare market(38-42). According to the Health Care Financing Administration:

*Consistent with recent reports, in 2001, about 85 percent of current Medicare+Choice beneficiaries will be able to continue with their current Medicare HMO. Sixty-five Medicare+Choice HMOs chose not to renew their Medicare+Choice contracts and 53 reduced their service areas, affecting more than 934,000 Medicare beneficiaries. About 775,000 of the affected beneficiaries will be able to enroll in another Medicare HMO, if the HMO is accepting enrollees. About 17 percent or 159,000 of the remaining beneficiaries will be left with no Medicare+Choice HMO options, although some may choose to enroll in a private fee-for-service plan if one is available in their community. All beneficiaries who are affected by these nonrenewals may return to original fee-for-service Medicare.(43)*

The table below details some of the ongoing mass exodus of HMO plans from the Medicare market.

**Table 3 Summary of Medicare HMO market withdrawals effective January 1, 2001<sup>13</sup>**

<b>Parent Company</b>	<b>% Exiting</b>	<b>Summary</b>
<a href="#">Aetna</a>	53.9%	Exiting 11 states plus 23 counties in three additional states effecting 355,000 members. Remaining in selected markets in 5 states serving 304,000 members.
<a href="#">Cigna</a>	67.5%	Exiting 11 states with 104,000 members. Remaining in New Mexico and Arizona markets serving 50,000 members.
<a href="#">Foundation Health</a>	7.3%	Exiting 18 counties in AZ, CA, CT, NJ, NY and PA. with 19,000 members. Remaining in 36 counties in AZ, CA, CT, FL, NY and PA serving 240,000 members.
<a href="#">Humana</a>	16.2%	Exiting 45 counties with 84,000 members. Remaining in all 9 states in selected markets serving 434,000 members.
<a href="#">Oxford Health</a>	8.3%	Exiting eight New Jersey counties with 7,200 members. Remaining in New York and Connecticut and selected New Jersey markets serving 80,000 members.
<a href="#">PacifiCare</a>	2.7%	Exiting 15 counties in 5 states affecting more 26,600 members. Remaining in all states but Ohio ( 8 total ) serving 968,000 members.
<a href="#">United HealthCare</a>	14.1%	Exiting 21 counties affecting 56,000 members; remaining in 61 counties serving 340,000 members
Other Plans	NA	Anthem Blue Cross and Blue Shield of

<sup>13</sup> Source: Taken from: Managed Care On Line website: www.medicarehmo.com

Parent Company	% Exiting	Summary
(This is only a partial listing, that includes selected prominent plans)		Connecticut, AvMed Health Plan, CareFirst BlueCross BlueShield, Harvard Pilgrim, Kaiser Permanente, HealthGuard, Medica, Ochsner Health Plan, Premera Blue Cross, Providence Health Plans, Regence BlueShield, Sierra Health Services

HMOs’ stated reason for dropping so many Medicare patients is that the 1997 Balanced Budget Act mandated decrease in Medicare reimbursements require it.(44) However, given the below observations, that explanation seems to offer little in the way of clarifying HMO Medicare flight.

*In its 1997 report to Congress, ProPAC<sup>14</sup> recommended that hospital inpatient reimbursements under PPS (Medicare’s Prospective Payment System) be frozen in fiscal 1998. ProPAC made its recommendation primarily on the basis of its margin calculations, which showed that hospital PPS margins had topped 14% in fiscal 1997, the highest they had ever been.(45)*

Further, the inspector general of the Department of Health and Human Services has found:

*... many HMOs profit "excessively" from Medicare, because they bill the government for administrative costs attributable to their private commercial customers as well as their Medicare patients. In short, she said, HMOs have received "an unreasonable amount" from Medicare because their administrative costs were grossly and artificially inflated, by a total of \$3 billion to \$4 billion in the three years of financial reports that she reviewed.(46)*

More recently, the Medicare Payment Advisory Commission reported that:

*From 1992 through 1997, Medicare real cost per case declined every year, falling more than 3 percent in both 1994 and 1995... In 1998 and 1999, it increased minimally – 0.3 and 0.9 percent, respectively. In comparison, PPS length of stay declined from 1990 to 1997 at an average rate of 4.6 percent per year, and slowed to 2.4 percent in 1998 and 1.6 percent in 1999. Thus, large length of stay declines were associated with negative real cost growth through the mid-1990s, and smaller reductions in length of stay are associated with a slight increase in real cost per case in both 1998 and 1999. In aggregate, Medicare length of stay dropped more than 32 percent from 1990 through 1999, and Medicare real cost per case fell almost 1 percent.(47)*

In addition,

*A day before Congress gave hospitals at least \$11 billion in extra Medicare and Medicaid payments, a congressional advisory board said hospitals still enjoyed a 12% Medicare inpatient margin and a 5.9% overall Medicare profit margin last year.(48)*

<sup>14</sup> The Medicare Payment Advisory Commission (MedPac) is the successor to ProPac.

*Though hospitals continue to point the finger at Medicare as the chief culprit for their slump, MedPAC's analysis showed that private payers reduced the percentage of inpatient costs that they cover for their enrollees by 4 percentage points from 1997 to 1998. Medicare reduced its proportion of costs by only 1 percentage point during the same period.(49)*

MedPAC stresses the role of private payer cutbacks but does not emphasize the role that drug expenses may have in prompting those cutbacks and on hospital patient revenues - or more germane to this study - any impact such expenses may have on the ability – or willingness - of hospitals to attract and maintain adequate numbers of nursing staff, or any possible HMO response to such expenses in their contractual relationships with hospitals.

A multitude of explanatory costs/expenses has been put forward in the attempt to determine hospital cost control measures. A study of 17 Texas hospitals identified the following costs/expenses: physician practice patterns, medical technology, labor, supplies and drugs, case complexity, administration, information systems, medical professional liability, regulations and accreditation, and AIDS treatment.(50) The implication explored in this study is that HMO profits – and overall hospital profits - have in part declined not so much due to a reduction in Medicare payments, but due to drug costs, which accounted for about 44% of the 1999 increase in health costs - even more than the 32 percent increase attributable to the growth in physician spending - while hospital inpatient spending accounted for about 3 percent.(51)

*The trend in costs underlying private health insurance premiums generally determines the trend in premium costs over time. These costs rose by 6.6 percent in 1999, up from an average increase of 2.4 percent per year from 1993 to 1997.*

*The 1999 increase followed a pattern similar to prior years, with sharply higher spending for drugs and hospital outpatient services, but small or negative changes in hospital inpatient spending.*

- *Drug spending accounted for 44 percent of the 1999 cost increase. About one-third was due to higher drug prices, the rest to new drugs and increases in use of existing drugs.*
- *Hospital outpatient spending, which accounted for 21 percent of the increase, has grown at a consistently high rate throughout the 1990s, with annual per capita cost increases averaging around 8.5 percent.*

*Hospital inpatient spending accounted for only 3 percent of the increase, continuing the pattern of the last half-decade, during which per capita spending fell more often than it rose. (52)*

### ***C. Hospital Drug Charge to Cost Ratios: Coping with the High Price of Drugs***

Of the approximate 4,545 acute care only hospitals<sup>15</sup> whose most recent Medicare Cost Report filing was in 1999 or 2000, drug costs for patients (\$21,008,013,762) were only 29.3% of what hospitals charged patients for those same drugs (\$71,705,455,513) which is a net difference of \$50.7 billion for the time period.

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<sup>15</sup> Drug charges and costs analyses are limited to only acute care hospitals

Hospitals in the aggregate seem to be coping with the high cost of drugs by demanding substantial Drug Charge to Cost Ratios (DCCRs).

It is accepted business practice to express various expense/cost categories as costs as a fraction of charges. From a business perspective, such an approach is wholly appropriate. However, from a consumer perspective – patients, employers and insurers - it may make more sense to reverse that common practice and utilize charge to cost ratios instead. For example, our calculations show that the national average drug cost to charge ratio is .29 (costs÷charges). However, the charge to cost ratio, expressed as charges as a percent of costs, (charges ÷ costs x 100) is about 347.1%. That is, the charge is 347.1% of the actual cost. For purposes of this study, we constructed charge to cost ratios for all selected Medicare Cost Report categories.

However, the DCCR varies considerably from one type of hospital control to the other.

Corporate forms of control have by far the greatest DCCR while State, Other Not-for-Profit, City/County, County, District/Authority, City and State forms of control are all below the national average of 347%.

**Table 4 Hospital Type of Control with Averages of Selected Data Sorted by Drug Charge to Cost Ratio**

Control Name	Drugs Cost	Drugs Charge	Net Difference Drug Charges Less Costs	Drugs Charge To Cost Ratio	Drugs Cost Per Discharge	Drugs Charge Per Discharge	Value Of Drug Charge To Cost Decile
Corporation	\$3,698,076.35	\$20,089,771.14	\$16,391,694.79	531.1319	\$682.08	\$3,289.68	8.15
Partnership	\$2,684,583.04	\$10,370,283.42	\$7,685,700.38	399.7537	\$1,271.97	\$4,232.94	6.77
Individual	\$1,303,783.33	\$5,154,928.67	\$3,851,145.33	385.7547	\$403.27	\$1,648.60	7.33
Church	\$6,101,786.97	\$21,639,297.05	\$15,537,510.08	363.3123	\$676.03	\$2,226.77	5.89
National Averages	\$4,641,629.20	\$15,843,008.29	\$11,204,659.20	347.0679	\$703.19	\$2,223.25	5.50
Other Not-for- Profit	\$5,207,353.34	\$16,355,260.71	\$11,147,907.37	315.3338	\$682.33	\$2,025.73	5.00
City/County	\$2,789,834.93	\$9,211,399.01	\$6,429,267.15	312.8956	\$819.38	\$2,182.11	5.01
County	\$2,687,820.46	\$7,960,896.51	\$5,288,793.85	310.4253	\$693.23	\$1,911.40	5.00
Hospital District/Authority	\$2,481,065.10	\$8,555,244.41	\$6,074,179.31	295.4035	\$701.84	\$1,902.35	4.66
City	\$1,601,575.19	\$3,991,913.77	\$2,390,338.58	287.4463	\$580.50	\$1,533.50	4.68
State	\$16,949,033.80	\$38,801,831.12	\$21,852,797.32	208.6970	\$1,633.55	\$2,980.57	3.36

**D. Pharmaceutical Mergers and Drug Costs**

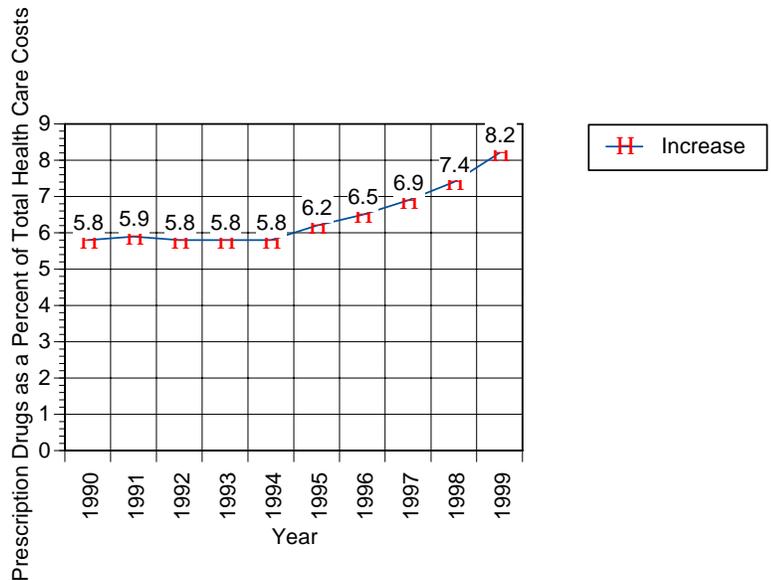
The table below depicts the percent of health care costs expended on prescription drugs for selected years. It is evident here that the rise in drug costs beginning in 1995 is closely associated with the rise in pharmaceutical merger and acquisition activity. Increases were fairly flat in the mid 1990’s, but began to climb in 1995 after the Sherman Anti-Trust Act was modified to allow the health care industry to achieve economies of scale in an ostensible effort to bring down total health care spending.

**Table 5 Percent of Total Health Care Costs<sup>16</sup> for Prescription Drugs: Selected Years(53)**

Year	1960	1970	1980	1988	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Percent	10.1	7.5	4.9	5.5	5.8	5.9	5.8	5.8	5.8	6.2	6.5	6.9	7.4	8.2

**Figure 1 Percent of Total Health Care Costs for Prescription Drugs, 1990-1999**

It is important to note, however, that the above increases do **not** include all drug costs and are therefore conservative figures.



*Expenditures for prescription drugs are limited to those purchased from retail outlets such as community or HMO pharmacies, grocery store pharmacies, mail order pharmacies, etc. The value of prescription drugs provided to patients by hospitals as part of a hospital stay, by nursing homes as part of care in a nursing home, or provided by physicians in their offices are not included in prescription drugs but are included in those respective expenditure categories. Consequently, the expenditures for prescription drugs shown here are underestimated and may differ from other estimates (e.g., prescription drug sales by manufacturers estimated by market research firms)(54)*

<sup>16</sup> IHSP calculations of HCFA data.

***E. Executive Summary Conclusion***

This study has demonstrated that there is an association between rising drug costs and the costs and volume of pharmaceutical mergers since 1993. Those costs have increased precipitously in the post 1994 Sherman Antitrust amendment era. Hospitals and HMOs have engaged in intense merger activity in the past few years, some of which is now beginning to taper off, but the expected economies of scale are not reflected in their financial filings. Those HMOs that have improved their finances have done so through increased premium rates and not via merger activity.

The national survey of hospitals indicates that the hospital industry considers escalating drug prices to be one consequence of large scale pharmaceutical corporation mergers and that further increases in drug prices may pressure hospitals to reduce caregiver staffing ratios in an already caregiver scarce environment.

The hospital industry principal means of coping with ever rising drug prices is to charge significant premiums over costs; however, the magnitude of those premiums vary by hospital mode of control.

## **II. Study Hypothesis**

This study is concerned with the relationship between patient access, merger and acquisition activity within the pharmaceutical industry and health caregiver staffing ratios. The study’s principal hypothesis may be stated as:

*Increasing volume and values of pharmaceutical mergers and acquisitions may impact drug prices and drug prices will strongly influence hospitals to reduce caregiver to patient staffing ratios – the national nursing shortage notwithstanding.*

This hypothesis is generated from the following scenario concerning pharmaceutical mergers and acquisitions and the ratio of staff to patients in the nation’s hospitals.

The recent wave of pharmaceutical mergers (1995-2000) has contributed to the corporate drug sector’s ability to raise prices on pharmaceutical preparations across the board. Those prices will financially impact drug distribution companies and Pharmacy Benefit Management (PBMs) corporations, HMOs and hospitals, some of whom are now struggling with declining revenues. HMOs will:

4. Begin to drop even more Medicare patients, since drug costs are a primary expense in caring for the those 65 and older, resulting in a reduction in access to care for one of the nation’s most vulnerable patient populations.
5. Require tighter price controls and reduced numbers of available drugs in their existing formularies
6. Pass what costs they can, including simply withholding payments, to hospitals with whom they contract.(1)

Hospitals may then respond by:

3. Increasing the spread between what they pay for drugs and what they charge for them
4. Trim labor costs via reduction of staff to patient ratios by:
  - Speedup
  - Layoffs
  - Both Speedup and Layoffs

The hospital response of combining layoffs with speedup programs – both of which are de-facto reductions in the effective ratio of caregivers to patients – may come at a time the industry itself has proclaimed to be a severe shortage of skilled caregivers, particularly among licensed nurses.(2).<sup>17</sup>

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<sup>17</sup> It may also be coincident when a number of states are considering mandating licensed nurse to patient ratios and one state has already done so. (98)

To our knowledge, to date no other systematic study exists which documents the interrelationships among patient access, (in the present instance, Medicare patients) corporate health care market share efforts conceptualized in terms of mergers and acquisitions and health caregiver staffing ratios.<sup>18</sup> For purposes of this study, it is useful to distinguish *expenses* from *costs*. Profits, mergers and acquisitions and concentrated executive compensation are costs. They are health care values that are not necessarily used to provide or enhance patient care. By way of contrast, expenses are those values that are used to provide or enhance patient care. The expense issue in particular has been a central concern of the industry, the federal government and most researchers. Yet, the conceptualization of “costs,” while seemingly self-evident, has not entered the mainstream of health care policy debate, and no previous study has categorized merger and acquisition figures *per se* as costs<sup>19</sup> – even though they account for billions of dollars in total health care spending each year.

### **III. Study Design**

#### ***A. Methodology: Hospital Survey***

In July of 2000, the office of Ohio Representative Dennis Kucinich conducted a hospital phone survey. Utilizing an *IHSP* supplied nationwide listing of more than 6000 hospitals detailing hospital name, location and telephone numbers, selected CEOs, CFOs, or Administrators of acute care hospitals across the country were called. The survey consisted of 5 questions<sup>20</sup>. The targeted hospital sample consisted of 100 hospitals delimited by population, state, and rural versus urban hospitals. Hospital selection criteria did not include mode of control by for-profit vs. not-for-profit status; however, this information was obtained. Government hospitals (including veterans hospitals) and specialty hospitals (children’s and psychiatric hospitals) were excluded from the targeted sample. The goal was to obtain a targeted sample of 100. Achieving that sample required calling 919 hospitals across the nation for an effective response rate of 11 percent. Only those calls that resulted in a conversation with the CEO, CFO, or other Administrator were included in the survey results. There was no follow up on calls where the CEO, CFO, or other Administrator was not available. Once a targeted sample of 100 was reached no more phone calls were made.

As approximately 80% of the general population lives in an urban environment vs. 20% in a rural setting, (3) 80 hospitals were designated as urban and 20 were designated as rural. A hospital was designated urban if its address was located in a major city. Designation as a rural hospital consisted of a three-step process. First, the hospital could not be located in a city that was deemed by Representative Kucinich’s office to have no “name recognition” by the general public as an urban city. Second, the hospital could not have more than 150 beds. Third, the state the hospital was located in had to have a low urban-rural ratio. Consequently, for a hospital to be considered rural for this study, the hospital could not be located in a recognizable city, had fewer than 150 beds, and was located in a relatively rural state.

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<sup>18</sup> More recently (149) has conducted a study on the fiscal impacts of health care re-engineering efforts. His findings are mixed but there are indications that hospital re-engineering programs have had little impact on increasing hospital revenues.

<sup>19</sup> Corporate profits and executive compensation as well as executive stock holdings can also be considered as costs since both remove from the system value that could perhaps be utilized elsewhere in the provision of care as opposed to enhancing market share or as financial perks for a managerial elite within the industry.

<sup>20</sup> See Addenda for a copy of survey instrument.

Each state was allocated a hospital for approximately every four congressional districts in their state. Some states were combined to achieve a multiple of 4 congressional districts. For example, Kentucky and West Virginia were combined to achieve an even multiple of four congressional districts. The combinations generally were done with similar urban-rural ratios and geographical proximity, though Nebraska and Alaska were combined as they had similar urban-rural ratios.

### ***B. Methodology: Financial Calculations***

The financial merger and acquisition data on the Pharmaceutical Sector, Hospital Sector, and the Health Maintenance Organizations sector (HMOs) were obtained from Irving Levin and Associates Company databases on Mergers and Acquisitions. The data covers 8 years, 1993 through 2001.<sup>21</sup> The databases are purported to contain the information on all publicly announced merger and acquisitions in the health care industry.

National hospital patient day data and costs per day were obtained from Medicare Cost Reports via Thompson Financial that were filed by hospitals whose latest filing year was in 1999 or 2000. The number of hospitals involved totaled 5,240. Hospital drug costs and drug charges to patients were also calculated from Medicare Cost Reports but were limited to acute care hospitals only. Their number totaled 4,545.

Our analysis proceeds as follows: On the national level, a total price was estimated based on imputed prices for those transactions where a price was not reported in the data for the Hospital and HMO sectors. There were no imputations calculated for the Pharmaceutical sector, as there were vast differences in the size of the deals. All prices were converted to 2000-dollar values based on the Consumer Price Index.<sup>22</sup>

The pharmaceutical data was obtained from the “Other” database. The “Other” database consists of those transactions within the health care industry that remain outside the main sectors (i.e. Hospital; HMOs; Long-Term Care; Labs, MRI, & Dialysis; Home Health Care; Psychological Behavioral Care; and Physician Medical Groups). To locate the pharmaceutical transactions a search was done using the terms, *drug*, *pharmaceutical*, and *pharm* in the data fields of Target, Target Description, Acquirer, and Acquirer Description. All transactions that contained these keywords were listed as part of the pharmaceutical sector. Beginning in 2000 the Irving Levin and Associates Company began to break the pharmaceutical sector into its own sector.

For the pharmaceutical sector only those transactions that contained a price were included in the tabulations. Transactions not containing a price were not included in tabulating the final total price. No imputations for transaction without price present were computed in the pharmaceutical sector, as there were vast differences in prices within the pharmaceutical sector.

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<sup>21</sup> Data for 2001 was limited to information for January and February.

<sup>22</sup> The Consumer Price Index was obtained from the Minneapolis Federal Reserve Bank’s website at <http://minneapolisfed.org/economy/calc/hist1913.html>

The total price for the hospital sector is an estimate of all transactions. A price was imputed for those transactions where a price was missing. In the hospital sector data there are two fields of interest: PRICE, indicates the price of the transaction involved and BEDS, indicates the number of beds involved in each transaction. In the database there is a large number of transactions in which no price is listed and a smaller number with no beds listed. To find the estimated total price a number of imputations were performed. To calculate the average price per bed per transaction we utilized those transactions with both price and beds present and took an average. The average number of beds per transaction was computed for all transaction with beds present. To find the total number of beds, we calculated the average number of beds per transaction and multiplied it by the number of transactions missing bed data and added this to the number of beds listed. To find the total price, we calculated the average price per bed and multiplied it by the total number of beds.

For the HMO sector the method is similar to the Hospital sector, but the HMO sector database contains enrollees as opposed to beds. The total price for the HMO sector is an estimate of all transactions. A price was imputed for those transactions where a price was missing. In the HMO sector data there are two fields of interest: PRICE, indicates the price of the transaction involved and ENROLLEES, indicates the number of covered lives involved in each transaction. In the database there is a large number of transactions in which no price is listed and a smaller number with no enrollees listed. To find the estimated total price a number of imputations were performed. To calculate the average price per enrollee per transaction we utilized those transactions with both price and enrollees present and took an average. The average number of beds per transaction was computed for all transactions with enrollees present. To find the total number of enrollees, we used the average number of enrollees per transaction and multiplied it by the number of transactions missing enrollees and added this to the number of enrollees listed. To find the total price, we employed the average price per enrollee and multiplied it by the total number of enrollees.

The revenue and expense tabulations for the HMO sector were based on information obtained from Thompson Financial. The data encompasses the last three years of data reported by the individual HMOs, with most reported data from 1997-1999. The latest year's data available is 1999. The variables of interest in this database consisted of Total Revenue, Total Expense, Current Year Total Membership, and Total Current Year Member Months.

### ***C. Hospital Survey Findings***

*“It’s the part of the budget that is breaking the bank,” said Dr. David A. Kessler, who headed the Food and Drug Administration before becoming dean of the Yale University School of Medicine. “Ask any hospital administrator, ask any HMO. Prescription drug prices is the one sector that is out of control.”(55)*

The table below synthesizes the findings of the hospital survey. The results are presented for both the national and regional levels.<sup>23</sup> The survey findings strongly corroborate the principal hypothesis of this study, that increasing volume and values of pharmaceutical mergers and acquisitions may impact drug prices and drug prices will strongly influence hospitals to reduce caregiver to patient staffing ratios – the national nursing shortage notwithstanding.

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<sup>23</sup> See the hospital survey charts in the addenda for regional membership by state.

**Table 6 Percent Of Hospital Survey Respondents That Said That Pharmaceutical Mergers Lead To Higher Drug Prices And That Higher Drug Prices Would Pressure Them To Reduce Staff to Patient Ratios**

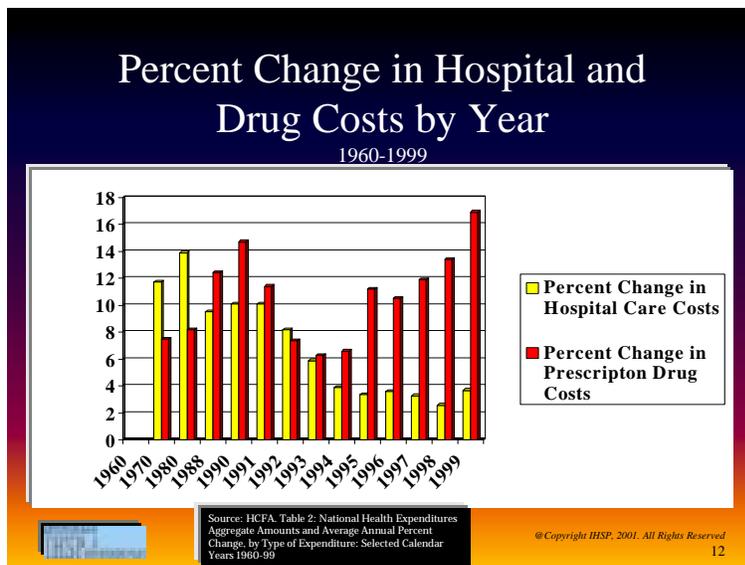
<b>Location</b>	<b>Mergers Lead To Higher Drug Prices</b>	<b>Increased Drug Prices Lead To Staffing Cuts</b>
Nationwide	66%	68%
Northeast	65%	59%
Midwest	58%	79%
South	70%	75%
Southeast	73%	64%
Southwest	67%	33%
West	67%	67%

The responses are extraordinary - not so much in themselves - but because so many top level hospital executives were willing to publicly state that increases in drug prices may lead to the reduction of patient to staff ratios in the midst of a nationwide nursing shortage that sees no foreseeable end in sight.

Fully 68% of respondents at the national level said that increased drug prices put current staffing ratios at risk. The responses are even more disconcerting in the Midwest and South – 79% of Midwestern respondents and 75% of Southern respondents indicated that staffing levels are at risk from increases in drug prices. In the Southeast, 64% indicated that staffing levels may be reduced and 73% stated that they believed pharmaceutical mergers and acquisitions lead to higher drug prices.

These assessments in isolation are worrisome. Taken in the current context of an **already** woefully inadequate caregiver staffing level, such assessments by high-level hospital administrators may portend a clear and present danger to the public health that the nation can ill afford to ignore.

Furthermore, the findings have both prospective and retrospective implications for caregiver staffing ratios. Prospectively, it is clear that the vast majority of respondents believe that continued merger and acquisition activity in the pharmaceutical sector drives up drug prices and places future staffing ratios at risk. One possible retrospective implication is that the significant increase in pharmaceutical mergers and their attendant rise in drug prices may be significantly responsible in part for the hospital industry’s willingness to engage in the management consultant industry recommendation of wholesale downsizing of its caregiver staff in the failed post-Clinton healthcare plan era. That possibility is made more plausible in light of the relative percent cost increase in drugs compared to hospital care since the mid 1990s as the chart, “Percent Change in Hospital and Drug Costs by Year” indicates. If hospital executives currently feel that they may reduce staffing ratios due to increased drug prices, it seems a reasonable assumption that drug prices may have been a significant factor in **past** hospital industry decisions to layoff caregiver staff.



#### IV. Background

##### A. Hospital Profits, the Balanced Budget Act and Medicare

It is true that hospital profits have been reduced in the past two most recent years and many hospitals are under financial duress:

*The aggregate hospital profit margin sunk to 4.7%, its lowest level since 1994, according to data from the AHA's annual statistical report....*

*The report, Hospital Statistics 2001, is considered the most reliable source of hospital financial data because it's based on a survey of all of the nation's hospitals, rather than a sample.*

*Significantly, 48.6% of hospitals reported profit margins of less than 3%, said Carmela Coyle, the AHA's senior vice president of policy. That compares with 42.2% reporting profits below that threshold in 1998.*

*Some 32.1% of hospitals lost money in 1999, compared with 26.6% that were in the red the previous year.*

*Hospitals with profit margins of less than 3% "don't have the financial resources they need to maintain their infrastructure and prepare for the future," Coyle said.*

*The figures confirm the grim financial news that's been suggested by a flush of studies and surveys by rating agencies, consulting firms and state hospital associations in recent months. Hospitals were hit hard by one of the lowest revenue increases in years in 1999, mainly because of Medicare<sup>24</sup> and Medicaid cutbacks from the Balanced Budget Act of 1997 and reduced payments from private insurers.(56)*

<sup>24</sup> We shall see later in this study that private payer cutbacks are considerably more substantial than Medicare rate reductions.

Hospitals also find themselves faced with a nursing shortage – in large part of their own making<sup>25</sup> - and hiring temporary nurses at premium prices. The reduced payments from private payers referenced above are in large part reductions from HMOs. Some hospitals in the attempt to boost sagging revenues are taking the once unthinkable step of suing insurers for delaying payments.(1) However, we should not lose sight of the fact that hospital profits in the aggregate have totaled about \$178 billion since 1986. (See Chart: U.S. Aggregated Hospital Profits, 1986-1999)

**Table 7 Hospital Profits 1986 through 1999 in Billions of U.S. Dollars: Total – \$178 Billion<sup>26</sup>**

<b>Year</b>	<b>Billions Of U.S. Dollars</b>
1986	\$7.90
1987	\$6.70
1988	\$5.80
1989	\$6.50
1990	\$8.20
1991	\$10.00
1992	\$11.90
1993	\$11.70
1994	\$13.80
1995	\$17.00
1996	\$21.30
1997	\$22.00
1998	\$19.50
1999	\$16.40

Those profits are costs that did not directly contribute to caring for the nation’s hospital patients; but a good part of those costs were used to enhance market share for for-profit and non-profit hospitals alike. Mergers and acquisitions from 1993 to the present have totaled about \$116.6 billion in year 2000 dollars. The sum of hospital profits since 1986 and merger and acquisition costs since 1993 is about \$294.6 billion. That amount is sufficient to:

- Pay for about 76% of the \$387 billion adjusted total costs of the approximate 298.6 million adjusted hospital patient days at median rates for 5,270 hospitals whose most recent Medicare Cost Report filing was in 1999 or 2000.
- Insure about 235,000,000 people for one year
  - Or all of the nation’s uninsured for about five and one half years
  - Or employ about 7,000,000 full time Registered Nurses at average rates for one year

**Table 8 U.S. Hospital Merger and Acquisition Costs (Year 2000 Dollars)**

<b>Year</b>	<b>Transactions</b>	<b>Transactions With Price Present</b>	<b>Year 2000 Dollars</b>
1991	2		
1992	2		

<sup>25</sup> See “The Nursing Shortage” section in this study.

<sup>26</sup> Source: American Hospital Association data.

Year	Transactions	Transactions With Price Present	Year 2000 Dollars
1993	43	24	\$18,624,893,167
1994	91	41	\$20,117,286,536
1995	128	45	\$19,592,618,408
1996	162	57	\$18,895,848,177
1997	197	61	\$14,094,471,049
1998	137	63	\$10,921,514,555
1999	110	61	\$7,868,272,465
2000	86	49	\$5,453,796,336
2001 Jan-Feb	16	8	\$ 987,885,154
<b>Totals</b>	<b>927</b>	<b>409</b>	<b>\$116,556,585,847</b>

Hospital profits had increased for years to record levels<sup>27</sup> and much of that increase was associated with reduced length of stay, with increased difficulty of access to a hospital bed to the extent that the Emergency Rooms of the nation’s hospitals had become a favored means of securing a bed.

### B. Medicare Reimbursement Rates and Provider Sector Finances

While public sector hospitals, which tend to have a greater proportion of poorer Medicare patients than private sector hospitals, are disproportionately impacted by the reduction in Medicare payment rates, (17-25) the wider claim by the hospital and HMO industry alike that the Balanced Budget Act of 1997 reduction in Medicare payments has been the principal cause for recent reduced profits is at best incorrect.

Numerous past reports document that Medicare HMOs tend to recruit the healthiest and wealthiest patients while Medicare fraud is in full swing.(26) (27) (28) (29) However, currently, Medicare HMOs are deserting the Medicare market. (30-42) According to the Health Care Financing Administration:

*Consistent with recent reports, in 2001, about 85 percent of current Medicare+Choice beneficiaries will be able to continue with their current Medicare HMO. Sixty-five Medicare+Choice HMOs chose not to renew their Medicare+Choice contracts and 53 reduced their service areas, affecting more than 934,000 Medicare beneficiaries. About 775,000 of the affected beneficiaries will be able to enroll in another Medicare HMO, if the HMO is accepting enrollees. About 17 percent or 159,000 of the remaining beneficiaries will be left with no Medicare+Choice HMO options, although some may choose to enroll in a private fee-for-service plan if one is available in their community. All beneficiaries who are affected by these nonrenewals may return to original fee-for-service Medicare.(43)*

The table below details some of the ongoing mass exodus of HMO plans from the Medicare market.

<sup>27</sup> See Table, Hospital Profits 1986 through 1999 in Billions of U.S. Dollars: Total - \$178 Billion

**Table 9 Summary of Medicare HMO market withdrawals effective January 1, 2001<sup>28</sup>**

Parent Company	% Exiting	Summary
<u>Aetna</u>	53.9%	Exiting 11 states plus 23 counties in three additional states effecting 355,000 members. Remaining in selected markets in 5 states serving 304,000 members.
<u>Cigna</u>	67.5%	Exiting 11 states with 104,000 members. Remaining in New Mexico and Arizona markets serving 50,000 members.
<u>Foundation Health</u>	7.3%	Exiting 18 counties in AZ, CA, CT, NJ, NY and PA. with 19,000 members. Remaining in 36 counties in AZ, CA, CT, FL, NY and PA serving 240,000 members.
<u>Humana</u>	16.2%	Exiting 45 counties with 84,000 members. Remaining in all 9 states in selected markets serving 434,000 members.
<u>Oxford Health</u>	8.3%	Exiting eight New Jersey counties with 7,200 members. Remaining in New York and Connecticut and selected New Jersey markets serving 80,000 members.
<u>PacifiCare</u>	2.7%	Exiting 15 counties in 5 states affecting more 26,600 members. Remaining in all states but Ohio ( 8 total ) serving 968,000 members.
<u>United HealthCare</u>	14.1%	Exiting 21 counties affecting 56,000 members; remaining in 61 counties serving 340,000 members
Other Plans (This is only a partial listing, that includes selected prominent plans)	NA	Anthem Blue Cross and Blue Shield of Connecticut, AvMed Health Plan, CareFirst BlueCross BlueShield, Harvard Pilgrim, Kaiser Permanente, HealthGuard, Medica, Ochsner Health Plan, Premera Blue Cross, Providence Health Plans, Regence BlueShield, Sierra Health Services

HMOs’ stated reason for dropping so many Medicare patients is that the 1997 Balanced Budget Act mandated decrease in Medicare reimbursements requires it.(44) However, given the below observations, that explanation seems to offer little in the way of clarifying HMO Medicare flight.

*In its 1997 report to Congress, ProPAC<sup>29</sup> recommended that hospital inpatient reimbursements under PPS (Medicare’s Prospective Payment System) be frozen in fiscal 1998. ProPAC made its recommendation primarily on the basis of its margin calculations, which showed that hospital PPS margins had topped 14% in fiscal 1997, the highest they had ever been.(45)*

Further, the inspector general of the Department of Health and Human Services has found:

<sup>28</sup> Source: Taken from: Managed Care On Line website: www.medicarehmo.com

<sup>29</sup> The Medicare Payment Advisory Commission (MedPac) is the successor to ProPac.

*... many HMOs profit "excessively" from Medicare, because they bill the government for administrative costs attributable to their private commercial customers as well as their Medicare patients. In short, she said, HMOs have received "an unreasonable amount" from Medicare because their administrative costs were grossly and artificially inflated, by a total of \$3 billion to \$4 billion in the three years of financial reports that she reviewed.(46)*

Most recently, the Medicare Payment Advisory Commission reports that:

*From 1992 through 1997, Medicare real cost per case declined every year, falling more than 3 percent in both 1994 and 1995... In 1998 and 1999, it increased minimally – 0.3 and 0.9 percent, respectively. In comparison, PPS length of stay declined from 1990 to 1997 at an average rate of 4.6 percent per year, and slowed to 2.4 percent in 1998 and 1.6 percent in 1999. Thus, large length of stay declines were associated with negative real cost growth through the mid-1990s, and smaller reductions in length of stay are associated with a slight increase in real cost per case in both 1998 and 1999. In aggregate, Medicare length of stay dropped more than 32 percent from 1990 through 1999, and Medicare real cost per case fell almost 1 percent.(47)*

In addition,

*A day before Congress gave hospitals at least \$11 billion in extra Medicare and Medicaid payments, a congressional advisory board said hospitals still enjoyed a 12% Medicare inpatient margin and a 5.9% overall Medicare profit margin last year.(48)*

*Though hospitals continue to point the finger at Medicare as the chief culprit for their slump, MedPAC's analysis showed that private payers reduced the percentage of inpatient costs that they cover for their enrollees by 4 percentage points from 1997 to 1998. Medicare reduced its proportion of costs by only 1 percentage point during the same period.(49)*

MedPAC stresses the role of private payer cutbacks but does not emphasize the role that drug expenses may have in prompting those cutbacks and on hospital patient revenues - or more germane to this study - any impact such expenses may have on the ability – or willingness - of hospitals to attract and maintain adequate numbers of nursing staff, or any possible HMO response to such expenses in their contractual relationships with hospitals.

A multitude of explanatory costs/expenses has been put forward in the attempt to determine hospital cost control measures. A study of 17 Texas hospitals identified the following costs/expenses: physician practice patterns, medical technology, labor, supplies and drugs, case complexity, administration, information systems, medical professional liability, regulations and accreditation, and AIDS treatment.(50) The implication explored in this study is that HMO profits – and overall hospital profits - have in part declined not so much due to a reduction in Medicare payments, but due to drug costs, which accounted for about 44% of the 1999 increase in health costs, - even more than the 32 percent increase attributable to the growth in physician spending - while hospital inpatient spending accounted for about 3 percent.(51)

*The trend in costs underlying private health insurance premiums generally determines the trend in premium costs over time. These costs rose by 6.6 percent in 1999, up from an average increase of 2.4 percent per year from 1993 to 1997.*

*The 1999 increase followed a pattern similar to prior years, with sharply higher spending for drugs and hospital outpatient services, but small or negative changes in hospital inpatient spending.*

- *Drug spending accounted for 44 percent of the 1999 cost increase. About one-third was due to higher drug prices, the rest to new drugs and increases in use of existing drugs.*
- *Hospital outpatient spending, which accounted for 21 percent of the increase, has grown at a consistently high rate throughout the 1990s, with annual per capita cost increases averaging around 8.5 percent.*
- *Hospital inpatient spending accounted for only 3 percent of the increase, continuing the pattern of the last half-decade, during which per capita spending fell more often than it rose. (52)*

### **C. Pharmaceutical Mergers and Acquisitions**

Worldwide, pharmaceutical revenues are imposing. Those publicly traded corporations that had net sales of one million or more for their most recent filing year numbered 413 and their net sales totaled more than \$411 billion and profits \$43.6 billion.<sup>30</sup> The United States accounts for the largest proportion of the world market for pharmaceuticals, or 34.5 percent.(4) In 2000, pharmaceutical sales in 13 key markets<sup>31</sup> grew an average of 10 percent(5) and the global market is expected to stay as profitable through 2004. (6)

Two *de-facto* pharmaceutical industry engineered policies contribute to the robust financial picture in the pharmaceutical market: the increase in drug prices in the United States and the increase in consumption. The increase in consumption is in good measure generated by the industry’s recent intense direct advertising in the mass media to artificially over stimulate and maximize demand beyond clinical efficacy.

*To stimulate the use of prescription drugs and, particularly, new therapies, manufacturers promote prescription drugs in several ways. The largest type of promotional spending is “detailing” (\$5.7 billion in 1998), where a company representative makes personal selling visits to physicians in offices and hospitals and leaves samples. **Direct-to-consumer advertising (\$1.3 billion in 1998) is a relatively recent phenomenon that has grown dramatically, with nearly a 5-fold increase in spending overall since 1994, and nearly a 20-fold increase for television advertising since 1994.** (emphasis added). Many of the products with the most direct-to-consumer advertising are also among the top prescription drugs by sales and by number of prescriptions dispensed.(57)*

Some of the impacts on drug prices due to the relatively new and intensive industry policy of heavy advertising is presented below:

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<sup>30</sup> See Addenda Table, *Top Global Corporations Involved in Pharmaceutical Manufacturing by Net Sales*

<sup>31</sup> These 13 markets include: USA, Canada, Germany, France, Italy, UK, Spain, Japan, Brazil, Mexico, Australia/New Zealand and Argentina.

*Spending on oral antihistamines such as Claritin\*, Zyrtec\*, and Allegra\* increased by 612 Percent between 1993 and 1998, representing 4.5 percent or \$1.9 billion of the total Increase in drug expenditures.*

*Spending on antidepressants such as Prozac\*, Zoloft, and Paxil increased by 240 percent between 1993 and 1998, representing 11.8 percent or \$5 billion of the total increase in drug expenditures over this time.*

*Spending on cholesterol-reducing drugs such as Lipitor, Zocor\*, and Pravachol\* increased by 194 percent between 1993 and 1998, representing 8 percent or \$3.4 billion of the total increase in drug expenditures.*

*Spending on anti-ulcerant drugs such as Prilosec\*, Prevacid, and Pepcid increased by 71 percent between 1993 and 1998, representing 6.4 percent or \$2.7 billion of the total increase in drug expenditures.*

*The 10 drugs most heavily advertised directly to consumers in 1998 accounted for \$9.3 billion or about 22 percent of the total increase in drug spending between 1993 and 1998.*

*In addition to the seven drugs identified above, these drugs also included Propecia (a hair-loss treatment), Evista (an osteoporosis drug), and Zyban (a smoking deterrent).*

*Many heavily advertised drugs, particularly antihistamines, antidepressants and cholesterol reducers, are likely to be used on an ongoing basis.*

*In 1998, pharmaceutical manufacturers spent \$8.3 billion promoting their products in the United States. About \$1.3 billion was spent on direct-to-consumer (DTC) advertising and \$7.0 billion on advertising and detailing to health care professionals. (Scott-Levin, “The Pharmaceutical Industry: More Reps and More Promotion Fuel New Launches,” press release, 18 June 1999. Accessed June 29, 1999, from [www.scottlevin.com](http://www.scottlevin.com)).*

*The makers of the antihistamines Claritin, Zyrtec, and Allegra spent \$313 million on DTC advertising for these products in 1998. Together, these three drugs accounted for 90 percent of sales of prescription antihistamines and 2 percent of total drug spending in that year.*

*Policy changes by the FDA, particularly a 1997 relaxation of guidelines for broadcast advertising, have allowed drug manufacturers to engage in much more extensive direct-to-consumer advertising. (58)*

Pharmaceutical companies enable these policies via mergers and acquisitions that ultimately reduce competition to keep prices high and create economies of scale to fund their intensive marketing/advertising operations. These de-facto policies in tandem with the ascendancy of managed care have given rise to Pharmacy Benefit Management corporations (PBMs).

The top 20 PBMs by prescription drug statistics and the top 10 PBMs by covered lives are depicted in the below tables:

**Table 10 Top 20 PBMs—First Quarter 1999<sup>32</sup>**

Rank	PBM	Number of Prescriptions Managed (in thousands)	Percent of all Prescriptions Covered by Third Party Payers	Percent of all Prescriptions Dispensed Through Retail Pharmacies
	Total	315,148	70.7	47.4
1	Merck-Medo Managed Care	71,574	16.1	10.8
2	PCS Health Systems#	68,503	15.4	10.3
3	Diversified Pharmaceutical* Services	38,368	8.6	5.8
4	Express Scripts/ValueRx*	23,822	5.3	3.4
5	Aetna Pharmacy Management	16,516	3.7	2.5
6	Advance Paradigm#	12,686	2.8	1.9
7	Wellpoint Pharmacy Management	12,367	2.8	1.9
8	RxPrime	9,572	2.2	1.4
9	Caremark Prescription Service	9,428	2.1	1.4
10	Prescription Solutions	8,766	2.0	1.3
11	National Prescription Service	7,882	1.8	1.2
12	ProVantage	6,071	1.4	0.9
13	MedImpact/Medcare	6,051	1.4	0.9
14	Prudential Pharmacy Management	5,384	1.2	0.8
15	Prime Therapeutics	3,954	0.9	0.6
16	Eagle Managed Care	3,769	0.9	0.6
17	Proserve	3,024	0.7	0.5
18	RxAmerica	2,860	0.6	0.4
19	PharmaCare Network	2,713	0.6	0.4
20	RESTAT	1,838	0.4	0.3

\*Express Scripts, Inc acquired Diversified Pharmaceutical Services in February, 1999.

#Advanced Paradigm acquired PCS Health Systems in October, 2000.

<sup>32</sup> Source: IMS America. Taken from “The Role of PBMs in Managing Drug Costs: Implications for a Medicare Drug Benefit,” The Henry J. Kaiser Family Foundation, January 2000, p. 8.

**Table 11 Top 10 PBMs by Lives Covered 1999<sup>33</sup>**

Name Of Pbm <sup>34</sup>	Lives Covered 1999	Lives Covered 2001
P C S Health Systems <sup>35</sup>	56,000,000	75,000,000
Merck-Medco Managed Care	51,000,000	65,000,000
Diversified Pharmaceutical Services*	23,900,000	
Express Scripts ValueR/X*	22,700,000	41,500,000
WellPoint Pharmacy Management	15,500,000	28,000,000
Integrated Pharmaceutical Services	14,000,000	NA
Advance Paradigm	13,000,000	
Medimpact Healthcare Systems	12,000,000	NA
Caremark - Prescription Service Div	10,000,000	20,000,000
First Health Services	8,000,000	12,000,000

Some analysts hold that the emergence of PBMs is one of the most significant developments of the recent managed care phenomenon:

*Perhaps the most significant change in the managed care revolution is the recent development of prescription drug benefit programs managed through PBMs. A PBM provides managed prescription drug programs to organizations such as managed care providers, corporations, labor unions, retirement systems, and federal and state employee plans (plan sponsors). PBMs typically select participating pharmacists and drug manufacturers and suppliers, create and administer a point-of-sale claims processing system, negotiate quantity discounts with pharmaceutical manufacturers, administer the record keeping and payments systems of the plans, and maintain quality control. A PBM typically acts as the agent for the plan sponsor to influence product selection —encouraging generic and therapeutic substitution based on negotiated prices with manufacturers. Additional services offered by a PBM may include drug utilization review, quality control, and mail order service. Over 135,000,000 Americans currently receive benefits from PBMs, and that number is expected to increase to 200,000,000 by the end of the decade.(59)*

The below table gives a more detailed rendering of the numbers of HMO enrollees whose prescription drug access is routed and controlled through a PBM.

<sup>33</sup> Source: *Drug Topics*, 1/18/99 and SMG Marketing Group Inc taken from the following website: <http://www2.interaccess.com/smg/wire.htm>

<sup>34</sup> \*Express Scripts, Inc acquired Diversified Pharmaceutical Services in February, 1999. Advanced Paradigm acquired PCS Health Systems in October, 2000. Information gathered from individual firm’s websites.

<sup>35</sup> New name is Advance PCS

**Table 12 Proportion of HMO Enrollees Served by a PBM<sup>36</sup>**

	Medicare Enrollment		Total Enrollment	
	Number	Percent	Number	Percent
HMOs using own PBM	2,119,824	37	14,720,058	15
HMOs using outside PBM	2,089,424	37	40,412,098	53
No PBM used	520,937	9	5,192,434	7
Not Reported	971,907	17	16,309,678	21
Total	5,702,292	100	76,634,268	100

Until relatively recently, there was an obvious move on the part of the pharmaceutical industry to vertically integrate PBMs as pharmaceutical companies began to purchase such firms. A PBM administers the prescription drug benefits of an HMO and maintains a list of “formularies,” or preferred drugs ostensibly based on medical value and price. If an HMO patient desires a drug that is not on the formulary list, that drug commands a substantial financial premium.

If manufacturers and PBMs are partners in the same company, this alliance combines access to competitors and information technology that could facilitate an information exchange between partners that could lead to price coordination. *Drug companies own or have alliances with PBMs that account for over 70 percent of all prescriptions processed by PBMs(9).* Also, numerous concerns have been raised about instances where PBMs have refused to include competitors’ drugs in formulary lists, called a “closed” formulary:<sup>37</sup>

***Merck/Medco**, No. C-3853 (consent order, Feb. 18, 1999). In Merck/Medco, the complaint alleged that Merck's ownership of Medco, a pharmacy benefits manager ("PBM"), would allow Merck to favor its own drugs on Medco's formularies. A PBM's formulary often affects drug choice and reimbursement under certain health plans. The consent agreement requires Merck/Medco to maintain an open formulary, whereby drugs are selected according to objective criteria by an independent panel of physicians, pharmacists, and others, known as a Pharmacy and Therapeutics Committee.*

***Eli Lilly/PCS**, C-3594 (July 28, 1995). The complaint alleged that Lilly's ownership of PCS, a pharmacy benefits manager ("PBM"), would allow Lilly to favor its own drugs on PCS's formularies. A PBM's formulary often affects drug choice and reimbursement under certain health plans. The consent agreement requires Lilly/PCS to maintain an open formulary, whereby drugs are selected according to objective criteria by an independent panel of physicians, pharmacists, and others, known as a Pharmacy and Therapeutics Committee. The Lilly Order was recently set aside because Lilly sold PCS to Rite Aid Corp. (60)*

Perhaps in part due to the above concerns - and the fact that there is some evidence that such alliances are not particularly profitable for pharmaceutical manufacturers(61) - Merck is currently the only pharmaceutical company that owns a PBM. That PBM is currently enjoying hefty revenue increases.

<sup>36</sup> Source: InterStudy 8.2, data from January 1, 1998. Taken from “The Role of PBMs in Managing Drug Costs: Implications for a Medicare Drug Benefit,” The Henry J. Kaiser Family Foundation, January 2000.

<sup>37</sup> Other studies by the Department of Health and Human Services and Public Advocate of the City of New York have also questioned anticompetitive effects of PBMs.

*Drug maker Merck & Co. posted a 10.5 percent increase in first-quarter profit, thanks to surging sales of six key medicines and a 51 percent revenue increase at its pharmacy benefit business, the company said Friday. Net income jumped to \$1.7 billion, or 71 cents per share, for the January-March period from \$1.5 billion, or 63 cents per share, in the first quarter of 2000.(62)*

## 1. Scope and Depth of Pharmaceutical Mergers and Acquisitions

Within the drug industry, there has been significant growth in coordination and consolidation. Strategic alliances grew from 120 in 1986 to 635 in 1997.(9) Though there are hundreds of pharmaceutical companies, there are only 50 companies that control about two-thirds of the total world pharmaceutical market, (10) and the top 10 U.S. companies make up 39.5 percent of the domestic market.(6) In the pharmaceutical industry, between 1998 and 2000, 15 of the top 25 pharmaceutical companies publicly engaged in such merger negotiations; industry analysts believe that all 25 have negotiated privately.(11) In terms of market share, the newly merged GlaxoSmithKline is the largest, capturing about 7 percent of the world market.(12) Mergers and acquisitions have been increasingly profitable. The average market value of an acquired pharmaceutical company has risen three-fold since 1990.(12) While in 1989, the value of SmithKline and Beecham was \$8.9 billion,(12) the 2000 Warner Lambert/Pfizer deal was worth \$90.2 billion. (13)

All this merger activity is having extraordinary market impacts:

*Five of the 10 most powerful marketers in the industry recently merged. The list includes:*

- *GlaxoSmithKline, created in December 2000 when Glaxo Wellcome joined with SmithKline Beecham.*
- *Pfizer, which took over Warner-Lambert in June 2000.*
- *Pharmacia, formed by the union of Pharmacia & Upjohn and Searle in April 2000.*
- *AstraZeneca, created by the 1999 merger of Astra AB and Zeneca.*
- *Aventis, launched in 1999 through the union of Hoechst Marion Roussel and Rhone-Poulenc Rorer.*

*These five new entities accounted for more than 35 percent of all promotional spending by the pharmaceutical industry in 2000, according to Scott-Levin's marketing research audits. They also generated more than 30 percent of all retail sales, reports Scott-Levin's Source(TM) Prescription Audit.*

*Overall, the top 10 companies were responsible for 66 percent of the industry's promotional spending and 58 percent of retail prescription sales. (14)*

The volume and value of mergers and acquisitions in the industry as indicated in the below table has been significant. From 1993 through the first quarter of 2001, the costs of such mergers in year 2000 dollars is about \$270,000,000,000. That figure, however, includes only 227 transactions that have publicly announced prices out of a total of 351 publicly announced transactions..

**Table 13 Pharmaceutical Merger and Acquisition Costs: 1993 to the Present.** <sup>38</sup>

Year	Number Of Transactions	Number With Price Present	Price In Year Of Transaction	Price In Year 2000 Dollars
1993	11	8	\$6,116,950,000	\$7,289,541,801
1994	38	35	\$3,425,524,420	\$3,980,265,217
1995	23	23	\$606,355,000	\$ 685,133,406
1996	53	29	\$2,279,096,130	\$2,501,340,685
1997	69	41	\$2,733,946,850	\$2,933,243,909
1998	53	25	\$13,039,017,111	\$13,774,961,638
1999*	27	14	\$39,273,722,500	\$40,593,847,611
2000*	63	46	\$184,965,626,306	\$184,965,626,306
2001 (January-March)*	11	6	\$13,727,900,000	\$13,243,385,878
Year and Price Missing	3	0		
<b>Totals</b>	<b>351</b>	<b>227</b>	<b>\$266,168,138,317</b>	<b>\$269,967,346,450</b>

A number of observations are in order concerning the above table. First, it is critical to note that the total cost of about \$270 billion is an **extremely** conservative figure. This is due to the fact that of the 351 total transactions, only 227 or about 65% of them had publicly announced prices. The price of the other 124 transactions or 35% of the total transactions is unknown and we believe that imputing a price to them through any statistical technique is methodologically risky given the limitations of the available data elements for those transactions. A simple averaging of transactions costs would imply another \$100 billion should be added to the \$270 billion total. The median cost of the transactions would also add substantially to the total costs, but here, too, we feel that the discrepancies between the largest and smallest transactions are so great as to render the median approach no better than a simple averaging. A more fruitful approach would be to consider the relative market share of the pre-merging firms, their product mix and disaggregated share of each facet of that mix, their overall debt structuration, and other relevant data elements; however, that approach is rendered intractably problematic due to the lack of availability of these data elements for all firms.

In addition we should note the following concerning these transactions:

- Total Number of Transactions 351<sup>39</sup>
- Number of Acquiring Companies 139
- Top 10% (14) of Purchasers accounted for 53 % of transactions
- One Firm (Omnicare, Inc of Ohio) accounted for 18% of transactions
- Top 5 firms accounted for 40% of transactions
- Top 10 firms accounted for 48% of transactions
- Top 20 Firms accounted for 59% of transactions

<sup>38</sup> Source: IHSP calculations of Levin & Associates Database and Publicly Available Data

<sup>39</sup> Three transactions did not have date or price information.

The relative impact of extremely large financial figures in everyday lived experience is often difficult to convey. The *IHSP* has therefore adopted what we call “Medical/Social Equivalencies” to better bridge the gap between enormous economic figures in the abstract and their impact on the everyday health concerns of the nation’s population. Below are a few of those “Medical/Social Equivalencies:”

The nearly \$270 billion in pharmaceutical merger and acquisition costs is an amount sufficient to fund the following “Medical Equivalencies”:<sup>40</sup>

- Of the 5,270 U.S. hospitals that filed Medicare Cost Reports<sup>41</sup> in either 1999 or 2000, there were 298,564,700 adjusted patient days at a median cost of \$1,296 per day for an adjusted total cost of about \$387 billion.
  - The \$270 billion in pharmaceutical mergers since 1993 would pay for about 70% of the national total costs per adjusted patient day at median rates, or 208,995,290 patient days.
  - The state of Ohio had a total of 12,149,968 adjusted patient days with a median rate of \$1,367 per day for an adjusted total cost of about \$16.6 billion, or only 6% of the \$270 billion in pharmaceutical mergers and acquisition costs. That \$270 billion is sufficient to pay for the state’s total hospital costs per adjusted patient day for a period of more than 16 years.
- Employ about 6.4 million full time Registered Nurses for one year at average national rates
  - Or employ the anticipated additional need of 450,000(15) Registered Nurses by the year 2008 for 12 years at an average salary of \$50,000 per year
  - Or employ **all** Registered Nurses that worked in all the nation’s acute care facilities in 1998 (16) for a period of about nine years at current average pay rates<sup>42</sup>

Given the preceding, the following concentration ratios should not only be unsurprising, but are the kinds of concentrations that should be expected in an industry that is clearly becoming cartel-like in the pricing of its product mix.

In 1998, only four Major Pharmaceutical firms accounted for about 21.9% of all pharmaceutical sales by major as opposed to Generic Pharmaceutical corporations and eight firms accounted for 38.7%.(57)

**Table 14 Market Concentration Among Major Pharmaceutical Manufacturers and Generic Pharmaceutical Manufacturers.,<sup>43</sup> 1998(57)**

Major Pharmaceutical Manufacturers 4 Firm Concentration Ratio	21.9%
Major Pharmaceutical Manufacturers 8 Firm Concentration Ratio	38.7%
Generic Pharmaceutical Manufacturers 4 Firm Concentration Ratio	30.1%
Generic Pharmaceutical Manufacturers 8 Firm Concentration Ratio	50.8%

<sup>40</sup> Source: *IHSP* calculations of Medicare Cost Report data for all U.S. hospitals most current filing year.

<sup>41</sup> Medicare Cost Report data, Thompson Financial.

<sup>42</sup> Figures are *IHSP* calculations of American Hospital Association data.

<sup>43</sup> Four firm and eight firm concentration ratios are the percentage of the market that the top four firms and the top eight firms represent. For major pharmaceutical manufacturers, the concentration ratios are based on the total U.S. prescriptions by firm. For generic pharmaceutical manufacturers, the concentration ratios are based on the total sales of generic drugs in the U.S.

However, with the advent of the Glaxo-Wellcome SmithKline and Pfizer Warner Lambert mergers, the top four Major Pharmaceutical firms now have close to a 30% market share among the major drug manufacturers.

Concentrations of sales for the top therapeutic categories are even more dramatic. The table below demonstrates that only four firms account for the vast majority of sales for some of the most commonly prescribed kinds of medications.

**Table 15 Concentrations of Sales for Top Therapeutic Drugs**

<b>Therapeutic Category</b>	<b>4 Firm Concentration Ratio</b>
SSRI/SNRI Antidepressants	97.5%
Antihistamines	91.1%
Benzodiazepine Anti-Anxiety	86%
Beta-Blockers	84.8%
Cholesterol Lowering Drugs	82%
Oral Diabetes Agents	81.5%
Calcium Channel Blockers	66.1%
Anti-Ulcerants	64.2%
Non-Steroidal Anti-Inflammatory Drugs	63.4%
Cephalosporin Antibiotics	34.8%
Source:(57)	

## 2. Industry Justification for Mergers

The industry cites a number of reasons for merger and acquisition activity: enhanced research and development, the ability to access new therapeutic areas, new geographic areas, or obtaining a technological advantage in product development. (63) Corporations can also shore up any potential profit losses due to a product mix that may soon lose patent protection. When patents expire, a brand name drug may lose the majority of its profits to a generic rival.

Perhaps the most common industry given reason for a merger is the new company’s ability to devote more resources to R&D in a leaner, more efficient post merger environment.(64) Companies often cite the extraordinary resources that go into a pharmaceutical development, such as materials, researchers’ salaries and clinical trials. The industry estimates that the average cost of developing a successful drug is more than \$500 million.(65)

The accuracy of that estimate is not universally shared:

*Dr. Nelson Levy, a former head of research and development at Abbott Laboratories, who now works as a consultant for industry and the federal government on drug development, bluntly challenged the industry's oft-repeated cost of developing a drug. "That it costs \$500 million to develop a drug," Dr. Levy said in a recent interview, "is a lot of bull."(66)*

More importantly, whatever the cost of drug development, the drug industry burden in those costs is considerably lightened through federal subsidies:

*Dr. Levy, the former Abbott Laboratories executive, says preclinical research could account for as much as 20 to 25 percent of a company's research and development budget for a particular drug.*

*"N.I.H.-supported research represents a subsidy to pharmaceutical development," said Dr. Louis Lasagna, an expert in drug development at Tufts University whose studies are widely cited by the industry. "But you need a midwife, the companies, to bring it to market."*

*The word subsidy, not surprisingly, rankles drug industry officials, who say other businesses, including the medical device industry, also benefit from public science.*

*Yet it is clear that the government plays an important, and an increasing, role in drug development, both through inventions like Dr. Bito's<sup>44</sup> and more basic scientific research on which the companies can build. A 1995 study by the Massachusetts Institute of Technology found that, of the 14 new drugs the industry identified as the most medically significant in the preceding 25 years, 11 had their roots in studies paid for by the government.*

*"The general pattern is that industry is building enormously heavily on basic research supported by N.I.H.," said Dr. Francis Narin, president of C.H.I. Research, a consulting firm that has analyzed patents as a way of measuring the role public science plays in industry.*

*In a 1997 study commissioned by the National Science Foundation, C.H.I. looked at the most significant scientific research papers cited in medicine patents. It found that half the cited studies were paid for with United States public funds, primarily from government and academia; only 17 percent were paid for by industry. (The rest came from public and private foreign sources.)*

*And in a study with the National Eye Institute, published in 1996, C.H.I. found that 41 percent of patented eye-care technology was linked to research financed by the health institutes...(66)*

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<sup>44</sup> On Jan. 7, 1982, in a laboratory at Columbia University, a little-known science professor, Laszlo Z. Bito, finished a nine-month experiment on the eyes of cats. In his handwritten data, carefully charted in gray hardcover notebooks, lay the origins of what every pharmaceutical company longs for: a blockbuster drug.

The drug is Xalatan, a best-selling eyedrop for glaucoma. With \$507 million in sales last year -- and the potential for billions more, most of it pure profit -- the four-year-old medicine is the equivalent of liquid gold for its manufacturer, the Pharmacia Corporation. The eyedrop earned Columbia University about \$20 million in royalties last year, and it has made a millionaire of Dr. Bito as well.

Yet there are other, unseen, partners in the creation of Xalatan: the American taxpayers, who backed Dr. Bito's work with \$4 million from the National Institutes of Health. The taxpayers have reaped no financial return on their investment; their reward, government officials say, is the eyedrop itself.

Xalatan costs patients \$45 to \$50 for a tiny bottle that lasts six weeks. That price -- about \$1 a day for a drug that staves off blindness -- may not seem excessive. But the key ingredient in that daily dose costs Pharmacia only pennies to make, and Americans, who live in the only industrialized nation that lacks government restraints on drug prices, pay more than twice what European patients pay for the drug. (66)

However, the claim that mergers will improve the industry’s success in health breakthroughs is not clear according to Dr. Sidney Wolf and Dean Baker at the CEPR. As Director of Public Citizen’s Health Research Group, Dr. Wolf states,

*There is no evidence that the economies of scale have resulted in price savings to consumers -- quite the contrary. Also, there is no evidence that more research will come out of the combined companies than the two individuals.(67)*

Other experts say that the \$500 million per drug estimate is inflated, and is based on confidential industry data not subject to outside review.(65) Furthermore, some of the costs that the industry includes as part of R&D could more accurately be described as marketing costs than research. For example, development costs often include consulting fees paid to doctors.(67) Marketing costs already outpace R&D costs. According to the Kaiser Family Foundation, in 1998, the industry spent three times as much on marketing and administrative expenses than on R&D as a percentage of sales.(67)

A recent analysis of 22 pharmaceutical companies that merged between 1988 and 1999 shows that clinical research spending and productivity declines post merger. CenterWatch’s analysis shows that after three years, clinical research projects drop nine percent, representing a decline of \$15-\$20 million in investigator grants.<sup>45</sup>

Post merger research may be deliberately squeezed. The FTC reports that the growth of formularies, which limit the number of available drugs to consumers, serves to encourage the consolidation of new drug development capacity.(9) In fact, formularies provide a disincentive for companies to develop new drugs, but rather to promote one popular drug.

Between 1990 and 2000, the FDA approved 857 new drug applications. However, 50 percent of these applications were for new versions of existing drugs, and only 36 percent were for new products.(68) This practice, called *evergreening*, allows pharmaceutical companies to apply for new patents on a modestly improved, already-existing product, thus eliminating the need for major R&D and extend the life of the original patent to prolong profitability.

Industry stated reasons for merger and acquisition activity have little empirical support. R&D spending is not as high as claimed, and mergers tend to reduce R&D expenditures. Moreover, the R&D that is being spent is not resulting in pharmaceutical breakthroughs, but rather minor improvements on existing drugs. Finally, though the industry touts the high costs of R&D, its biggest spending item is actually marketing.

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<sup>45</sup> Long term levels of pre-clinical through phase III projects dip 34 percent below the cumulative, premerger levels.(67) A therapeutic area head from Monsanto/Searle, recently acquired by Pharmacia Upjohn, states: “Portfolio pruning is very common and it can cut deep. Marginal projects, and those projects that lose their internal champions, they are the targets.” In the short term post merger, merged companies slow down their rate of R&D spending substantially. After three years, the level of R&D spending returns to premerger levels, about 7.9 percent. A contract and budgets administrator from Ciba-Geigy, now Novartis, explains: “It’s pretty frenetic. I’ve seen a flurry of activity pre-merger to help generate a high valuation and to get the projects going. Then one year after the close, there’s a freeze on practically everything. A couple of years out, with a new mission and more focus, spending increases and outsourcing increases.”(67)

There is some evidence, however, that the mergers of the last few years are associated with escalating drug costs. The greater market power engendered via mergers and acquisitions enables the industry – their protestations about price controls notwithstanding - to set their own inflated price controls on drugs.

**D. HMOs: Mergers/Acquisitions, Revenues/Profits and Expenses**

The HMO sector has also been fairly active in the merger and acquisition arena. Our adjusted total price for such transactions is about \$66.7 billion from 1993 through the first two months of 2001. There is a clear trend for an increase in the number of transactions per year following the 1994 amendment to Sherman Antitrust. The same is true of the costs of the transactions. The below chart summarizes our findings:

**Table 16: HMO Merger and Acquisition Cost<sup>46</sup>**

Year	Number Of Transactions	Number With Price Present	Price In Year Of Transaction	Price In Year 2000 Dollars	Price In Year 2000 Dollars Adjusted For # Of Covered Lives
1993	18	12	\$1,298,592,000	\$1,547,526,245	\$2,377,801,695
1994	39	27	\$3,899,639,676	\$4,531,160,272	\$5,199,373,311
1995	27	20	\$4,320,602,000	\$4,881,940,056	\$8,289,728,776
1996	60	46	\$15,033,614,330	\$16,499,607,309	\$20,839,446,229
1997	57	35	\$3,677,314,453	\$3,945,380,365	\$5,277,394,230
1998	62	25	\$5,123,539,532	\$5,412,720,905	\$13,723,840,547
1999	66	26	\$1,554,651,058	\$1,606,908,236	\$5,425,137,498
2000	49	19	\$1,072,795,000	\$1,072,795,000	\$5,470,928,276
Jan-Feb 2001	6	3	\$78,000,000	\$75,247,059	\$103,743,989
<b>Totals</b>	<b>384</b>	<b>213</b>	<b>\$36,058,748,049</b>	<b>\$39,573,285,447</b>	<b>\$66,707,394,551</b>

Despite the vastness of the recent HMO merger and acquisition activity and the alleged benefits of economies of scale, the below table shows that through 1999, some of the largest HMOs realized little improvement in revenue and profit levels. Indeed, some of them actually fared worse in the post merger environment. It is only recently that revenues and profits for the largest HMOs are beginning to climb, and that is due to large premium hikes rather than any efficiencies gained through merger activity.

**Table 17 Large HMO Plans - Total Revenue, Total Expense, Net Profit<sup>47</sup>**

Year And HMO Cigna	Total Revenue	Total Expense	Net Profit	Number Of Filings
1999	4,388,810,989	4,259,228,154	129,582,835	19
1998	4,602,677,011	4,402,228,839	200,448,172	20
1997	3,781,210,216	3,666,788,865	114,421,351	20

<sup>46</sup> Source: IHSP Calculations of Irvin Levin and Associates Data

<sup>47</sup> Source: IHSP Calculations of Medicare Cost Report Data/Thompson Financial

1996	557,324,215	527,914,035	29,410,180	9
<b>Year and HMO Aetna</b>	Total Revenue	Total Expense	Net Profit	Number of Filings
1999	9,836,772,877	9,872,805,585	-36,032,708	20
1998	8,281,339,100	8,194,547,666	86,791,434	19
1997	7,108,856,079	7,073,683,929	35,172,150	20
1996	1,040,103,661	1,064,922,404	-24,818,743	10
<b>Year and HMO PacifiCare</b>	Total Revenue	Total Expense	Net Profit	Number of Filings
1999	8,037,046,202	7,547,301,009	489,745,193	5
1998	7,251,291,908	6,788,685,930	462,605,978	4
1997	6,565,003,797	6,209,664,267	355,339,530	4
<b>Year and HMO Humana</b>	Total Revenue	Total Expense	Net Profit	Number of Filings
1999	4,932,117,920	4,967,191,622	-35,073,702	5
1998	4,831,152,331	4,682,394,193	148,758,138	6
1997	3,128,798,233	3,086,887,354	41,910,879	7
1996	1,976,133,001	1,970,193,923	5,939,078	8
<b>Year and HMO Oxford</b>	Total Revenue	Total Expense	Net Profit	Number of Filings
1999	3542493641	3390585969	151,907,672	2
1998	3991637605	4307639836	-316,002,231	3
1997	3483387047	3847199296	-363,812,249	3
<b>Year and HMO United Healthcare</b>	Total Revenue	Total Expense	Net Profit	Number of Filings
1999	10,492,051,548	10,527,374,324	-35,322,776	27
1998	9,613,273,964	9,929,250,686	-315,976,722	27
1997	7,415,577,791	7,391,729,822	23,847,969	27
<b>Year and HMO Kaiser Foundation Health</b>	Total Revenue	Total Expense	Net Profit	Number of Filings
1999	16,184,618,146	16,090,574,646	94,043,500	10
1998	13,609,461,541	13,548,260,631	61,200,910	10
1997	2,855,695,679	3,007,770,484	-152,074,805	11
<b>Year and HMO Blue Cross Blue Shield</b>	Total Revenue	Total Expense	Net Profit	Number of Filings
1999	14,418,679,943	14,448,233,046	-29,553,103	53
1998	12,109,925,409	12,187,846,826	-77,921,417	55
1997	13,294,353,845	13,452,475,040	-158,121,195	58

For the same filing years, the picture is even less rosy for those HMOs that do not belong to a larger chain as opposed to those that do. The following tables reveal the relative financial discrepancies between those HMOs that belong to chains and those that do not.<sup>48</sup>

<sup>48</sup> Table data are IHSP calculations of Medicare Cost Report data.

**Table 18 Total HMO Revenues, Expenses and Profits**

Year	Total Revenue	Total Expense	Net Profit	Number Of Filings
1999	126,045,478,515	125,782,209,741	263,268,774	484
1998	121,833,933,450	122,409,512,613	-575,579,163	494
1997	100,849,933,415	101,857,896,641	-1,007,963,226	533
1996	31,772,209,233	31,917,741,573	-145,532,340	300

**Table 19 Chain HMO Revenues, Expenses and Profits**

Year	Total Revenue	Total Expense	Net Profit	Number Of Filings
1999	84,600,486,301	84,104,358,099	496,128,202	200
1998	88,242,729,932	88,493,019,243	-250,289,311	218
1997	69,407,252,052	70,158,932,412	-751,680,360	229
1996	21,548,982,253	21,588,907,334	-39,925,081	119

**Table 20 Non-Chain HMO Revenues, Expenses and Profits**

Year	Total Revenue	Total Expense	Net Profit	Number Of Filings
1999	41,444,992,214	41,677,851,642	-232,859,428	284
1998	33,591,203,518	33,916,493,370	-325,289,852	276
1997	31,442,681,363	31,698,964,229	-256,282,866	304
1996	10,223,226,980	10,328,834,239	-105,607,259	181

The above three tables also show that expenses have risen rapidly for HMOs across the board and in particular for non-chain HMOs in 1999 when drug costs accounted for 44% of the total increase in health costs from the preceding year.

## V. Drug Costs

The Pharmaceutical industry has garnered a number of critics concerning drug prices and their impacts on patients. Some critics are more blunt than others:

*Big Pharma did not invent these lifesaving drugs that they have patented and arbitrarily overpriced... Anti-retrovirals were for the most part discovered by publicly funded US research projects into other diseases, and only later entrusted to pharmaceutical companies for marketing and exploitation. Once the pharmas had the patent, they charged whatever they thought an AIDS-desperate Western market would stand: \$12,000 to \$15,000 a year for compounds that cost a few hundred to run up. Thus a price tag was attached, and the Western world, by and large, fell for it. Nobody said it was a massive confidence trick. Nobody remarked that, while Africa has 80 percent of the world's Aids patients, it comprises 1 percent of Big Pharma's market.(69)*

*Schering-Plough Corp. said it would contest a suit filed by the Federal Trade Commission alleging that patent settlements between it and two generic drug companies included illegal payments to delay a low-cost generic drug from reaching the market.*

*In an administrative complaint filed Monday against drug-maker Schering-Plough and the generic companies -- the Lederle unit of American Home Products Corp. and Upsher-Smith Inc., Minneapolis -- the FTC alleged the deals cost consumers more than \$100 million. "When payments are made to discourage entry, enormous potential for consumer harm exists," said Molly Boast, FTC competition chief.(Schering-Plough, Generic Firms Face FTC Suit Over Alleged Illegal Payments (April 2)Schering-Plough said it "believes the settlements with Upsher-Smith and Lederle complied with the law." American Home Products and Upsher-Smith issued statements denying the FTC's charges and vowing to fight them.*

*All five FTC commissioners voted for the complaint, which alleges that Schering-Plough paid Upsher and American Home millions of dollars to delay launching their generic versions of a potassium-chloride supplement called K-Dur 20, often prescribed to patients with high-blood pressure or cardiac problems. If the suit is successful, Schering would be forced to license K-Dur immediately.(70)*

The industry also has its proponents; chief among them are industry insiders themselves that embrace market mechanisms with an ideological fervor that far exceeds any empirical justification.

*Despite all the anger and the attention focused on prescription drug costs, spending for prescription drugs accounts for only about 8% of the national health care total. Price controls on prescription drugs will not help needy seniors. What they will do is cripple the US pharmaceutical industry and snuff out smaller biotech companies. All modern economists know that the one absolutely predictable consequence of price controls is to shrink the supply of whatever is controlled. In the case of pharmaceuticals, price controls shrink the supply of new, innovative drugs. Without the prospect of the reward of free pricing, few investors are willing to bear the risks involved in the search for breakthroughs. Unfortunately, but unmistakably, price controls will also compromise the survival of many patients. The only solution is to fix the flaws in the current Medicare program and give elderly citizens access to the drugs they need(71)*

There is no debate that prescription drug expenses are increasing rapidly. Although the pharmaceutical industry points to development costs in bringing a drug to market as a prime driver of increasing drug costs, there is considerable disagreement as to the antecedent conditions of those increases, but there is virtually no disagreement concerning pharmaceutical revenues and profits.<sup>49</sup>

Pharmaceutical companies are the most profitable business in America, according to Forbes magazine. The average compensation for 12-drug company CEOs in 1998 was \$22 million. (7) The industry was number one in return on revenues (18.5 percent), assets (16.6 percent), and equity (39.4 percent). (8) Profits were over three times greater than the average of all other industries. Huge tax benefits afforded to drug companies lowered their average effective tax rates nearly 40 percent relative to all other major US industries from 1990-1996.(7)

Drug prices are expected to go up 17.5 percent this year, and the most commonly used drugs' prices are growing at twice the rate of inflation. (72) A report published by Health Affairs found that drug spending accounts for 44 percent of the increase in health costs, more than doctors' services (32 percent) and inpatient hospital care (3 percent). (51)

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<sup>49</sup> See, Top Global Corporations Involved in Pharmaceutical Manufacturing by Net Sales (Most Current Available Year), in this study.

The California Public Employees Retirement System (CalPERS), the largest purchaser of health care in the United States next to the federal government, has just announced significant cost increases for prescription drugs for their 1.1 million members. CalPERS is watched closely by the health care industry because it is often a bellwether for insurance trends.

*... they (CalPERS) will switch to what is known as a three-tier plan for prescription drugs. The plan will require members to pay \$5 for generic drugs, \$15 for brand-name medications and \$30 for nonformulary drugs for a 30-day prescription supply at retail pharmacies. Members now pay \$5 for all prescriptions.*

*The 13-member board, following the recommendation of a committee, agreed to offer eight health maintenance organization plans. Western Health Advantage, based in Sacramento, is the only new offering.*

*Yesterday's decision came after CalPERS, in an effort to keep health care costs down, tossed out all 10 bids it received from HMOs in February. The HMOs had proposed rate increases of 5.5 percent to 41 percent.(73)*

#### **A. Prescription Drugs and the Elderly**

As many Seniors live on a modest fixed income and since they consume 28 percent of all prescription drugs,(74) and twenty percent of elderly Americans take at least five prescription medications every day, (74) the rising costs of pharmaceuticals has a disproportionate impact on the Medicare patient population:

*Today, Mrs. Brown is elderly, ailing and all but broke. She suffers from chronic emphysema, high blood pressure and arthritis. She nearly died from pneumonia earlier this year, and in October was hospitalized for major complications. Now age 70, she qualifies for Medicare, the federal government's massive program that is supposed to insulate the elderly from the devastating costs of health care.*

*Yet Medicare has always had a glaring hole in the safety net: With few exceptions, it doesn't cover the costs of prescription drugs -- the single largest health-care expense for the elderly. (75)*

As the below table makes clear, the price of those drugs is considerable, especially for those on a fixed income:(75)

#### **America's Top-Selling Drugs Are Used Heavily By Seniors. Sales And Ranking Data Are For January Through September 1998.**

**Table 21 Top 10 Selling Drugs Used by Seniors**

<b>Drug</b>	<b>Usage</b>	<b>Price (one-month supply)</b>	<b>1997 Sales (billions)</b>	<b>% of Sales to Seniors</b>
Prilosec	Anti-ulcer	\$116.09, 20 mg	\$2.1	33%
Prozac	Antidepressant	\$75.04, 20 mg	1.7	9
Lipitor	Controls cholesterol	\$84.60, 20 mg	1.2	38
Zocor	Controls cholesterol	\$105.48, 20 mg	1.2	47
Zoloft	Antidepressant	\$71.41, 50 mg	1.1	16
Claritin	Anti-allergy medication	\$69.57, 10 mg	1.0	12
Paxil	Antidepressant	\$71.84, 20 mg	0.9	16
Prevacid	Anti-ulcer drug	\$107.83, 30 mg	0.9	28

Drug	Usage	Price (one-month supply)	1997 Sales (billions)	% of Sales to Seniors
Norvasc	Controls high blood pressure	\$70.23, 10 mg	0.9	49
Augmentin	Antibiotic	\$97.34*, 875 mg	0.7	7
*10-day therapy				

Medicare beneficiaries – many of whom are being deserted by the HMO industry - comprise the single largest patient group in need of expensive medications. Those beneficiaries are at particular risk to increases in drug pricing structures:

- Only 53 percent of Medicare beneficiaries had drug coverage for the entire year of 1996, although 69 percent had coverage for at least one month during the year.
- Most sources of drug coverage are potentially unstable. Almost 48 percent of beneficiaries with drug coverage through Medigap and 29 percent who were covered through Medicare HMOs had drug coverage for only part of the year. Additionally, while employer-sponsored retiree coverage, the most prevalent single source of drug benefits, covered 32 percent of Medicare beneficiaries in 1996, 14 percent of those beneficiaries had only part year coverage from their former employers.
- ..., Medicare+Choice plans generally have reduced drug benefits and increased enrollee out-of-pocket costs in 2000. Eighty-six percent of plans have annual dollar limits on drugs, including 70 percent of plans with annual caps of \$1000 or less, and 32 percent with caps of \$500. Drug benefits are becoming less generous.
- ....one employer survey recorded a drop from 40 percent in 1993 to 28 percent in 1999 in the number of large firms offering health benefits to Medicare eligible retirees. Additionally, employers have tightened eligibility rules and increased cost-shifting to retirees. Of those employers that still offer medical coverage, the survey found that 40 percent are requiring Medicare-eligible retirees to pay Drug coverage is likely to decline as fewer employers offer health benefits.
- Individuals with incomes between 100 percent and 150 percent of poverty, or individuals age 65 or older with incomes between \$7,527 and \$11,287 in 1996, have the lowest rate of coverage. Although coverage varies by income, nearly one-fourth of beneficiaries with incomes over 400 percent of poverty lack coverage.
- Beneficiaries are less likely to have coverage if they are very old or live outside of a metropolitan area. About 37 percent of beneficiaries age 85 and above lacked coverage at any time during 1996, compared to 28 percent of beneficiaries age 65 through 69. About 43 percent of beneficiaries living in rural areas lacked any drug coverage, compared to 27 percent of beneficiaries living in urban areas.
- Coverage rates vary little by self-reported health status, but are considerably higher for those with five or more chronic conditions. By all measures, at least one-fourth of those in any category of health status lack coverage.
- Nearly one in four in the non-Medicare population never had any coverage for drugs in 1996. About 80 percent of those with full-year coverage got that coverage through employers.(76)

The average drug cost for each senior citizen was over \$1200 in 1999 and is expected to rise over \$2800 per person in 2010.(74) There are 13 million Medicare beneficiaries with no prescription drug coverage. Further, the elderly as a group tends to fill 1/3 fewer prescriptions and pay twice as much out-of-pocket as non-seniors.(76) By paying out of pocket, these individuals pay the highest costs for prescriptions because they lack the leverage of HMOs and the government to negotiate lower prices. For individuals without prescription drug coverage, prescription drugs are consistently more expensive. This two-tiered pricing scheme causes seniors to often pay 130 percent more than other customers.(77)

Part of the pharmaceutical merger and acquisition fallout for patients and the health care provider sector alike has been a steady escalation of drug prices as a percent of total health care costs since 1995.

*The (health care merger and acquisition) binge was fueled by a 1994 change in U.S. anti-trust law (ironically, the only major change adopted by Congress in response to the Clinton administration's 1993 health care plan) that granted extraordinary latitude to merging health care corporations, reputedly to encourage competition. (78)*

A brief summation of that change and its possible impacts is presented below:

*In September 1994, the Justice Department and Federal Trade Commission issued comprehensive “non-enforcement” antitrust policy statements in health care, expanding safe-harbors and areas of non-enforcement established a year earlier. Statements of Enforcement Policy and Analysis, reprinted in 4 Trade Reg. Rep. (CCH) ¶ 13, 152 at 20, 769 (Sept. 30, 1994). The stated purpose of the policies is “to provide education and instruction to the health care community in a time of tremendous change, and to resolve, as completely as possible, the problem of antitrust uncertainty that some have said may deter mergers, joint ventures, or other activities that would lower health care costs.” Id.*

*The statements provide antitrust “safety zones” and other relief for nine separate areas of collective activity: (1) hospital mergers; (2) joint ventures involving high technology or other expensive health care equipment; (3) joint ventures involving specialized clinical or other expensive health care services; (4) providers’ collective provision of non-fee-related information to purchasers; (5) providers’ collective provision of fee-related information to purchasers; (6) provider participation in exchanges of price and cost information; (7) joint purchasing arrangements among health care providers; (8) physician network joint ventures; and (9) multi-provider networks.*

*For networks and ventures among health care providers who jointly market their services the multi-provider network policy rejects the historical “per se” approach to analyzing the lawfulness of price-fixing and geographic market division among competitors in favor of the “rule of reason” approach. The Department of Justice and the FTC will apply the “rule of reason” analysis to multiprovider networks if they determine that the collective activity among the network participants is “necessarily related to significant economic integration among them.” Id. at 20, 793-94. “Substantial financial risk-sharing” among the network participants is evidence of such integration. Id. at 20, 794. Examples of “substantial risk sharing” include: (i) when the network agrees to provide services to a health benefit plan at capitulated rates; or (ii) when the network creates significant financial incentives for participants to “achieve specified cost containment goals.” Id.*

*The initial 1993 non-enforcement policies (Antitrust Enforcement Policy Statements in the Health Care Area, reprinted in 4 Trade Reg. Rep. (CCH) ¶ 13, 151 (Sept. 30, 1994)) were limited to the first six of these “safety zones,” yet were severely criticized by dissenting FTC Commissioner Deborah K. Owen:*

*The risks of higher prices and reduced output or lower quality care posed to some health care consumers by the more relaxed enforcement proposed in some of these Statements far outweigh any benefits generated. Moreover, the premises implicitly underlying some of the Statements –that sufficient guidance is not available and that the agencies’ past enforcement efforts have been unreasonable—are simply unsupportable.... Some of today’s action effectively constitutes a special-interest antitrust exemption that should more appropriately be accomplished through legislative action, if at all....*

*4 Trade Reg. Rep. (CCH) ¶ 13, 235, (Sept. 15, 1993)*

*The DOJ/FTC non-enforcement policies were again revised in August 1996, providing even more relief from federal enforcement for physician and multi-provider networks. The new revisions to Statements 8 and 9 were promoted by DOJ/FTC as giving providers greater flexibility in the creation of networks in an attempt to remedy a perceived “chilling effect” of existing law on the development of new and innovative provider networks. Statements of Antitrust Enforcement Policy in Health Care, 4 Trade Reg. Rep. (CCH) ¶ 13, 153 (Sept. 5, 1996).(79)*

The table below depicts the percent of health care costs expended on prescription drugs for selected years. It is evident here that the rise in drug costs beginning in 1995 is closely associated with the rise in pharmaceutical merger and acquisition activity. Increases were fairly flat in the mid 1990s, but began to climb in 1995 after the Sherman Anti-Trust Act was modified to allow the health care industry to achieve economies of scale in an ostensible effort to bring down total health care spending.

**Table 22 Percent of Total Health Care Costs<sup>50</sup> for Prescription Drugs: Selected Years(53)**

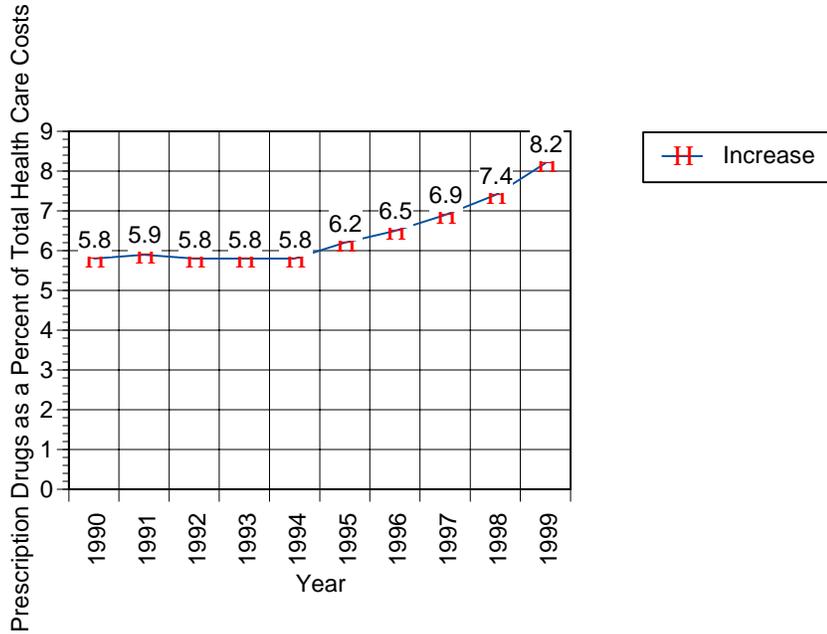
Year	1960	1970	1980	1988	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Percent	10.1	7.5	4.9	5.5	5.8	5.9	5.8	5.8	5.8	6.2	6.5	6.9	7.4	8.2

It is critical to note, however, that the above increases do **not** include all drug costs and are therefore conservative figures.

*Expenditures for prescription drugs are limited to those purchased from retail outlets such as community or HMO pharmacies, grocery store pharmacies, mail order pharmacies, etc. The value of prescription drugs provided to patients by hospitals as part of a hospital stay, by nursing homes as part of care in a nursing home, or provided by physicians in their offices are not included in prescription drugs but are included in those respective expenditure categories. Consequently, the expenditures for prescription drugs shown here are underestimated and may differ from other estimates (e.g., prescription drug sales by manufacturers estimated by market research firms)(54)*

<sup>50</sup> IHSP calculations of HCFA data.

**Figure 2 Percent of Total Health Care Costs for Prescription Drugs: 1990-1999**



**B. Consequences of Increased Pharmaceutical Market Share**

As pharmaceutical corporations consolidate and gain market power, they are more easily able to set higher drug prices:

- Drugs sold in Canada and Mexico are generally half the price of the same drugs sold in the US.(80)
- The average American pays 50 percent more for a prescription drug than in England, 75 percent more than in France and 100 percent more than in Italy for the same drug.(81)

Greater market power also enables them to create demand for brand name drugs via public advertising campaigns.

- In 1999, the industry reported that promotional spending reached a record high \$13.9 billion...(82)
- Schering-Plough spent \$136 million on advertising for Claritin in 1998, which is more than was spent on advertising for Coca-Cola or Budweiser beer.(83)
  - That same \$136 million is also sufficient to employ about 3,230 full time Registered Nurses at the national average rate.
  - Or, it could pay for 104,938 adjusted patient stay hospital days (287 patient stay years) at the 1999/2000 national median rate of \$1,296.
- The industry reported \$13.9 billion for drug promotion could pay for 10,725,308 patient stay hospital days (that’s more than **29,000** patient stay years) at the same national median rate.<sup>51</sup>

<sup>51</sup> IHSP calculations of U.S. hospital Medicare Cost Report data; filing years 1999 and 2000.

Increases in total drug spending have been concentrated in a relatively small number of therapeutic categories, and these categories tend to include heavily advertised drugs. Higher drug prices account for 64 percent of the total 1993-98 increases in drug spending and higher drug utilization accounts for 36 percent of the increase. (58) This situation is particularly relevant to Medicare patients - at least 10 percent of Medicare beneficiaries without supplemental coverage reported they needed, but did not get, at least one prescription filled in the last year, (76) and about 70 million Americans of all ages—about 1 in 4—have no prescription drug coverage whatever.(84)

As a result of patient demand – in good part driven by heavy industry advertising - for more specific medications, the aging population and more expensive therapies, providing prescription benefits will cost employers on average 20 percent more in 2001 than in 2000, according to a survey by the Segal Company(85).

These trends make it more expensive for insurance plans that cover prescription benefits and employers who offer such plans. Not only do consumers who must pay out-of-pocket make tough choices with expensive drugs, but so do HMOs and employers. Rising drug costs will inevitably lead to higher premiums, higher co-payments, fewer benefits and more restricted access to pharmaceuticals and health care.(86)

### **1. Hospital Drug Charge to Cost Ratios: Coping with the High Price of Drugs**

Of the approximate 4,545 acute care only hospitals<sup>52</sup> whose most recent Medicare Cost Report filing was in 1999 or 2000, drug costs for patients (\$21,008,013,762) were only 29.3% of what hospitals charged patients for those same drugs (\$71,705,455,513) which is a net difference of \$50.7 billion for the time period.

Hospitals in the aggregate seem to be coping with the high cost of drugs by demanding substantial Drug Charge to Cost Ratios (DCCRs).

It is accepted business practice to express various expense/cost categories as costs as a fraction of charges. From a business perspective, such an approach is wholly appropriate. However, from a consumer perspective – patients, employers and insurers - it may make more sense to reverse that common practice and utilize charge to cost ratios instead. For example, our calculations show that the national average drug cost to charge ratio is .29 (costs÷charges). However, the charge to cost ratio, expressed as charges as a percent of costs, (charges ÷ costs x 100) is about 347.1%. That is, the charge is 347.1% of the actual cost. For purposes of this study, we constructed charge to cost ratios for all selected Medicare Cost Report categories.

However, the DCCR varies considerably from one type of hospital control to the other.

Corporate forms of control have by far the greatest DCCR while State, Other Not-for-Profit, City/County, County, District/Authority, City and State forms of control are all below the national average of 347%.

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<sup>52</sup> Drug charges and costs analyses are limited to only acute care hospitals

**Table 23 Hospital Type of Control with Averages of Selected Data Sorted by Drug Charge to Cost Ratio**

Control Name	Drugs Cost	Drugs Charge	Net Difference Drug Charges Less Costs	Drugs Charge To Cost Ratio	Drugs Cost Per Discharge	Drugs Charge Per Discharge	Value Of Drug Charge To Cost Decile
Corporation	\$3,698,076.35	\$20,089,771.14	\$16,391,694.79	531.1319	\$682.08	\$3,289.68	8.15
Partnership	\$2,684,583.04	\$10,370,283.42	\$7,685,700.38	399.7537	\$1,271.97	\$4,232.94	6.77
Individual	\$1,303,783.33	\$5,154,928.67	\$3,851,145.33	385.7547	\$403.27	\$1,648.60	7.33
Church	\$6,101,786.97	\$21,639,297.05	\$15,537,510.08	363.3123	\$676.03	\$2,226.77	5.89
National Averages	\$4,641,629.20	\$15,843,008.29	\$11,204,659.20	347.0679	\$703.19	\$2,223.25	5.50
Other Not-for- Profit	\$5,207,353.34	\$16,355,260.71	\$11,147,907.37	315.3338	\$682.33	\$2,025.73	5.00
City/County	\$2,789,834.93	\$9,211,399.01	\$6,429,267.15	312.8956	\$819.38	\$2,182.11	5.01
County	\$2,687,820.46	\$7,960,896.51	\$5,288,793.85	310.4253	\$693.23	\$1,911.40	5.00
Hospital District/Authority	\$2,481,065.10	\$8,555,244.41	\$6,074,179.31	295.4035	\$701.84	\$1,902.35	4.66
City	\$1,601,575.19	\$3,991,913.77	\$2,390,338.58	287.4463	\$580.50	\$1,533.50	4.68
State	\$16,949,033.80	\$38,801,831.12	\$21,852,797.32	208.6970	\$1,633.55	\$2,980.57	3.36

**VI. The Nursing Shortage: A Discursive Overview**

There is now widespread acknowledgement that the nation is in the midst of a severe nursing shortage – by the nation’s hospitals, nurses’ organizations and various analysts:

- During the first quarter of 2000, Maryland hospitals had an average vacancy rate for hospital nurses of 14.7 percent, up from 3.3 percent two years earlier.(15)
- In New York, there was a 25 percent decrease in nursing program graduates during the last six years.(15)
- In a survey of 200 home health agencies in New York, 93 percent could not find enough workers to fill vacancies.(87)
- In New Jersey, the state Department of Health and Senior Services fined 17 hospitals for failing to maintain adequate nursing levels in a period of 20 months.(15)
- In a survey of nurses by the Kaiser Family Foundation, 69 percent responded that “inadequate staffing levels where I work” is a great concern.(88)
- According to the US Bureau for Labor Statistics, jobs for RNs will grow 23 percent between 1999 and 2006.(89)

- However, there are fewer people going to school to be nurses. The Harvard Nursing Research Institute shows that enrollment in nursing schools dropped 20.9 percent from 1995-1998 and has declined every year for the last six years.(90)

Additionally, many nurses will be retiring as the shortage becomes more intense. Half of the nursing population will retire in 15 years. The average age of RNs is 45.2, with only 31.7 percent being under the age of 40. In contrast to 1980, 52.9 percent of all RNs were estimated to be under 40.(15) As the nursing population gets older and shrinks, the Baby Boomer generation will be retiring and needing an increased rate of service from nurses, expected about 2010. This will put particular stress on long-term care facilities. For example, an American Health Care Association study shows that in nursing homes, demand for RNs will increase 66 percent between 1991 and 2020, and 71.5 percent for LPNs between 1991 and 2000.(91)

### *A. Antecedent Conditions to the Shortage*

Nurses point to poor workplace conditions: stagnant salaries, poor pensions, mandatory overtime, long shifts, and little support.

Hospitals blame the shortage on increasing financial pressure because of Medicare cuts (which we have seen earlier in this study have little explanatory power regarding hospital falling profits) and managed care. The restructuring of health care that took place in the 1990's was based on economic decisions that resulted in downsizing, restructuring, consolidations and other efforts to gain efficiencies of scale. Some analysts have argued that managed care as such reduced the hospital industry's demand for nurses, thus decreasing salaries.(92) The Center for Health Affairs points out that with the advent of managed care, massive personnel layoffs included nurses.<sup>53</sup> Typically, nurses represent 23 percent of the hospital workforce and the largest share of labor costs. (93) A number of studies have confirmed a clear slowdown in RN employment growth in states with a high proportion of HMOs. (92;94)This has caused some nurses to leave the profession and discouraged potential nurses from entering the field.

According to a 1998 Hay Group survey of nurses in 178 hospitals asking why they left their jobs, the top three reasons involved relocation, better hours, and increased workload.(91)

Other studies point to the role of the management consulting industry and the essentially “canned” restructuring programs that they sold to hospitals in the mid-1990s that elevated mass layoffs of nursing personnel to a virtual national industry policy.(95) Other related studies emphasize:

- The breach of trust between nurses and the hospital industry incurred by the health care restructuring movement in which nursing personnel working outside the hospital environment proved adamant in their refusal to work in what they believed to be dangerous acute care facilities; (78)
- The wealth of questionable studies by the hospital industry promoting downsizing programs as beneficial to patient care(96)
- The misuse/misunderstanding of artificial intelligence applications in the health care workplace which directly impinge upon the exercise of professional judgment of nursing personnel(97)

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<sup>53</sup> We believe such an analysis is reductionistic and an oversimplification of the health care restructuring phenomenon. For a fuller explication of our view on the issue, see the Addenda, *A Theoretical Model and Research Guide*.

- The vast revenues generated by various sectors within the health care industry in recent years that have been expended on building market share rather than planning for adequate nurse staffing for an aging and relatively more ill patient population(94;98)

### ***B. A Brief Discourse on the Nursing Shortage***<sup>54</sup>

Nursing shortages are certainly not a new phenomenon. Like other market and labor trends, the supply of nurses has historically been uneven, and nurses have entered or re-entered the workforce to stave off national crises of care.

But the nursing shortage that has grabbed headlines across the country in recent years, and left scores of unfilled vacancies on hospital bulletin boards, is unique and threatens to be far more enduring.

Increasingly, trends indicate that many RNs simply have lost trust in the industry; they've left the hospital setting and they are not readily coming back.

The health care industry and the numerous management consultants it employs have a catalog of explanations for the current shortage.

They cite an aging workforce - the average age of RNs is now about 46 - and opportunities for women in other professions as long-closed doors in business, law and other male-dominated venues begin to slowly crack open. They note drops in nursing school enrollments and declining graduation rates. In the past, they blamed the "invisible hand" of the market, which in allegedly neutral fashion dictates supply and demand, as well as changes in medical technology and patient care trends that require fewer nurses.

An assessment can begin with a brief look back at the last major nursing shortage in the mid-1980s. As noted by Judith Shindul-Rothschild, RN, assistant professor at the Boston College School of Nursing, that shortage was reversed when hospitals abandoned fragmented models such as team nursing and turned to primary care nursing, which enabled RNs to provide a patient's total care. The result was what Shindul-Rothschild calls a "renaissance in nursing," and RNs returned to the workforce.

Within a few years, however, virtually everything had changed. Nursing care no longer was prioritized as the health care industry had begun to systematically deskill, displace and deprofessionalize nursing.

On the corporate level, large-scale mergers and acquisitions intended to increase market share and build economies of scale resulted in an unprecedented concentration of health care resources in the hands of a shrinking number of very large companies.

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<sup>54</sup> Much of this section is a revised rendering of, DeMoro D. Engineering a Crisis: Where Have All the Nurses Gone? How Hospitals Created a Nursing Shortage. *Revolution* 2000; 1(2):16-23.

In part to stabilize the economic resources needed for merger and acquisition ventures, and to pay off the staggering debt load such ventures inevitably incurred, hospital corporations increasingly turned to squeezing labor costs - and nursing care in particular, their main source of expenditures. At the bedside, management-consulting firms like McKenzie, Booz Allen & Hamilton, American Practices Management (APM), Andersen Consulting and the Hunter Group, were paid hundreds of millions of dollars to implement work redesign models. Carrying pleasing-sounding names such as Patient Focused Care or Population Based Care, the re-engineering was premised on models first introduced in the manufacturing sector of the economy and forced onto the health care workplace and direct caregivers.

The emphasis was on "just-in-time" production techniques that cut staff to dangerously low levels and only provided care for patients when they reached the periphery of crisis and presented a legal liability if they were not treated.

At their core, the redesign plans were intended to deskill and disempower direct caregivers. Most of the models featured the carving up of the care process into assorted "tasks," and shifting RNs away from hands-on patient care to serve as "team leaders" of unlicensed assistive personnel who would perform the tasks. It would mean replacing direct care RNs with unlicensed staff and RNs with advanced degrees taking on supervisor roles.

With fewer RNs ostensibly needed in hospitals, hospital-based education and training programs for RNs were dropped. As hospitals signaled to nursing schools that fewer nurses were needed, education curricula and expenditures were cut back. Enrollments in entry-level bachelor's degree programs had fallen by 4.6 percent in the fall of 1999, although advanced degree programs were growing, according to the American Association of Colleges of Nurses. The Boston College School of Nursing was among the healthiest programs, with admissions flat rather than declining, Shindul-Rothschild said.

The restructuring programs had a huge economic cost. Kaiser Permanente alone spent about \$100 million in only one year on its top four consultants - enough to insure at least 80,000 people.

Some states, such as New York, Massachusetts and Pennsylvania, experienced steadily declining numbers of full-time RNs, coupled with a rising uninsured population. And, as more patients use the emergency room as their entry point to health care, RNs struggle with higher nurse-to-patient ratios and higher acuity levels of patients.

In Maryland, the nursing shortage is reaching epidemic proportions. Dr. John Burton, director of geriatric medicine at Johns Hopkins Bayview Medical Center told a Baltimore Sun reporter that the staffing problems are "having a dramatic impact, and it's likely to get worse. We're headed for a crisis." Maryland hospitals are suffering nurse vacancy rates of 10 percent to 12 percent, with some hospitals facing a 20 percent shortage. The Professional Staff Nurses Association of Maryland, which represents nurses in six of the state's 55 institutions, reports that complaints on unsafe assignments or mistakes have doubled since the beginning of the new year. Although Maryland hospitals are offering higher salaries and extra benefits like tuition or day care provisions, they aren't finding takers. The state's Board of Nursing reports that the number of registered nurses available for work dropped by about 2,300 from 1998 to 1999.

In other states, hospitals are offering nurses signing bonuses of \$6,000 or more, seemingly to little avail.

### ***C. So, Where Have All The Nurses Gone?***

*"All you have to do is talk to a direct care nurse to find out what the conditions are like," said Echo Heron, RN, and author of Tending Lives: Nurses on the Medical Front. "Forced overtime, working double shifts, having far too many patients to care for, then being asked to 'delegate' your work to a person with very little training, well, it all adds up. The hours. The strain. The stress on you, not to mention your family.*

*"And too many RNs feel that they aren't safe and their patients aren't safe," Heron said. "When nurses are overworked and exhausted, run ragged by too many patients, mistakes happen."*

A Maryland nurse, who refused to give her name to a reporter for the Baltimore Sun for fear of losing her job, said that a nurse missed a very unsafe cardiac arrhythmia with one of her patients because she was busy with another one. Yet a number of Maryland hospitals assign ICU nurses three patients instead of the standard ratio of one nurse to two ICU patients.

Nurses across the nation are extremely concerned about the quality of care in their hospitals. A survey conducted by Fingerhut Granados Opinion Research revealed that 66 percent of RNs believe that "staffing levels are inadequate at the place where they work." Sixty-nine percent of them worried that "patients aren't getting the care they need." And 75 percent of RNs were concerned that "because of short staffing, a mistake affecting a patient will occur."

Nurses are losing trust in their institutions and in their management. They are losing trust in the entire health care industry.

Nurses see speed-up at the expense of patient care while executives in the hospital chains where they work sit on wealth undreamed of only a few years ago. They see inner city hospitals closed while the companies shift services to more affluent communities, and they see the most vulnerable patient populations, including the poor, seniors, and some minorities, medically redlined and deprived of needed care.

They see ever-decreasing lengths of stay while acuity levels skyrocket, and sicker patients moved to the new patient dumping ground of "sub-acute" care. They see implementation of computer programs that reduce skills to tasks and unlicensed staff performing increasingly complex procedures.

They have so little faith in hospitals today that increasing numbers will not even recommend hospitals they work in to family members because they are not sure the facility will care for them properly.

*"Our profession is mostly women, and it's true that there are more alternatives for women wanting professional careers," says Shindul-Rothschild. "But then, those slots aren't being filled by men, either. So you have to ask the question, 'Why aren't men coming into the field?' Whether male or female, people aren't entering the profession because of money. The salaries are competitive. And during the last nursing shortage in the '80s, nurses came back to the profession. We aren't seeing that happen today. So that leads me to the conclusion that it must be the working conditions."*

The hospital survey findings in this study indicate that despite the negative consequences of the transformation of health care the past few years, the industry is gearing up for a new stage of deskilling and restructuring programs aimed at reducing costs where they believe they can – patient to care giver staffing levels. The hospital industry is likely to attempt to lay off more care givers in an attempt to cope with the huge debt load created by its own merger and acquisition record of about \$116.6 billion since 1993 in more than 900 transactions, and the momentous rise in prescription drug prices facilitated by pharmaceutical merger and acquisition costs since the mid 1990s - much of which HMOs may try to pass along to hospitals while scaling back even further on the Medicare patient population whose major medical expenses are drugs.<sup>55</sup> The workings of the market and employment opportunities for women elsewhere cannot begin to explain the current shortage of RNs. More likely, the industry shortage is a self-inflicted wound brought about by years of market- and industry-led restructuring programs that led to indiscriminate downsizing, increased patient complaints about the quality of care, deteriorating RN-to-patient ratios, and most critically, a marked loss of trust in the industry by the staff nursing community at large.

#### *D. The Value of Adequate Nursing Staffing Ratios*

Nursing staffs nationwide are angered and discouraged. They have taken a virtual “vote of no confidence” in the hospital industry that they feel has betrayed both them and their patients. Many nurses refuse to work in an acute care environment that they believe is a danger to both their patients and their own well-being. This situation is most unfortunate in light of the fact that a number of studies clearly illustrate a relationship between skilled and sufficient numbers of nursing personnel and patient health.

- A recent study by C.A. Bond at the School of Pharmacy at Texas Tech University brought to light the association between RNs and mortality rates in a study of staffing levels of 14 categories of hospital personnel in 3,763 US hospitals. As the number of RNs per occupied hospital beds increased, the mortality rate decreased.(99)
- In a supporting study, researchers from the University of Pennsylvania found that some health care institutions were better at “rescuing” patients because they possessed certain elements that reduced patient mortality. Nurses were the critical element in being able to recognize, respond to and allocate resources within a hospital system when faced with a patient crisis.(93)
- The same researchers in another study found that the addition of .5 FTE nurse per patient per day would reduce the risk of AIDS patients dying by 30 percent.
- Doctors at Rush Presbyterian-St. Luke’s Medical Center in Chicago found that more hands-on nursing care reduced the number of cesarean sections, much to the benefit of patients.(93) In a number of health care areas, nursing care brings a substantial measurable value to a patient’s health care.

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<sup>55</sup> Some members of the international financial community approve of HMOs disencumbering themselves of Medicare patients. *By doing what they're doing, the managements are showing financial discipline," said Todd Richter, a health care analyst with Banc of America Securities. "It's real nice providing prescription drug coverage and vision care coverage for grandma, but if you can't make a fair return on it, there's no reason to do it. They don't have an obligation to take care of grandma at a loss.*(207)

The Chicago Tribune reported that hospitals are routinely ordering nurses to care for 15 or more patients.(100) In the New York Daily News, nursing aides reported that they were routinely put in charge of up to 40 patients at a time. In cases of short-staffed shifts, some patients did not receive meals and aides even report weight loss among patients. In Wichita, Kansas, one hospital was forced to pay a \$2.7 million judgment when a nurse/patient ratio was seen as a direct factor in contributing to the death of a patient.(101)

## **VII. Conclusion**

This study has demonstrated that there is an association between rising drug costs and the costs and volume of pharmaceutical mergers since 1993. Those costs have increased precipitously in the post 1994 Sherman Antitrust amendment era. Hospitals and HMOs have engaged in intense merger activity in the past few years, some of which is now beginning to taper off, but the expected economies of scale are not reflected in their financial filings. Those HMOs that have improved their finances have done so through increased premium rates and not via merger activity.

The national survey of hospitals indicates that the hospital industry considers escalating drug prices to be one consequence of large scale pharmaceutical corporation mergers and that further increases in drug prices may pressure hospitals to reduce caregiver staffing ratios in an already caregiver scarce environment.

There seems to be little validity to the hospital industry claim that falling Medicare reimbursement rates are the primary offenders in bringing about diminished hospital revenues. There is some evidence; however, that escalating drug prices may be a factor in the HMO sector and may be contributing to their steady flight from the Medicare market.

In the aggregate, hospitals seem to be coping with the escalating price of drugs by demanding substantial Drug Charge to Cost Ratios (DCCRs). However, we have seen that the DCCR varies considerably from one type of hospital control to the other.

Corporate forms of control have by far the greatest DCCR while State, Other Not-for-Profit, City/County, County, District/Authority, City and State forms of control are all below the national average of 347%.

A number of implications follow from these findings:

- Drug price increases may have played a significant historical but overlooked role in generating the current nursing shortage as the provider sector embarked upon ill-conceived restructuring programs – programs that placed reduced numbers of caregiver staff at the core of their design models - offered by the management consulting industry.
- The current national emphasis upon enriched funding for nursing schools may be misplaced. More nursing graduates will not ease the shortage if the provider sector moves to reduce caregiver staff in response to escalating drug costs.<sup>56</sup>

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<sup>56</sup> Further, e.g., less than half the nation’s registered nurses work in acute care settings. This implies that there is not a nursing shortage as such, but a shortage of nurses that are willing to work in an acute care setting given the workload environment.

- The provider sector may turn once again to the management consulting industry for more cost-reduction “re-engineering” programs that stress reduction in “cycle time” with fewer staff. Such a tack will only exacerbate the current shortage and further mask the role that drug prices play in hospital staffing decisions.
- There may be more hospital closings.
- More emergency rooms may close as providers begin to look for other areas to reduce expenses. (102-107)
- If emergency rooms begin to close, it is likely that the health of the uninsured will deteriorate, as the emergency room is their primary route to care.

**VIII. Policy Recommendations**

***A. FTC Investigation and Government Reform Committee Hearings***

We recommend that an FTC investigation into the practices and structuring of pharmaceutical corporate mergers and acquisitions be conducted and that the Government Reform Committee hearings be held on the subject.

***B. “Certificate of Need” Guidelines for Pharmaceutical Industry Mergers and/or Acquisitions***

Additionally, we recommend that “Certificate of Need” guidelines should be applied to the pharmaceutical industry as a whole.

In its simplest terms, such guidelines mean that prior and in addition to satisfying FTC regulations concerning fair trade practices, all pharmaceutical entities involved in a proposed merger and/or acquisition would also be required to undergo a federal impact study. The purpose of such studies is the determination of whether proposed mergers and or acquisitions would have some demonstrable substantive health benefit to the American public and not simply satisfy formal FTC requirements.

**IX. Addenda**

***A. Hospital Survey Instrument***

[Ask for the Hospital Administrator or Finance manager]

I’m calling from a Congressional office doing a nationwide study on the perceptions of hospital administrators about the cost of pharmaceuticals. It will only take a minute.

1.	Are pharmaceutical prices a pressure on your hospital today?	Y / N
2.	Do you think that mergers in the pharmaceutical industry will lead to higher prices?	Y / N
3.	Would pharmaceutical price increases pressure your hospital to reduce	Y / N

	staffing to patient levels?	
4.	In your opinion, will pharmaceutical price increases be a significant pressure in the next 36 months?	Likely / Unlikely
5.	Evaluate the federal government’s performance in regulating pharmaceutical mergers:	Adequate / Inadequate

NAME OF HOSPITAL _____
_____
State _____
_____
Urban/Rural _____
_____
Non profit or other _____
_____

**B. Top Global Corporations Involved in Pharmaceutical Manufacturing by Net Sales (Most Current Available Year)<sup>57</sup>**

**Table 24 Top Global Corporations Involved in Pharmaceutical Manufacturing by Net Sales**

<b>RANK BY NET SALES</b>	<b>COMPANY NAME</b>	<b>STATE</b>	<b>SALES (CURRENT)<sup>58</sup> TH USD</b>	<b>NET INCOME (CURRENT) TH USD</b>	<b>CASH TH USD 1999</b>
1.	Merck & Co Inc	NJ	\$32,714,000	\$5,891,000	\$2,022,000
2.	Astrazeneca Plc		\$30,148,699	\$1,847,422	\$693,389
3.	Johnson & Johnson	NJ	\$27,471,000	\$4,167,000	\$2,363,000
4.	Hoechst Ag		\$26,123,132	\$1,132,696	
5.	Novartis Ag		\$20,281,752	\$4,160,055	\$3,923,908
6.	BristolMyers Squibb Co	NY	\$20,222,000	\$4,167,000	\$2,720,000
7.	Dow Chemical Co	MI	\$18,929,000	\$1,326,000	\$506,000
8.	Pfizer Inc	NY	\$16,204,000	\$3,179,000	\$739,000
9.	Minnesota Mining & Manufacturing Co	MN	\$15,659,000	\$1,763,000	\$387,000
10.	GlaxoWellcome Plc		\$13,722,321	\$2,927,105	\$350,735
11.	American Home Products Corp	NJ	\$13,550,000	(\$1,227,000)	\$1,893,000
12.	Smithkline Beecham Plc		\$13,546,145	\$1,701,956	\$585,098
13.	Abbott Laboratories	IL	\$13,178,000	\$2,446,000	\$608,000
14.	WarnerLambert Co	NJ	\$12,929,000	\$1,733,000	\$1,634,000
15.	Aventis Sa		\$12,656,219	(\$854,933)	\$499,297
16.	Montedison Spa		\$12,055,455		\$1,004,621
17.	Eli Lilly & Co	IN	\$10,003,000	\$2,721,000	\$3,700,000
18.	ScheringPlough Corp	NJ	\$9,176,000	\$2,110,000	\$1,876,000
19.	PharmaciaCorp De	MO	\$9,146,000	\$575,000	\$284,000
20.	Pharmacia & Upjohn Inc	NJ	\$7,253,000	\$803,000	\$1,316,000
21.	Ab Astra		\$7,094,281	\$1,464,210	
22.	Baxter International Inc	IL	\$6,380,000	\$797,000	\$606,000

<sup>57</sup> All listed corporations have an NAICS code of 32541, *Pharmaceutical and Medicine Manufacturing*. Financial data obtained from Thompson Financial and the SEC.

<sup>58</sup> Net Sales figures are for most current year available – in most instances, 1999 or 2000. Due to merger and acquisition activity, some listed corporations are no longer independent firms.

*"Big Pharma :” Mergers, Drug Costs and Health Caregiver Staffing Ratios*

<b>RANK BY NET SALES</b>	<b>COMPANY NAME</b>	<b>STATE</b>	<b>SALES (CURRENT) 58<sup>th</sup> TH USD</b>	<b>NET INCOME (CURRENT) TH USD</b>	<b>CASH TH USD 1999</b>
23.	Fresenius Medical Care Ag		\$3,840,429	(\$248,544)	\$34,760
24.	Schering Ag		\$3,690,979	\$273,257	\$102,471
25.	Becton Dickinson & Co	NJ	\$3,418,412	\$275,719	\$59,932
26.	Amgen Inc	CA	\$3,042,800	\$1,096,400	\$130,900
27.	Novo Nordisk As		\$2,834,462	\$326,605	\$266,730
28.	Nycomed Amersham Plc		\$2,088,573	\$148,214	\$81,946
29.	Beckman Coulter Inc	CA	\$1,808,700	\$106,000	\$34,400
30.	Bausch & Lomb Inc	NY	\$1,756,100	\$444,800	\$827,100
31.	Allergan Inc	CA	\$1,452,400	\$188,200	\$162,900
32.	Dade Behring Inc	IL	\$1,309,200	(\$38,500)	\$61,200
33.	Teva Pharmaceutical Industries Ltd		\$1,282,406	\$117,833	\$77,177
34.	Serono Sa		\$1,054,144	\$183,296	\$161,470
35.	Genentech Inc	CA	\$1,039,095	(\$1,144,528)	\$337,682
36.	Sigma Aldrich Corp	MO	\$1,037,945	\$172,270	\$43,847
37.	Elan Corp Plc		\$981,343	\$261,702	\$711,358
38.	Forest Laboratories Inc	NY	\$881,798	\$112,688	\$302,600
39.	Block Drug Co Inc	NJ	\$864,320	\$56,759	\$41,645
40.	Albemarle Corp	VA	\$845,925	\$88,829	\$48,621
41.	Mylan Laboratories Inc	PA	\$790,145	\$154,246	\$203,493
42.	CarterWallace Inc	NY	\$747,668	\$43,332	\$62,638
43.	Alpharma Inc	NJ	\$742,176	\$39,551	\$17,655
44.	Perrigo Co	MI	\$738,555	\$19,298	\$1,695
45.	Sulzer Medica Ltd		\$738,427	\$301,743	\$341,101
46.	Chiron Corp	CA	\$710,398	\$160,577	\$363,865
47.	Watson Pharmaceuticals Inc	CA	\$689,232	\$178,881	\$102,057
48.	Ivax Corp	FL	\$656,269	\$70,722	\$41,408
49.	Icn Pharmaceuticals Inc New	CA	\$638,475	\$118,626	\$177,991
50.	Nbty Inc	NY	\$630,894	\$27,279	\$18,269
51.	Genzyme Corp	MA	\$628,754	\$142,077	\$94,523

*"Big Pharma :” Mergers, Drug Costs and Health Caregiver Staffing Ratios*

<b>RANK BY NET SALES</b>	<b>COMPANY NAME</b>	<b>STATE</b>	<b>SALES (CURRENT) 58<sup>TH</sup> TH USD</b>	<b>NET INCOME (CURRENT) TH USD</b>	<b>CASH TH USD 1999</b>
52.	Biogen Inc	MA	\$620,636	\$220,450	\$56,920
53.	Rexall Sundown Inc	FL	\$595,664	\$60,062	\$2,124
54.	London International Group Plc		\$580,471	\$29,293	
55.	Bio Rad Laboratories Inc	CA	\$549,489	\$11,721	\$17,087
56.	Immunex Corp Wa	WA	\$541,718	\$44,324	\$260,770
57.	Medeva Plc		\$534,686	\$64,382	
58.	Syncor International Corp	CA	\$520,309	\$19,221	\$13,352
59.	Barr Laboratories Inc	NY	\$482,278	\$42,342	\$94,867
60.	Cambrex Corp	NJ	\$481,388	\$38,132	\$39,796
61.	Schein Pharmaceutical Inc	NJ	\$477,161	(\$34,388)	\$3,821
62.	West Pharmaceutical Services Inc	PA	\$469,100	\$38,700	\$45,300
63.	Agouron Pharmaceuticals Inc	CA	\$466,505	\$13,154	
64.	Alza Corp	CA	\$448,000	\$91,000	\$149,400
65.	Life Technologies Inc	MD	\$409,609	\$38,277	\$51,489
66.	Shire Pharmaceuticals Group Plc		\$401,532	(\$94,998)	\$54,082
67.	Weider Nutrition International Inc	UT	\$364,668	\$1,073	\$1,926
68.	Medimmune Inc	MD	\$356,815	\$93,371	\$36,570
69.	Idexx Laboratories Inc	ME	\$356,214	\$32,578	\$58,576
70.	King Pharmaceuticals Inc	TN	\$348,271	\$44,949	\$8,451
71.	Centocor Inc	PA	\$316,711	\$192,287	
72.	Twinlab Corp	NY	\$315,604	(\$5,176)	\$3,994
73.	Dura Pharmaceuticals Inc	CA	\$301,426	\$30,004	\$63,631

*"Big Pharma :” Mergers, Drug Costs and Health Caregiver Staffing Ratios*

<b>RANK BY NET SALES</b>	<b>COMPANY NAME</b>	<b>STATE</b>	<b>SALES (CURRENT) 58<sup>TH</sup> TH USD</b>	<b>NET INCOME (CURRENT) TH USD</b>	<b>CASH TH USD 1999</b>
74.	Chattem Inc	TN	\$298,142	\$20,156	\$2,308
75.	Nature S Sunshine Products Inc	UT	\$289,189	\$17,796	\$18,433
76.	Instrumentation Laboratory Spa		\$268,818	(\$38,378)	\$11,451
77.	Del Laboratories Inc	NY	\$267,346	(\$4,002)	\$3,585
78.	Nabi	FL	\$233,603	\$3,344	\$806
79.	American Safety Razor Co	VA	\$227,159	(\$1,258)	\$12,500
80.	Gp Strategies Corp	NY	\$224,810	(\$22,205)	\$4,068
81.	Sicor Inc	CA	\$223,700	\$11,675	\$47,506
82.	Dey Inc	CA	\$219,810	\$54,022	
83.	Charles River Laboratories Intl Inc	MA	\$219,276	\$17,124	\$15,010
84.	Diagnostic Products Corp	CA	\$216,193	\$20,488	\$14,547
85.	Biochem Pharma Inc		\$200,010	\$102,737	\$47,400
86.	Millennium Pharmaceuticals Inc	MA	\$183,679	(\$351,960)	\$56,775
87.	Mannatech Inc	TX	\$179,730	\$10,788	\$11,576
88.	Professional Veterinary Products Ltd	NE	\$178,547	\$557	\$1,093
89.	Laboratory Chile Inc		\$176,613	\$19,726	\$1,571
90.	Roberts Pharmaceutical Corp	NJ	\$175,445	\$16,787	
91.	Gilead Sciences Inc	CA	\$168,979	(\$66,486)	\$47,011
92.	Penford Corp	WA	\$158,150	\$10,362	\$15
93.	Polymedica Corp	MA	\$156,920	\$15,119	\$40,687
94.	Chirex Inc	CT	\$146,499	\$9,303	\$4,480
95.	K V Pharmaceutical Co	MO	\$145,970	\$24,308	\$3,443
96.	Qiagen Nv		\$143,960	\$12,617	\$12,140
97.	Medicis Pharmaceutical Corp	AZ	\$139,099	\$42,994	\$87,719
98.	Copley	MA	\$133,497	\$7,068	

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<b>RANK BY NET SALES</b>	<b>COMPANY NAME</b>	<b>STATE</b>	<b>SALES (CURRENT) 58<sup>TH</sup> TH USD</b>	<b>NET INCOME (CURRENT) TH USD</b>	<b>CASH TH USD 1999</b>
	Pharmaceutical Inc				
99.	Jones Pharma Inc	MO	\$132,544	\$48,944	\$111,003
100.	Serologicals Corp	GA	\$129,744	(\$15,462)	\$3,294
101.	Usana Health Sciences Inc	UT	\$129,386	\$5,901	\$1,411
102.	Nutramax Products Inc	MA	\$128,434	(\$2,871)	
103.	Inverness Medical Technology Inc	MA	\$125,131	(\$9,072)	\$5,234
104.	Nexstar Pharmaceuticals Inc	CO	\$118,549	\$10,920	
105.	Idec Pharmaceuticals Corp	CA	\$118,003	\$43,157	\$61,404
106.	E Z Em Inc	NY	\$112,093	\$5,965	\$8,073
107.	Celestial Seasonings Inc	CO	\$109,851	\$2,487	\$637
108.	Nutraceutical International Corp	UT	\$106,809	\$5,273	\$869
109.	Pharmacopeia Inc	NJ	\$103,959	\$3,771	\$17,157
110.	Techne Corp	MN	\$103,838	\$26,583	\$12,769
111.	Aaipharma Inc	NC	\$102,175	(\$7,913)	\$2,013
112.	Biovail Corp		\$101,224	\$45,419	
113.	Celltech Group Plc New		\$89,543	\$59,156	\$21,658
114.	Liposome Co Inc	NJ	\$86,203	\$13,051	\$34,461
115.	Ivc Industries Inc	NJ	\$85,868	\$5,074	\$287
116.	Taro Pharmaceutical Industries Ltd		\$83,785	\$5,539	\$3,003
117.	Collagen Aesthetics Inc	CA	\$82,772	(\$14,083)	
118.	Pharmaceutical Formulations Inc	NJ	\$82,174	(\$6,565)	\$122
119.	Natrol Inc	CA	\$81,590	\$9,188	\$485
120.	Hauser Inc	CO	\$81,162	(\$28,375)	\$1,273
121.	Bio Technology General Corp	NJ	\$80,687	\$13,862	\$18,703
122.	Pharmaceutical Resources Inc	NY	\$80,315	(\$1,774)	\$222
123.	Icos Corp	WA	\$79,600	(\$33,195)	\$12,885
124.	Immucor Inc	GA	\$76,540	\$2,812	\$2,794

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125.	Warner Chilcott Plc		\$74,035	(\$6,701)	\$50,954
126.	Biomatrix Inc	NJ	\$72,000	\$18,600	\$35,000
127.	Genzyme Transgenics Corp	MA	\$68,784	(\$18,761)	\$7,782
128.	Invitrogen Corp	CA	\$68,312	\$6,665	\$102,220
129.	Reliv International Inc	MO	\$67,974	(\$1,400)	\$1,532
130.	Akorn Inc	IL	\$64,632	\$6,670	\$25
131.	Praecis Pharmaceuticals Inc	MA	\$61,514	\$9,250	\$94,525
132.	Fuisz Technologies Ltd	VA	\$61,219	(\$23,579)	
133.	Pathogenesis Corp	WA	\$60,844	(\$8,195)	\$10,456
134.	Scios Inc	CA	\$60,787	(\$20,064)	\$11,582
135.	Sangstat Medical Corp	CA	\$58,168	(\$33,007)	\$16,862
136.	Cor Therapeutics Inc	CA	\$56,658	(\$26,070)	\$12,780
137.	Pdk Labs Inc	NY	\$54,706	\$2,137	\$2,946
138.	Meridian Diagnostics Inc	OH	\$53,927	\$2,073	\$6,229
139.	Heska Corp	CO	\$51,176	(\$35,836)	\$1,499
140.	Vertex Pharmaceuticals Inc	MA	\$50,560	(\$40,966)	\$31,548
141.	Duramed Pharmaceuticals Inc	OH	\$50,220	(\$51,023)	\$4
142.	Enzo Biochem Inc	NY	\$50,029	\$6,625	\$43,218
143.	Natural Alternatives International Inc	CA	\$47,827	(\$4,472)	\$1,063
144.	Clontech Laboratories Inc	CA	\$47,811	\$4,046	
145.	Bioreliance Corp	MD	\$47,192	(\$990)	\$12,626
146.	Cephalon Inc	PA	\$44,919	(\$69,944)	\$13,152
147.	Theragenics Corp	GA	\$43,718	\$16,012	\$18,765
148.	Vivus Inc	CA	\$43,188	\$18,801	\$8,785
149.	Advanced Tissue Sciences Inc	CA	\$42,803	(\$21,306)	\$21,091
150.	Quidel Corp	CA	\$42,241	(\$1,536)	\$4,672
151.	Compare Generiks	NY	\$41,310	\$270	\$53

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	Inc				
152.	Dynamic Health Products Inc	FL	\$40,936	\$6,451	\$1,959
153.	Cn Biosciences Inc	CA	\$39,445	(\$2,980)	
154.	Phoenix Intl Life Sciences Chrysalis Inc	NJ	\$39,384	(\$12,157)	
155.	Axys Pharmaceuticals Inc	CA	\$38,257	(\$48,763)	\$23,577
156.	Theratech Inc De	UT	\$38,205	\$5,851	
157.	V I Technologies Inc	NY	\$37,923	(\$37,329)	\$26,886
158.	Penwest Pharmaceuticals Co	NY	\$37,207	(\$7,681)	\$739
159.	Kos Pharmaceuticals Inc	FL	\$36,340	(\$54,552)	\$4,336
160.	Omni Nutraceuticals Inc	CA	\$35,308	(\$8,861)	
161.	Medtox Scientific Inc	MN	\$35,003	\$1,419	\$576
162.	Sequus Pharmaceuticals Inc	CA	\$34,998	(\$23,581)	
163.	Igi Inc	NJ	\$34,594	(\$1,584)	\$416
164.	Regeneron Pharmaceuticals Inc	NY	\$34,499	(\$23,070)	\$23,697
165.	Coulter Pharmaceutical Inc	CA	\$34,250	(\$97,223)	\$22,168
166.	Myriad Genetics Inc	UT	\$34,013	(\$8,722)	\$5,405
167.	Isis Pharmaceuticals Inc	CA	\$33,925	(\$59,225)	\$35,296
168.	Cell Genesys Inc	CA	\$33,607	(\$11,994)	\$5,300
169.	Ambi Inc	NY	\$32,814	\$6,490	\$4,458
170.	Noven Pharmaceuticals Inc	FL	\$31,650	\$10,460	\$15,338
171.	Synbiotics Corp	CA	\$30,757	(\$1,410)	\$2,260

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172.	Draxis Health Inc		\$30,144	(\$5,913)	\$2,017
173.	U S Bioscience Inc	PA	\$29,471	(\$9,054)	
174.	Boston Biomedica Inc	MA	\$29,271	(\$814)	\$315
175.	Biosource International Inc	CA	\$29,257	\$3,577	\$4,645
176.	Dynagen Inc	MA	\$29,140	(\$8,151)	\$311
177.	Sonic Innovations Inc	UT	\$28,694	(\$14,906)	\$5,939
178.	Skyepharm Plc		\$28,671	(\$31,379)	\$22,101
179.	Carrington Laboratories Inc	TX	\$28,128	(\$2,033)	\$2,453
180.	Gliatech Inc	OH	\$27,952	(\$395)	\$3,350
181.	Genset Sa		\$27,824	(\$22,212)	\$21,246
182.	Medco Research Inc	NC	\$27,544	\$16,242	
183.	Triplos Inc	MO	\$27,249	(\$2,289)	\$813
184.	Connetics Corp	CA	\$26,906	(\$27,283)	\$8,460
185.	Protein Design Labs Inc	CA	\$26,811	(\$10,333)	\$17,138
186.	Corixa Corp	WA	\$26,498	(\$54,758)	\$780
187.	Genome Therapeutics Corp	MA	\$26,424	(\$2,816)	\$12,802
188.	Hi Tech Pharmaceutical Co Inc	NY	\$26,414	\$1,692	\$4,204
189.	Celgene Corp	NJ	\$26,210	(\$21,781)	\$15,255
190.	Trinity Biotech Plc		\$26,105	\$4,916	\$3,064
191.	Quigley Corp	PA	\$24,820	(\$4,204)	\$13,990
192.	Human Genome Sciences Inc	MD	\$24,524	(\$42,169)	\$180,839
193.	Tularik Inc	CA	\$23,806	(\$25,538)	\$95,269
194.	Neogen Corp	MI	\$23,512	\$3,074	\$1,063
195.	Abaxis Inc	CA	\$23,230	(\$577)	\$2,049
196.	Digene Corp	MD	\$23,044	(\$6,767)	\$13,934
197.	Sepracor Inc	MA	\$22,659	(\$183,059)	\$59,488
198.	Osi Pharmaceuticals Inc	NY	\$22,652	(\$9,798)	\$8,864
199.	Aviron	CA	\$22,232	(\$61,870)	\$28,081
200.	Albany Molecular Research Inc	NY	\$22,027	\$13,774	\$2,673
201.	Vysis Inc	IL	\$21,695	(\$9,842)	\$4,818

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202.	Guilford Pharmaceuticals Inc	MD	\$21,561	(\$26,868)	\$14,336
203.	Alexion Pharmaceuticals Inc	CT	\$21,441	(\$20,227)	\$24,238
204.	Gensci Regeneration Sciences Inc		\$21,065	(\$12,172)	\$3,355
205.	Immune Response Corp	CA	\$20,755	(\$14,968)	\$4,183
206.	Igen International Inc	MD	\$20,661	(\$32,405)	\$3,172
207.	Bentley Pharmaceuticals Inc	FL	\$20,249	(\$1,090)	\$4,422
208.	Women First Healthcare Inc	CA	\$20,152	(\$30,135)	\$32,719
209.	Hemacare Corp	CA	\$19,021	\$1,057	\$1,490
210.	Ansys Diagnostics Inc	CA	\$18,964	\$2,691	
211.	Columbia Laboratories Inc	FL	\$18,921	(\$2,210)	\$1,982
212.	Mgi Pharma Inc	MN	\$18,643	\$4,731	\$8,249
213.	Arqule Inc	MA	\$18,582	(\$17,433)	\$4,208
214.	Hycor Biomedical Inc	CA	\$18,426	\$249	\$551
215.	Qlt Inc		\$18,078	(\$23,276)	\$66,645
216.	Chem International Inc	NJ	\$17,975	\$3,144	\$299
217.	Ilex Oncology Inc	TX	\$17,864	(\$46,055)	\$43,477
218.	Enzon Inc	NJ	\$17,018	(\$6,306)	\$24,674
219.	Genvec Inc	MD	\$16,950	(\$1,919)	\$8,470
220.	Dyax Corp	MA	\$16,833	(\$13,187)	\$16,726
221.	Neurocrine Biosciences Inc	CA	\$16,791	(\$16,822)	\$21,265
222.	Healthcare Technologies Ltd		\$16,583	(\$191)	\$1,129
223.	Large Scale Biology Corp	CA	\$16,090	(\$27,917)	\$6,975
224.	Collagenex Pharmaceuticals Inc	PA	\$16,081	(\$14,591)	\$7,981
225.	Progenics	NY	\$16,014	(\$496)	\$24,212

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	Pharmaceuticals Inc				
226.	Alliance Pharmaceutical Corp	CA	\$16,000	(\$46,467)	\$19,081
227.	Unimed Pharmaceuticals Inc	IL	\$15,869	(\$8,939)	
228.	Pure World Inc	NJ	\$15,779	(\$2,141)	\$5,598
229.	Natural Health Trends Corp	NY	\$15,270	(\$7,253)	\$587
230.	Nexell Therapeutics Inc	DE	\$14,961	(\$35,673)	\$28,695
231.	Sugen Inc	CA	\$14,916	(\$39,627)	
232.	Clinicor Inc	TX	\$14,780	(\$1,114)	\$673
233.	Hemagen Diagnostics Inc	MA	\$14,589	(\$5,160)	\$289
234.	Miravant Medical Technologies	CA	\$14,577	(\$22,256)	\$19,168
235.	Pml Inc	OR	\$14,002	\$392	\$1
236.	Ligand Pharmaceuticals Inc	CA	\$13,917	(\$74,719)	\$29,903
237.	Novogen Ltd		\$13,831	(\$11,499)	\$19,803
238.	Genemedicine Inc	TX	\$13,706	(\$46,861)	
239.	Visible Genetics Inc		\$13,627	(\$25,287)	\$2,793
240.	Anika Therapeutics Inc	MA	\$13,483	(\$2,496)	\$6,441
241.	Intracel Corp	WA	\$13,452	(\$8,479)	
242.	Onyx Pharmaceuticals Inc	CA	\$13,324	(\$14,802)	\$12,671
243.	Polydex Pharmaceuticals Ltd		\$13,096	\$970	\$800
244.	Discovery Partners International Inc	CA	\$13,076	(\$3,370)	\$2,885
245.	Provalis Plc		\$13,015	(\$29,489)	
246.	Lifecell Corp	NJ	\$12,676	(\$9,192)	\$4,737
247.	Cima Labs Inc	MN	\$12,657	(\$1,262)	\$2,481
248.	Exelixis Inc	CA	\$12,514	(\$16,717)	\$5,400
249.	Ariad Pharmaceuticals	MA	\$12,468	\$24,192	\$28,320

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	Inc				
250.	Sonus Pharmaceuticals Inc	WA	\$12,050	\$435	\$16,804
251.	Oncor Inc	MD	\$11,980	(\$27,266)	
252.	Naturade Inc	CA	\$11,947	(\$9,697)	\$1,056
253.	Immunogen Inc	MA	\$11,559	(\$238)	\$4,226
254.	Menley & James Inc	PA	\$11,554	(\$7,115)	
255.	Lannett Co Inc	PA	\$11,553	\$1,350	\$117
256.	Tutogen Medical Inc	NJ	\$11,464	\$414	\$376
257.	Halsey Drug Co Inc	IL	\$11,420	(\$20,063)	\$786
258.	Amarin Corp Plc		\$11,222	\$4,372	\$1,607
259.	Cytogen Corp	NJ	\$11,202	\$729	\$10,801
260.	Aronex Pharmaceuticals Inc	TX	\$11,052	(\$14,094)	\$11,528
261.	Trimeris Inc	NC	\$11,034	(\$62,990)	\$37,023
262.	North American Vaccine Inc	MD	\$10,958	(\$49,573)	\$563
263.	Chesapeake Biological Laboratories Inc	MD	\$10,781	\$2,418	\$945
264.	Argonaut Technologies Inc	CA	\$10,558	(\$7,603)	\$4,946
265.	Oravax Inc	MA	\$10,542	(\$12,402)	
266.	Flamel Technologies Sa		\$10,518	(\$6,725)	\$5,234
267.	Neurogen Corp	CT	\$10,209	(\$14,618)	\$31,588
268.	Epitope Inc	OR	\$10,073	(\$3,206)	\$1,076
269.	Derma Sciences Inc	NJ	\$10,056	(\$2,406)	\$1,222
270.	Endogen Inc	MA	\$10,033	\$458	
271.	Medarex Inc	NJ	\$9,924	(\$17,031)	\$14,366
272.	Cantab Pharmaceuticals Plc		\$9,798	(\$14,110)	\$5,864
273.	Unigene Laboratories Inc	NJ	\$9,589	(\$1,577)	\$683
274.	Microcide Pharmaceuticals Inc	CA	\$9,448	(\$10,746)	\$5,660

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275.	Sciclone Pharmaceuticals Inc	CA	\$9,398	(\$5,467)	\$1,828
276.	Neuromedical Systems Inc	NJ	\$9,374	(\$36,581)	
277.	Oralabs Holding Corp	CO	\$9,161	\$546	\$646
278.	United Guardian Inc	NY	\$9,137	\$1,390	\$2,015
279.	Biopool International Inc	CA	\$8,842	\$714	\$2,749
280.	Biotransplant Inc	MA	\$8,688	(\$8,673)	\$17,649
281.	Bei Medical Systems Co Inc	NJ	\$8,419	(\$6,909)	\$1,654
282.	Introgen Therapeutics Inc	TX	\$8,388	(\$7,724)	\$2,146
283.	Senetek Plc		\$8,263	(\$11,862)	\$1,840
284.	Biomerica Inc	CA	\$8,034	(\$3,891)	\$1,669
285.	Genelabs Technologies Inc	CA	\$8,017	(\$12,821)	\$2,534
286.	Intrabiotics Pharmaceuticals Inc	CA	\$7,863	(\$23,115)	\$18,862
287.	Bigmar Inc	OH	\$7,725	(\$6,324)	\$156
288.	Metra Biosystems Inc	CA	\$7,706	(\$11,922)	
289.	Ribozyme Pharmaceuticals Inc	CO	\$7,664	(\$10,661)	\$9,750
290.	American Bio Medica Corp	NY	\$7,653	(\$2,136)	\$131
291.	Napro Biotherapeutics Inc	CO	\$7,592	(\$9,002)	\$1,937
292.	Docplanet Com Inc	CA	\$7,590	(\$3,906)	\$57
293.	Crescendo Pharmaceuticals Corp	CA	\$7,439	(\$88,443)	\$54,682
294.	Centaur Pharmaceuticals Inc	CA	\$7,429	(\$13,285)	\$5,197
295.	Cyanotech Corp	HI	\$7,398	(\$4,485)	\$405
296.	Oxis International Inc	OR	\$7,165	(\$4,447)	\$789

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297.	Allergan Specialty Therapeutics Inc	CA	\$7,110	(\$52,806)	\$47
298.	Ascent Pediatrics Inc	MA	\$7,047	(\$15,653)	\$1,067
299.	Sibia Neurosciences Inc	CA	\$7,043	(\$15,807)	
300.	Health Chem Corp	NY	\$6,907	(\$10,645)	
301.	Depotech Corp	CA	\$6,878	(\$21,408)	
302.	Targeted Genetics Corp	WA	\$6,848	(\$26,655)	\$4,101
303.	British Biotech Plc		\$6,811	(\$64,246)	\$158,927
304.	Hybridon Inc	MA	\$6,786	(\$10,503)	\$2,552
305.	Array Biopharma Inc	CO	\$6,774	(\$4,730)	\$2,186
306.	Rockwell Medical Technologies Inc	MI	\$6,689	(\$1,071)	\$1,093
307.	Pharmaprint Inc	CA	\$6,493	(\$27,596)	\$303
308.	Orphan Medical Inc	MN	\$6,457	(\$5,221)	\$206
309.	Hyseq Inc	CA	\$6,397	(\$18,547)	\$13,675
310.	Diatide Inc	NH	\$6,385	(\$10,217)	
311.	Martek Biosciences Corp	MD	\$6,133	(\$14,848)	\$1,180
312.	Superior Supplements Inc	NY	\$6,102	(\$1,504)	\$28
313.	Corvas International Inc	CA	\$6,088	(\$13,017)	\$881
314.	Cadus Pharmaceutical Corp	NY	\$6,028	(\$8,524)	\$5,096
315.	Emisphere Technologies Inc	NY	\$5,889	(\$26,897)	\$11,461
316.	Anergen Inc	CA	\$5,763	(\$8,430)	
317.	Nastech Pharmaceutical Co Inc	NY	\$5,631	(\$8,350)	\$10,652
318.	Valentis Inc	CA	\$5,589	(\$47,655)	\$4,785
319.	Cortex Pharmaceuticals Inc	CA	\$5,508	(\$200)	\$909
320.	Tcpi Inc	FL	\$5,432	(\$15,339)	\$1,447
321.	Ribi Immunochem Research Inc	MT	\$5,379	(\$7,633)	
322.	Cubist	MA	\$5,353	(\$17,814)	\$11,571

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	Pharmaceuticals Inc				
323.	Geron Corp	CA	\$5,244	(\$46,376)	\$7,835
324.	Palatin Technologies Inc	NJ	\$5,117	(\$8,183)	\$2,334
325.	Entremed Inc	MD	\$5,018	(\$36,886)	\$26,027
326.	Immucell Corp	ME	\$4,909	\$551	\$1,824
327.	Immunomedics Inc	NJ	\$4,777	(\$9,636)	\$3,469
328.	Insite Vision Inc	CA	\$4,760	\$1,150	\$6,746
329.	Supergen Inc	CA	\$4,744	(\$36,985)	\$22,546
330.	Ostex International Inc	WA	\$4,732	(\$1,570)	\$1,562
331.	Procyte Corp	WA	\$4,695	(\$5,315)	\$3,883
332.	La Jolla Pharmaceutical Co	CA	\$4,690	(\$9,149)	\$4,409
333.	Healthrite Inc	MD	\$4,651	(\$3,269)	\$154
334.	Ophidian Pharmaceuticals Inc	WI	\$4,623	(\$16,313)	\$3,416
335.	Xenova Group Plc		\$4,353	(\$16,347)	\$15,463
336.	Transgene Sa		\$4,345	(\$18,308)	\$50,469
337.	Versicor Inc	CA	\$4,275	(\$29,219)	\$34,619
338.	Aeterna Laboratories Inc		\$4,243	(\$2,715)	\$4,152
339.	Epimmune Inc	CA	\$4,168	(\$8,265)	\$1,843
340.	Genetronics Biomedical Ltd	CA	\$4,134	(\$9,600)	\$9,742
341.	Sentigen Holding Corp	NJ	\$3,917	\$641	\$126
342.	Transkaryotic Therapies Inc	MA	\$3,870	(\$44,456)	\$151,202
343.	Spectral Diagnostics Inc		\$3,763	(\$9,089)	
344.	Calypte Biomedical Corp	CA	\$3,728	(\$10,026)	\$2,652
345.	Bionutrics Inc	AZ	\$3,690	(\$5,623)	\$680
346.	3 Dimensional Pharmaceuticals Inc	PA	\$3,580	(\$5,565)	
347.	Corgenix Medical Corp	CO	\$3,545	\$200	\$16
348.	Biospecifics Technologies Corp	NY	\$3,544	\$160	\$4,221

*"Big Pharma :” Mergers, Drug Costs and Health Caregiver Staffing Ratios*

<b>RANK BY NET SALES</b>	<b>COMPANY NAME</b>	<b>STATE</b>	<b>SALES (CURRENT) 58<sup>TH</sup> TH USD</b>	<b>NET INCOME (CURRENT) TH USD</b>	<b>CASH TH USD 1999</b>
349.	Dendreon Corp	WA	\$3,519	(\$12,679)	\$7,085
350.	Repligen Corp	MA	\$3,451	(\$3,816)	\$25,227
351.	Nps Pharmaceuticals Inc	UT	\$3,445	(\$35,654)	\$13,116
352.	Cellomics Inc	PA	\$3,390	(\$10,135)	\$1,341
353.	Spectrx Inc	GA	\$3,337	(\$6,538)	\$2,143
354.	Algos Pharmaceutical Corp	NJ	\$3,311	(\$49,411)	\$30,752
355.	Pharmos Corp	NJ	\$3,279	(\$4,618)	\$2,919
356.	Therapeutic Antibodies Inc	TN	\$3,271	(\$15,889)	
357.	Advanced Magnetics Inc	MA	\$3,227	(\$4,442)	\$17,053
358.	Ribogene Inc	CA	\$3,163	(\$6,561)	
359.	Creative Biomolecules Inc	MA	\$3,159	(\$12,110)	\$2,751
360.	Salix Pharmaceuticals Ltd	CA	\$3,093	(\$4,611)	\$2,402
361.	Diacrin Inc	MA	\$2,971	(\$4,760)	\$2,194
362.	Vion Pharmaceuticals Inc	CT	\$2,964	(\$10,769)	\$11,105
363.	Caraco Pharmaceutical Laboratories Ltd	MI	\$2,895	(\$9,740)	\$446
364.	Biopure Corp	MA	\$2,866	(\$35,530)	\$30,778
365.	Organogenesis Inc	MA	\$2,676	(\$28,350)	\$5,727
366.	Antex Biologics Inc	MD	\$2,620	(\$3,484)	\$1,706
367.	Cocensys Inc	CA	\$2,586	(\$15,226)	
368.	Biocryst Pharmaceuticals Inc	AL	\$2,500	(\$5,298)	\$8,631
369.	Avitar Inc New	MA	\$2,495	(\$3,118)	\$281
370.	Vical Inc	CA	\$2,417	(\$6,909)	\$11,150
371.	Cerus Corp	CA	\$2,408	(\$22,628)	\$3,537
372.	Neurex Corp	CA	\$2,392	(\$31,880)	
373.	Xoma Ltd	CA	\$2,361	(\$45,779)	\$18,539
374.	Interferon Sciences Inc	NJ	\$2,329	(\$3,602)	\$2,273
375.	Anesta Corp	UT	\$2,232	(\$9,488)	\$11,746

*"Big Pharma :” Mergers, Drug Costs and Health Caregiver Staffing Ratios*

<b>RANK BY NET SALES</b>	<b>COMPANY NAME</b>	<b>STATE</b>	<b>SALES (CURRENT) 58<sup>TH</sup> TH USD</b>	<b>NET INCOME (CURRENT) TH USD</b>	<b>CASH TH USD 1999</b>
376.	Fountain Pharmaceuticals Inc	FL	\$2,211	(\$1,735)	\$177
377.	One World Online Com Inc	UT	\$2,169	(\$6,686)	\$3,259
378.	Gen Trak Inc	PA	\$2,149	(\$1,662)	
379.	Imclone Systems Inc	NY	\$2,143	(\$34,611)	\$12,016
380.	Pacifichealth Laboratories Inc	NJ	\$2,112	(\$1,225)	\$1,742
381.	Incara Pharmaceuticals Corp	NC	\$2,088	(\$19,598)	\$2,407
382.	Texas Biotechnology Corp	TX	\$2,083	(\$15,297)	\$2,804
383.	Aquila Biopharmaceutical s Inc	MA	\$2,068	(\$8,195)	\$524
384.	Cypress Bioscience Inc	CA	\$1,873	(\$7,785)	\$11,570
385.	Synaptic Pharmaceutical Corp	NJ	\$1,855	(\$15,121)	\$6,236
386.	Orchid Biosciences Inc	NJ	\$1,793	(\$24,103)	\$938
387.	Cryomedical Sciences Inc	MD	\$1,777	(\$1,176)	\$8
388.	Anthra Pharmaceuticals Inc	NJ	\$1,688	(\$5,465)	
389.	Whitewing Labs Inc	CA	\$1,665	(\$714)	\$79
390.	Pharmacyclics Inc	CA	\$1,604	(\$23,630)	\$3,930
391.	Interneuron Pharmaceuticals Inc	MA	\$1,599	(\$37,762)	\$19,354
392.	Symbollon Corp	MA	\$1,514	(\$730)	\$2,824
393.	Biomune Systems Inc	UT	\$1,501	(\$1,878)	
394.	Nexmed Inc	NJ	\$1,492	(\$2,491)	\$5,119
395.	Biomarin Pharmaceutical Inc	CA	\$1,486	(\$28,072)	\$23,413
396.	Avant	MA	\$1,484	(\$11,309)	\$13,619

*"Big Pharma :” Mergers, Drug Costs and Health Caregiver Staffing Ratios*

<b>RANK BY NET SALES</b>	<b>COMPANY NAME</b>	<b>STATE</b>	<b>SALES (CURRENT) 58<sup>TH</sup> TH USD</b>	<b>NET INCOME (CURRENT) TH USD</b>	<b>CASH TH USD 1999</b>
	Immunotherapeutics Inc				
397.	Cambridge Neuroscience Inc	MA	\$1,443	(\$3,744)	\$3,333
398.	Tanox Inc	TX	\$1,405	(\$23,346)	\$44,242
399.	Cytoclonal Pharmaceuticals Inc	TX	\$1,375	(\$4,357)	\$3,213
400.	Safescience Inc	MA	\$1,369	(\$12,302)	\$3,377
401.	American Biogenetic Sciences Inc	NY	\$1,361	(\$5,351)	\$93
402.	Atherogenics Inc	GA	\$1,347	(\$10,433)	\$13,409
403.	Oxigene Inc	MA	\$1,272	(\$10,449)	\$30,448
404.	Life Medical Sciences Inc	NJ	\$1,249	(\$955)	\$724
405.	Impax Laboratories Inc	PA	\$1,240	(\$8,949)	\$7,413
406.	Zymetx Inc	OK	\$1,225	(\$6,779)	\$11
407.	Atlantic Technology Ventures Inc	NY	\$1,160	(\$2,447)	\$3,473
408.	Aastrom Biosciences Inc	MI	\$1,150	(\$9,390)	\$7,528
409.	Epix Medical Inc	MA	\$1,144	(\$16,983)	\$430
410.	Maxim Pharmaceuticals Inc	CA	\$1,078	(\$39,709)	\$6,544
411.	Virologic Inc	CA	\$1,069	(\$15,958)	\$2,208
412.	Shaman Pharmaceuticals Inc	CA	\$1,050	(\$16,491)	\$1,172
413.	Biotime Inc	CA	\$1,038	(\$5,480)	\$5,293
	<b>Totals (Thousands of U.S. Dollars)</b>		<b>\$411,534,082</b>	<b>\$43,587,412</b>	<b>\$37,411,900</b>

**C. Pharmaceutical Acquirers: 1993 through January, 2001**

**Pharmaceutical Acquirers: 1993 through Jan 2001: Sorted by Number of Transactions**

**Table 25 Pharmaceutical Acquirers: 1993 through January 2001**

<b>Purchaser</b>	<b>Transactions</b>
Omnicare, Inc.	64
NCS HealthCare, Inc.	35
Capstone Pharmacy Services	17
PharMerica, Inc.	13
GranCare, Inc.	11
Cardinal Health, Inc.	7
Vitalink Pharmacy Services, Inc.	7
Living Centers of America, Inc.	6
Advance Paradigm, Inc.	5
Genesis Health Ventures, Inc.	5
Sun Healthcare Group	5
Arbor Health Care Company	4
Beverly Enterprises, Inc.	4
Healthcomp Evaluation Services Corp.	4
Integrated Health Services, Inc.	4
Regency Health Services, Inc.	4
Accredo Health, Inc.	3
American Medserve, Inc.	3
CompHealth	3
CompScript, Inc.	3
Geriatric & Medical Companies, Inc.	3
Horizon Pharmacies, Inc.	3
Value Health, Inc.	3
Andrx Corporation	2
Bergen Brunswick Corp.	2
Biovail Corporation	2
Chronimed, Inc.	2
Express Scripts, Inc.	2
Express-Med, Inc.	2
Flagship Healthcare, Inc.	2
Future HealthCare Inc.	2
Genzyme General	2
Homecare Management, Inc.	2
IVAX Corporation	2
MIM Corporation	2
Pediatric Services of America	2
Priority Healthcare Corporation	2

<b>Purchaser</b>	<b>Transactions</b>
ProxyMed Pharmacy, Inc.	2
Stadtlander Drug Distribution	2
Transworld Home HealthCare	2
Unison HealthCare Corporation	2
Abbott Laboratories	1
Aceto Corporation	1
Alliance Pharmaceutical Corp.	1
Alza Corp.	1
America Service Group, Inc.	1
American HomePatient, Inc.	1
Arrow Corporation	1
Baxter International, Inc.	1
BioKeys, Inc.	1
Bristol-Myers Squibb Holdings Ltd.	1
Celgene Corporation	1
CeNeS Pharmaceuticals	1
Cephalon, Inc.	1
Charterhouse Group International, Inc.	1
Choice Drug Systems, Inc.	1
Cigna Healthcare	1
Columbia/HCA Healthcare Corp.	1
Complete Wellness Centers, Inc.	1
Concord Health Group, Inc.	1
Consolidated Medical Management, Inc.	1
Continental Health Affiliates	1
CVS Corporation	1
Cytomedix, Inc.	1
DENTSPLY International, Inc.	1
Deproco, Inc.	1
Dura Pharmaceuticals, Inc.	1
Elan Corporation, plc.	1
e-MedSoft.com	1
Familymeds Group, Inc.	1
Fisher Scientific International, Inc.	1
Future HealtCare of Massachusetts, Inc.	1
Galen Holdings plc.	1
Glaxo Wellcome PLC	1
GlaxoSmithKline plc	1
Go2Pharmacy.com, Inc.	1
Healthcare Managment, Inc.	1
HealthExtras, Inc.	1
HEMOXymed, Inc.	1
Hollis-Eden Pharmaceuticals, Inc.	1
Horizon Healthcare Corporation	1

<b>Purchaser</b>	<b>Transactions</b>
IMX Pharmaceuticals, Inc.	1
INC Research	1
Indigo Acquisition Corp.	1
Inhale Therapeutic Systems, Inc.	1
Innovative Clinical Solutions, Ltd	1
Integrative Therapeutics, Inc.	1
Interwest Home Medical, Inc.	1
Johnson & Johnson	1
King Pharmaceuticals, Inc.	1
LabOne, Inc.	1
Management Buyout	1
Mariner Health Group	1
McKesson Corp.	1
Medical Industries of America	1
Medisys plc	1
Medview Services, Incorporated	1
Merck & Co.	1
Merck & Company	1
Merck-Medco Managed Care	1
National Medical Health Card Systems	1
Novavax, Inc.	1
nTouch Research Corp.	1
Option Care, Inc.	1
PacifiCare Health Systems, Inc.	1
PAREXEL International Corporation	1
Park Pharmacy Corporation	1
Pharmacare Management Services, Inc.	1
Pharmacy Gold	1
ProCare Rx, Inc.	1
Promega Corporation	1
Providence Health Care, Inc.	1
Pyxis Corporation	1
Quintiles Transnational Corp.	1
R.P. Scherer Corporation	1
Rhodia	1
Rite Aid Corp.	1
SeraCare, Inc.	1
Shire Pharmaceuticals Group plc	1
Shopko Stores, Inc.	1
SmithKline Beecham PLC	1
Sparta Surgical Corporation	1
Sunscript Pharmacy Corporation	1
TeamCare	1
TechRX	1

<b>Purchaser</b>	<b>Transactions</b>
The Hillhaven Corporation	1
Thermacell Technologies, Inc.	1
Total Pharmaceutical Care, Inc.	1
United Healthcare Corp.	1
United Therapeutics Corporation	1
Unity Health	1
Vitalink Pharmacy Services	1
Walgreens Healthcare Plus, Inc...	1
Watson Pharmaceuticals, Inc.	1
WellPoint Health Networks, Inc.	1
Zeneca Group, PLC	1
Zeneca, Inc.	1

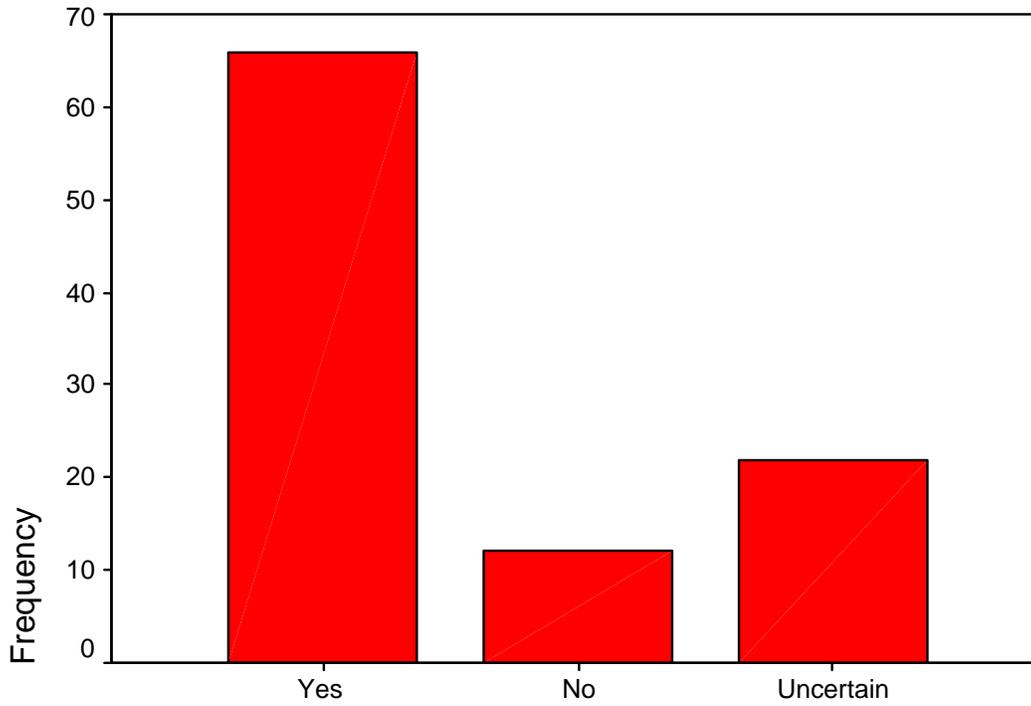
**D. Hospital Survey Charts**

Mergers Lead to Higher Prices

		FREQUENCY	PERCENT	VALID PERCENT	CUMULATIVE PERCENT
Valid	Yes	66	66.0	66.0	66.0
	No	12	12.0	12.0	78.0
	Uncertain	22	22.0	22.0	100.0
	Total	100	100.0	100.0	

National

**Mergers Lead to Higher Prices**



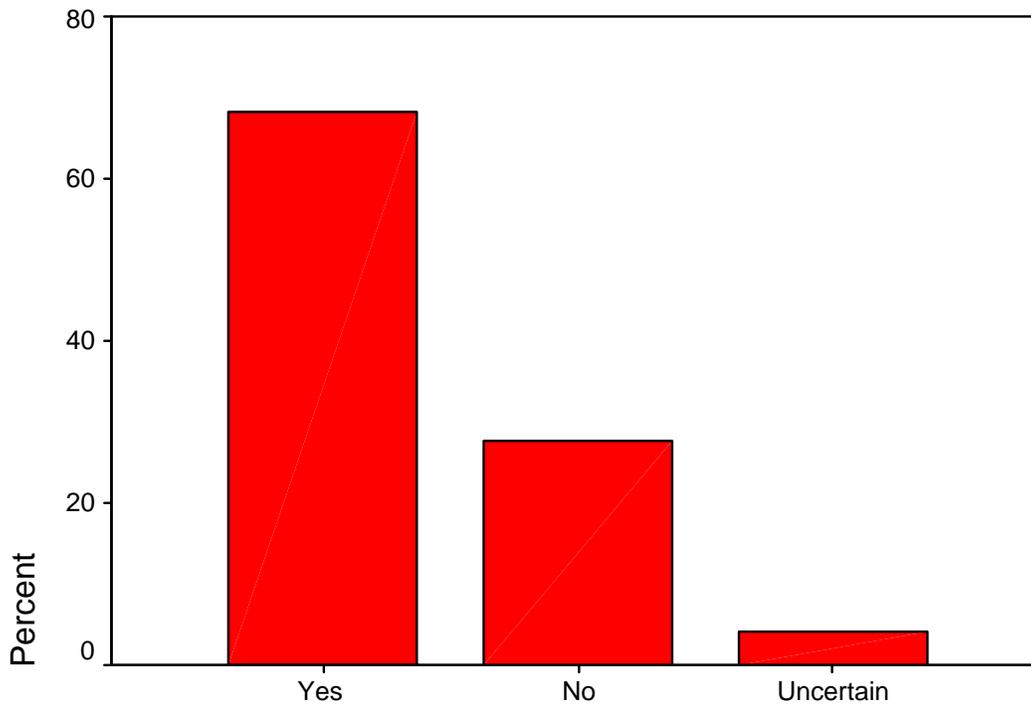
Mergers Lead to Higher Prices

Drug Prices Lead to Hospital Staffing Cuts

		FREQUENCY	PERCENT	VALID PERCENT	CUMULATIVE PERCENT
Valid	Yes	67	67.0	68.4	68.4
	No	27	27.0	27.6	95.9
	Uncertain	4	4.0	4.1	100.0
	Total	98	98.0	100.0	
Missing	System	2	2.0		
Total		100	100.0		

National

Drug Prices Lead to Hospital Staffing Cuts



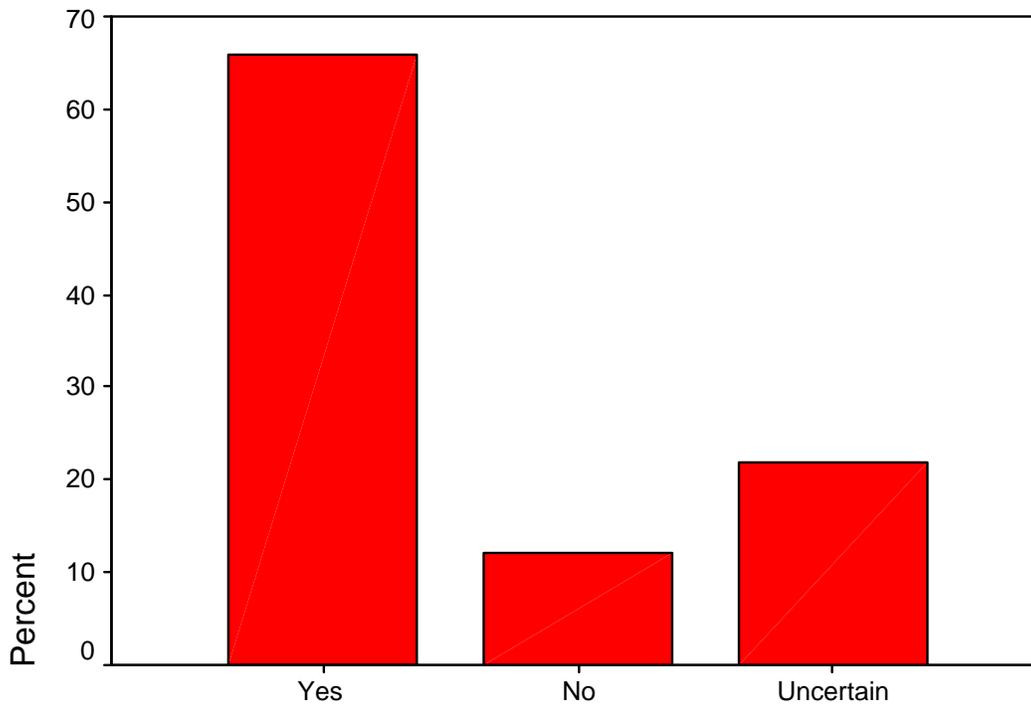
Drug Prices Lead to Hospital Staffing Cuts

Mergers Lead to Higher Prices

		FREQUENCY	PERCENT	VALID PERCENT	CUMULATIVE PERCENT
Valid	Yes	15	65.2	65.2	65.2
	No	2	8.7	8.7	73.9
	Uncertain	6	26.1	26.1	100.0
	Total	23	100.0	100.0	

Northeast Region: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Washington DC

Mergers Lead to Higher Prices



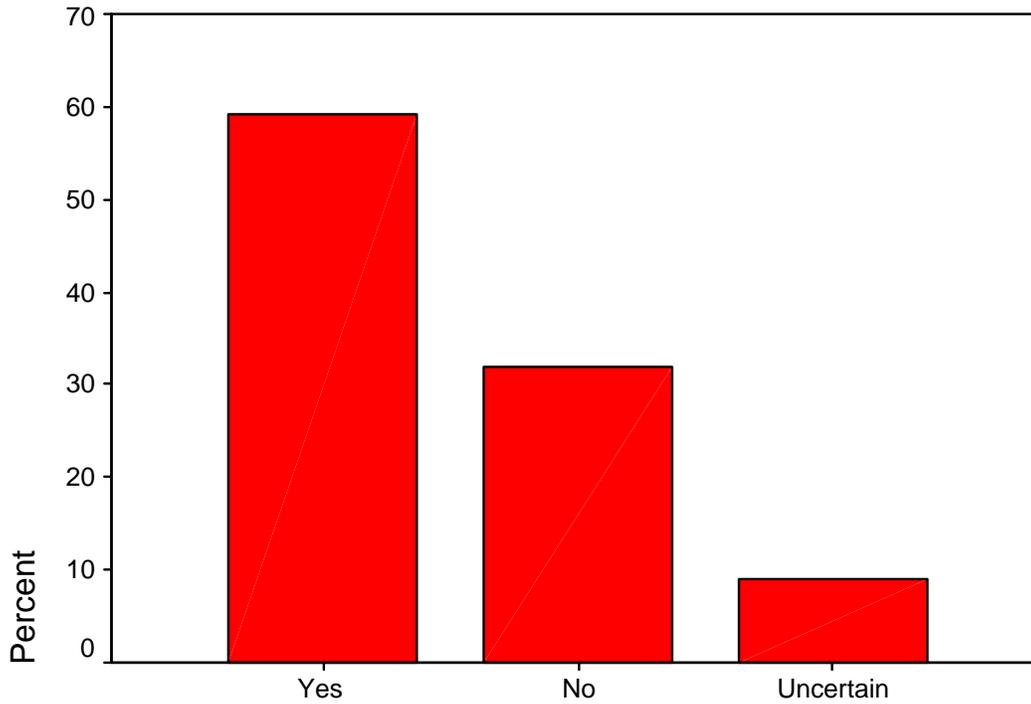
Mergers Lead to Higher Prices

Drug Prices Lead to Hospital Staffing Cuts

		FREQUENCY	PERCENT	VALID PERCENT	CUMULATIVE PERCENT
Valid	Yes	13	56.5	59.1	59.1
	No	7	30.4	31.8	90.9
	Uncertain	2	8.7	9.1	100.0
	Total	22	95.7	100.0	
Missing	System	1	4.3		
Total		23	100.0		

Northeast Region: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Washington DC

Drug Prices Lead to Hospital Staffing Cuts



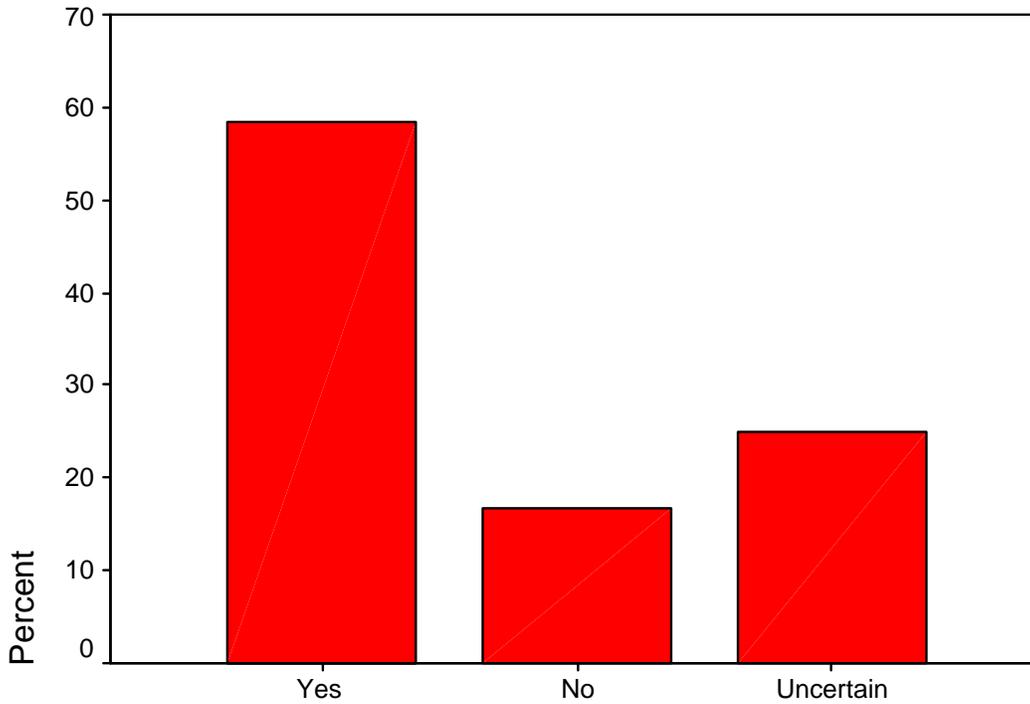
Drug Prices Lead to Hospital Staffing Cuts

Mergers Lead to Higher Prices

		FREQUENCY	PERCENT	VALID PERCENT	CUMULATIVE PERCENT
Valid	Yes	14	58.3	58.3	58.3
	No	4	16.7	16.7	75.0
	Uncertain	6	25.0	25.0	100.0
	Total	24	100.0	100.0	

Mid-West: Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin

Mergers Lead to Higher Prices



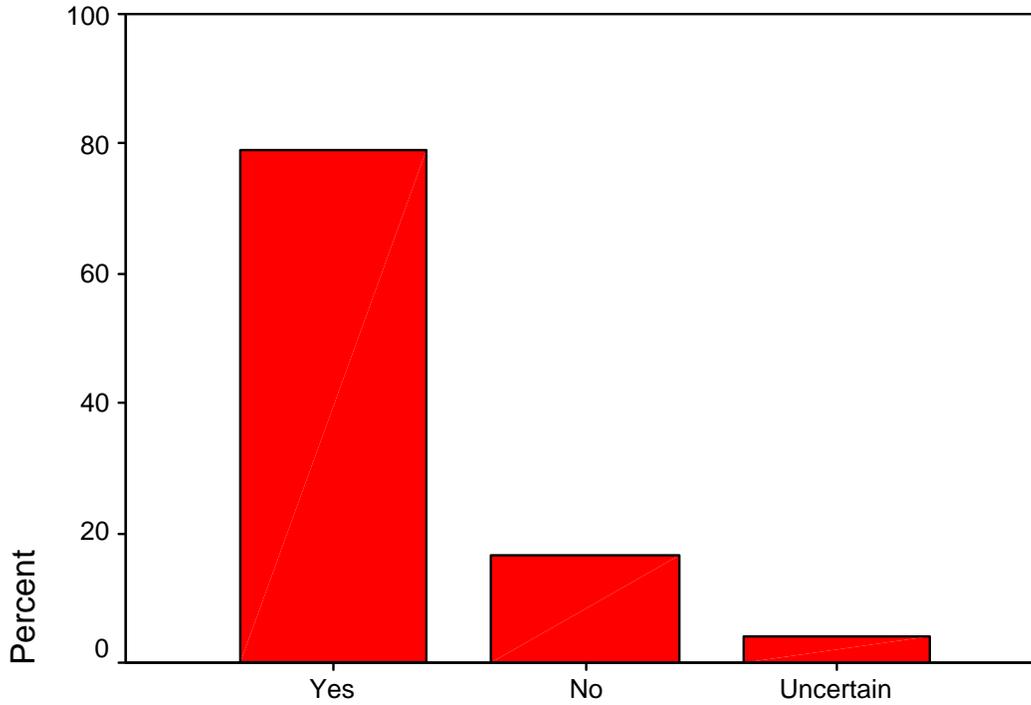
Mergers Lead to Higher Prices

Drug Prices Lead to Hospital Staffing Cuts

		FREQUENCY	PERCENT	VALID PERCENT	CUMULATIVE PERCENT
Valid	Yes	19	79.2	79.2	79.2
	No	4	16.7	16.7	95.8
	Uncertain	1	4.2	4.2	100.0
	Total	24	100.0	100.0	

Mid-West: Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin

Drug Prices Lead to Hospital Staffing Cuts



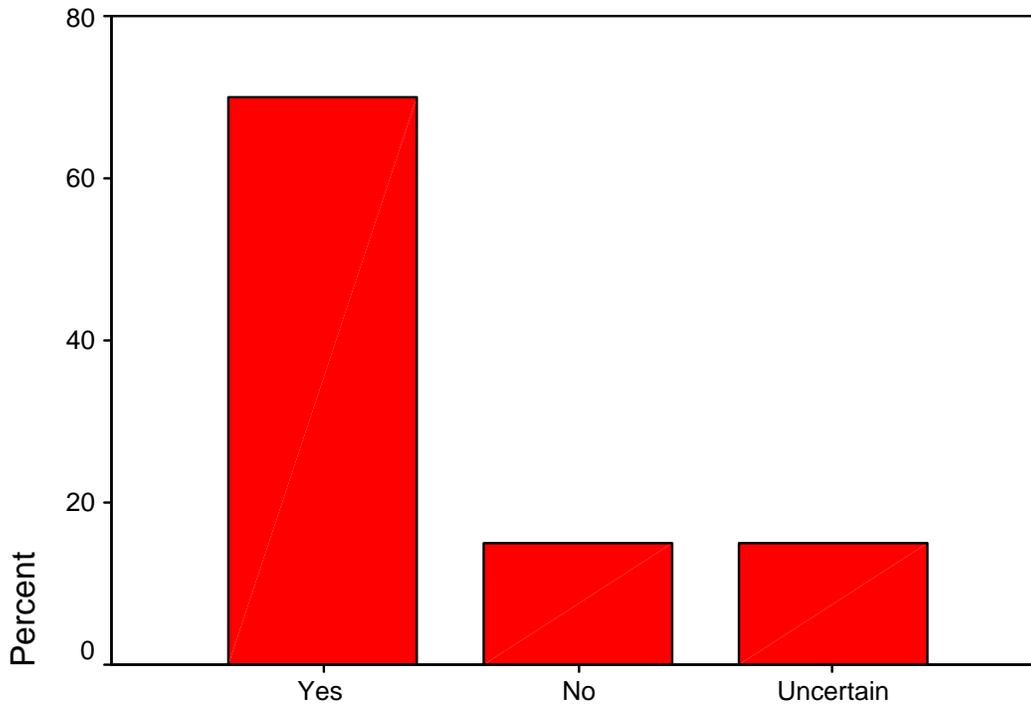
Drug Prices Lead to Hospital Staffing Cuts

Mergers Lead to Higher Prices

		FREQUENCY	PERCENT	VALID PERCENT	CUMULATIVE PERCENT
Valid	Yes	14	70.0	70.0	70.0
	No	3	15.0	15.0	85.0
	Uncertain	3	15.0	15.0	100.0
	Total	20	100.0	100.0	

South: Alabama, Arkansas, Kansas, Kentucky, Louisiana, Mississippi, Oklahoma, Tennessee, Texas

Mergers Lead to Higher Prices



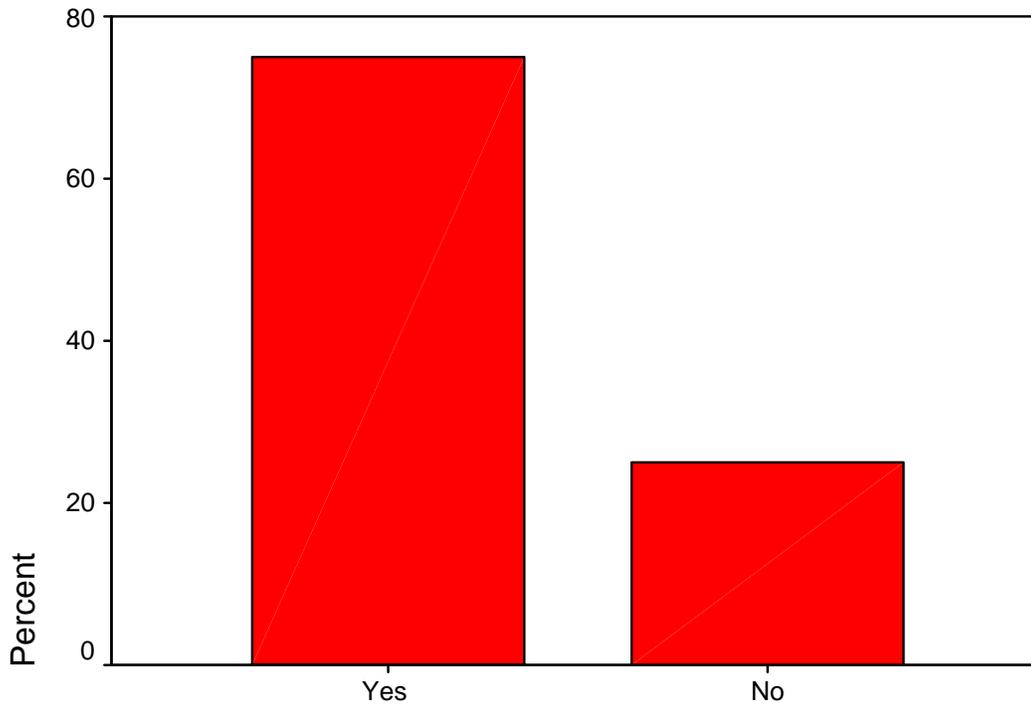
Mergers Lead to Higher Prices

Drug Prices Lead to Hospital Staffing Cuts

		FREQUENCY	PERCENT	VALID PERCENT	CUMULATIVE PERCENT
Valid	Yes	15	75.0	75.0	75.0
	No	5	25.0	25.0	100.0
	Total	20	100.0	100.0	

South: Alabama, Arkansas, Kansas, Kentucky, Louisiana, Mississippi, Oklahoma, Tennessee, Texas

Drug Prices Lead to Hospital Staffing Cuts



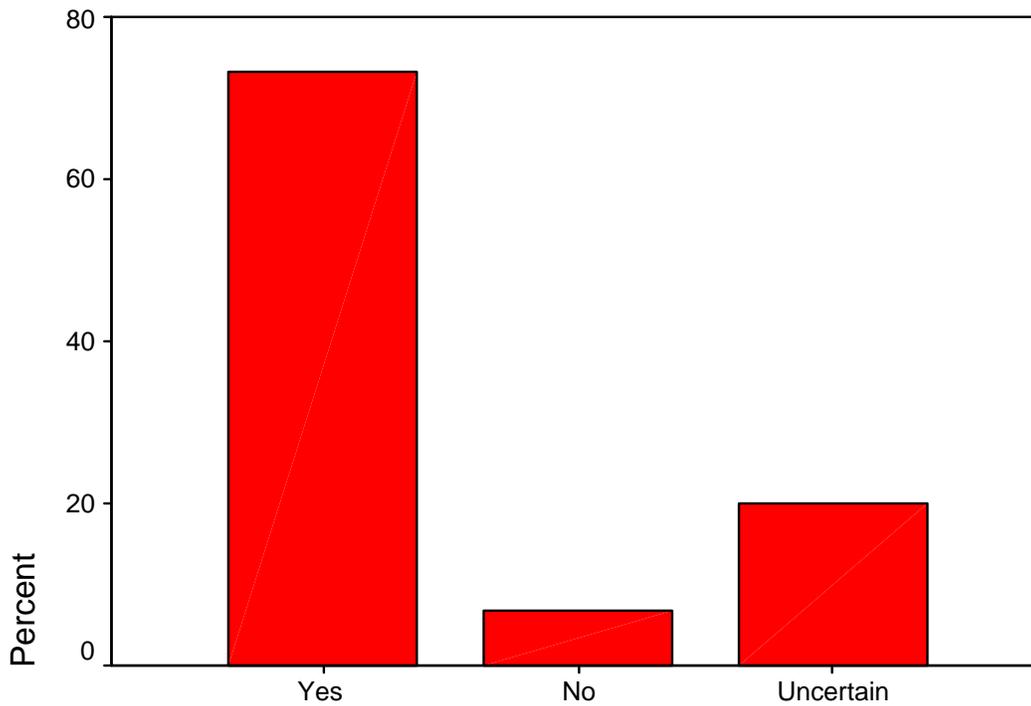
Drug Prices Lead to Hospital Staffing Cuts

Mergers Lead to Higher Prices

		FREQUENCY	PERCENT	VALID PERCENT	CUMULATIVE PERCENT
Valid	Yes	11	73.3	73.3	73.3
	No	1	6.7	6.7	80.0
	Uncertain	3	20.0	20.0	100.0
	Total	15	100.0	100.0	

Southeast: Florida, Georgia, North Carolina, South Carolina, Virginia, and West Virginia

Mergers Lead to Higher Prices



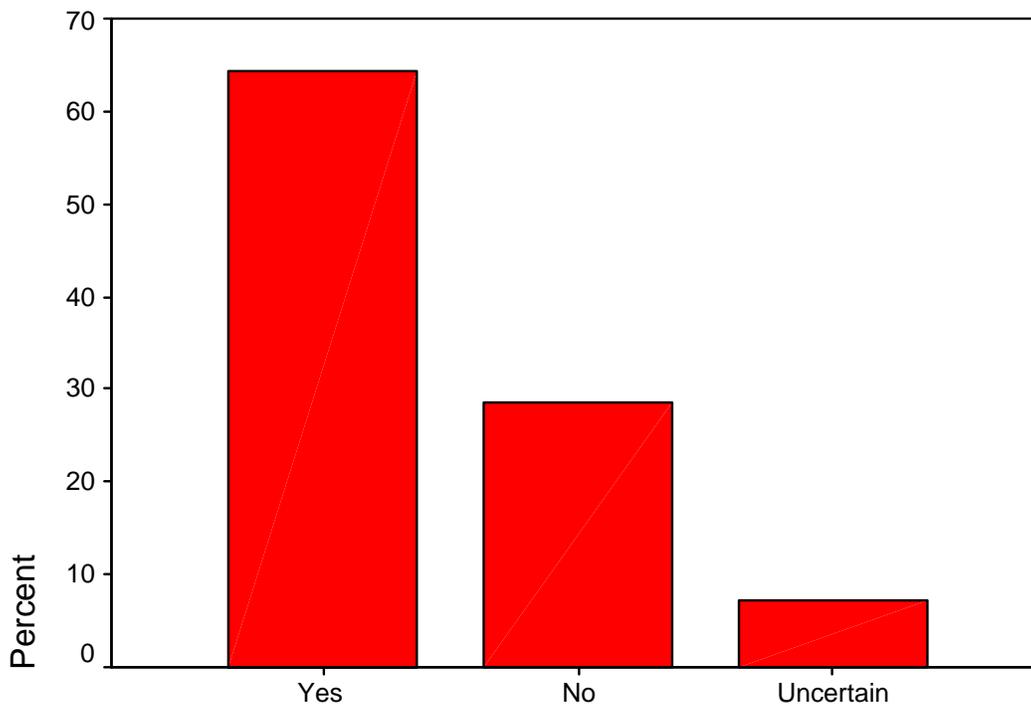
Mergers Lead to Higher Prices

Drug Prices Lead to Hospital Staffing Cuts

		FREQUENCY	PERCENT	VALID PERCENT	CUMULATIVE PERCENT
Valid	Yes	9	60.0	64.3	64.3
	No	4	26.7	28.6	92.9
	Uncertain	1	6.7	7.1	100.0
	Total	14	93.3	100.0	
Missing	System	1	6.7		
Total		15	100.0		

Southeast: Florida, Georgia, North Carolina, South Carolina, Virginia, and West Virginia

Drug Prices Lead to Hospital Staffing Cuts



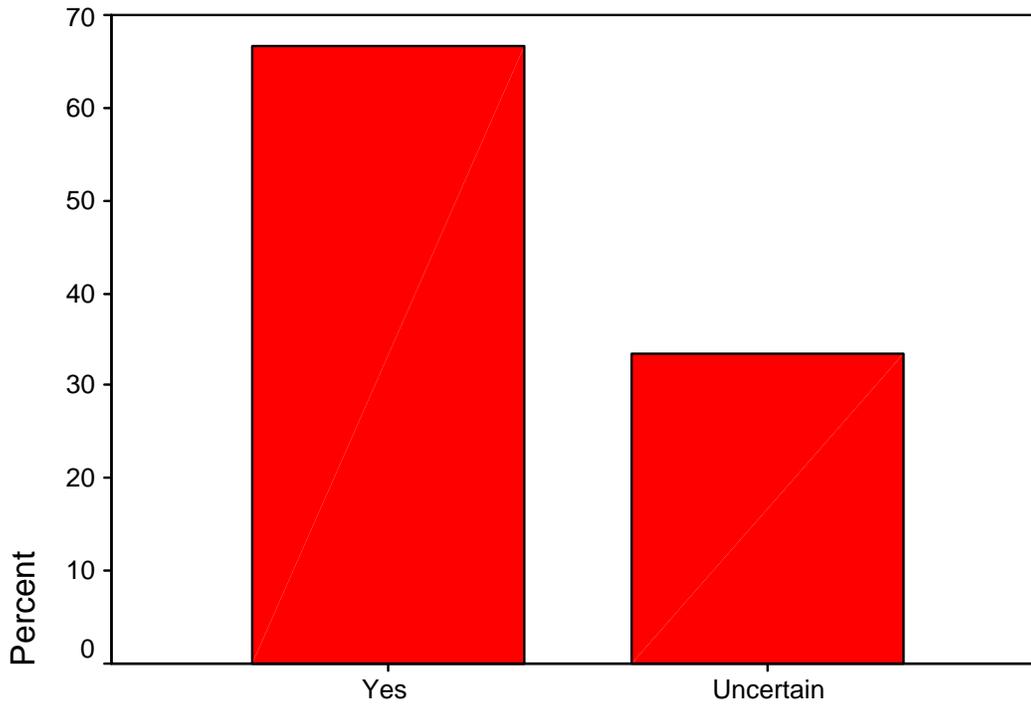
Drug Prices Lead to Hospital Staffing Cuts

Mergers Lead to Higher Prices

		FREQUENCY	PERCENT	VALID PERCENT	CUMULATIVE PERCENT
Valid	Yes	2	66.7	66.7	66.7
	Uncertain	1	33.3	33.3	100.0
	Total	3	100.0	100.0	

Southwest: Arizona, Nevada, New Mexico

Mergers Lead to Higher Prices



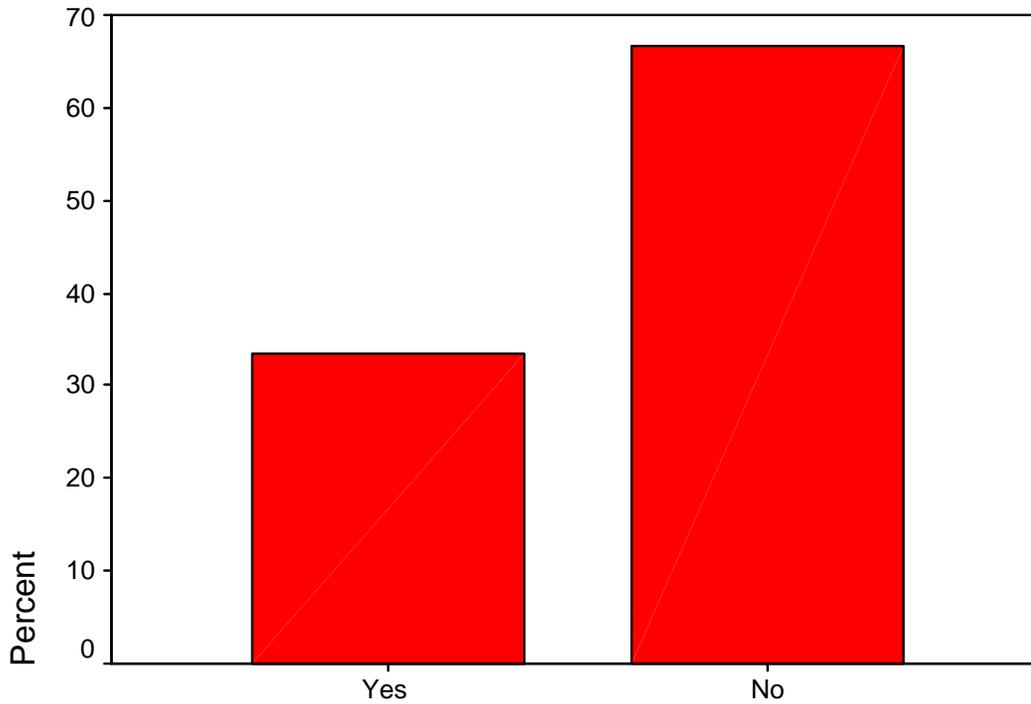
Mergers Lead to Higher Prices

Drug Prices Lead to Hospital Staffing Cuts

		FREQUENCY	PERCENT	VALID PERCENT	CUMULATIVE PERCENT
Valid	Yes	1	33.3	33.3	33.3
	No	2	66.7	66.7	100.0
	Total	3	100.0	100.0	

Southwest: Arizona, Nevada, New Mexico

Drug Prices Lead to Hospital Staffing Cuts



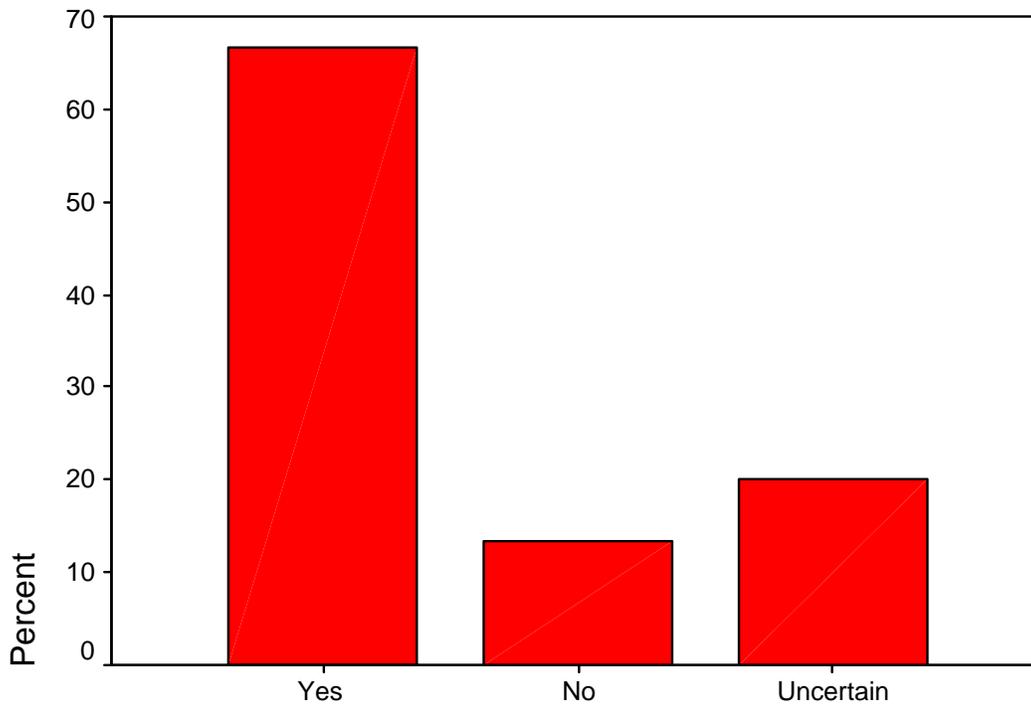
Drug Prices Lead to Hospital Staffing Cuts

Mergers Lead to Higher Prices

		FREQUENCY	PERCENT	VALID PERCENT	CUMULATIVE PERCENT
Valid	Yes	10	66.7	66.7	66.7
	No	2	13.3	13.3	80.0
	Uncertain	3	20.0	20.0	100.0
	Total	15	100.0	100.0	

West: California, Colorado, Hawaii, Idaho, Montana, Oregon, Utah, Wyoming, Washington

Mergers Lead to Higher Prices



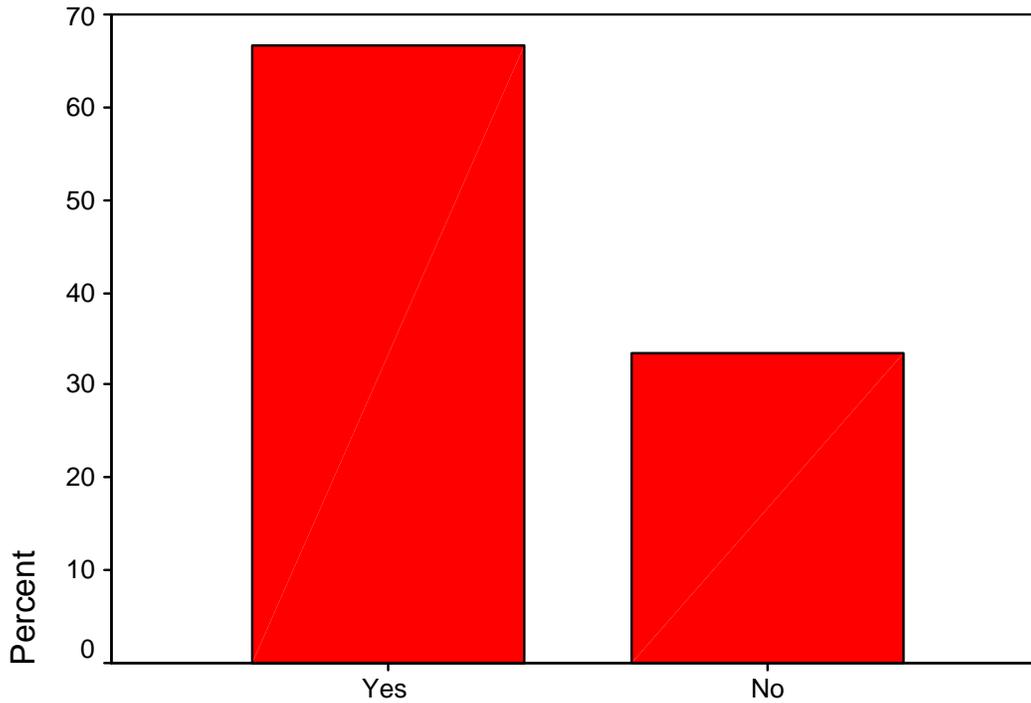
Mergers Lead to Higher Prices

Drug Prices Lead to Hospital Staffing Cuts

		FREQUENCY	PERCENT	VALID PERCENT	CUMULATIVE PERCENT
Valid	Yes	10	66.7	66.7	66.7
	No	5	33.3	33.3	100.0
	Total	15	100.0	100.0	

West: California, Colorado, Hawaii, Idaho, Montana, Oregon, Utah, Wyoming, Washington

Drug Prices Lead to Hospital Staffing Cuts

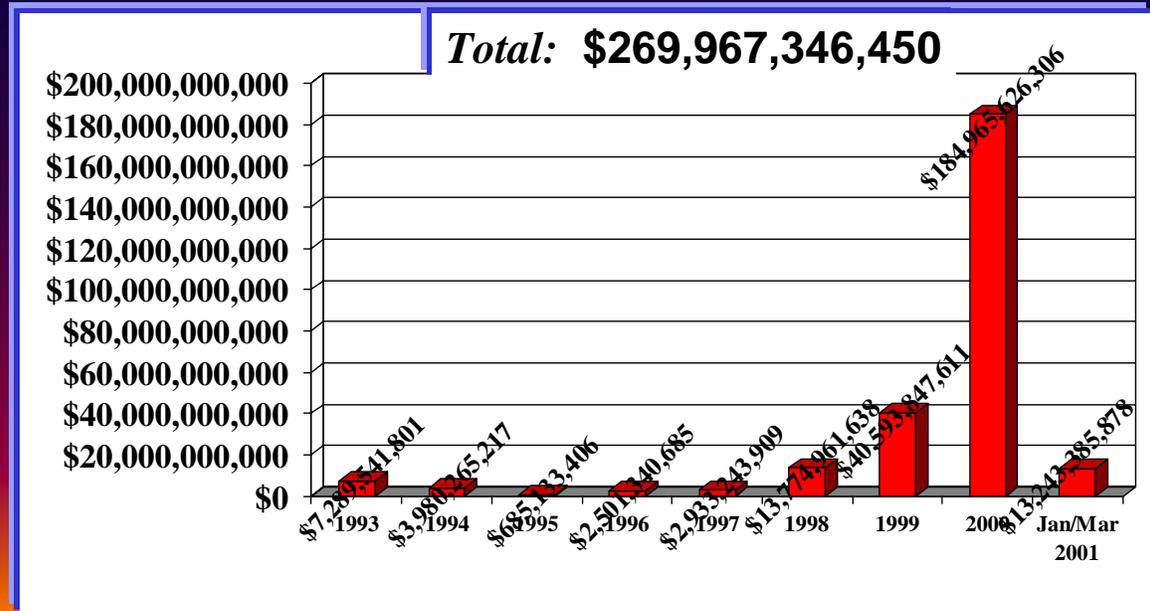


Drug Prices Lead to Hospital Staffing Cuts

**X. Supplemental Charts**

# Pharmaceutical Merger and Acquisition Costs: 1993-2001

(In Year 2000 Dollars)

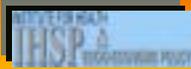
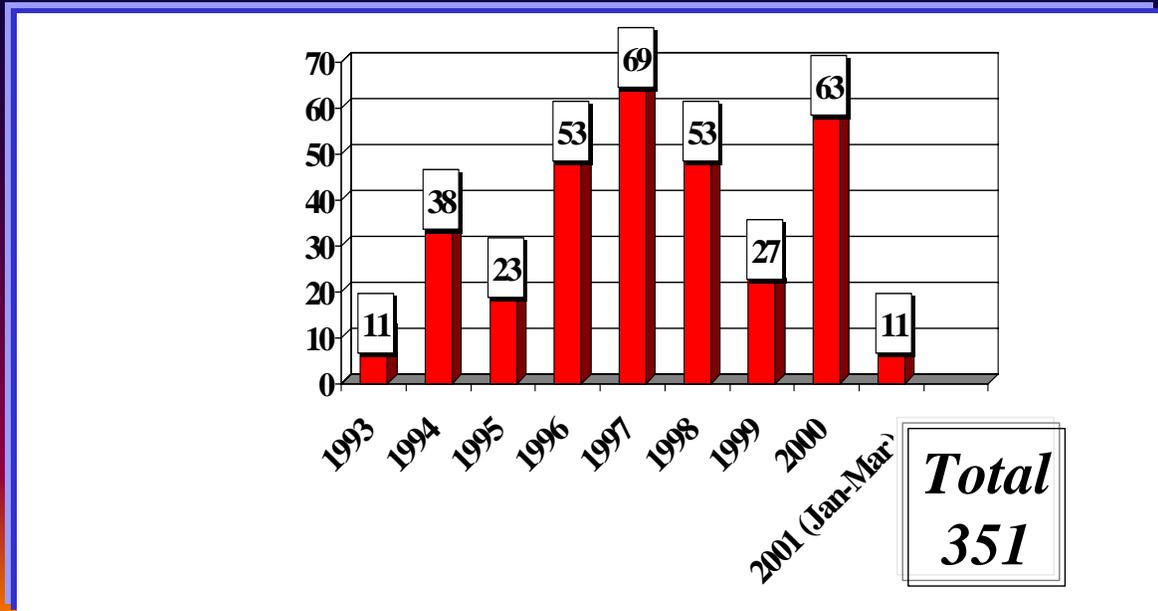


Source: IHSP Calculations of Irving Levin and Associates Data and Publicly Available Data

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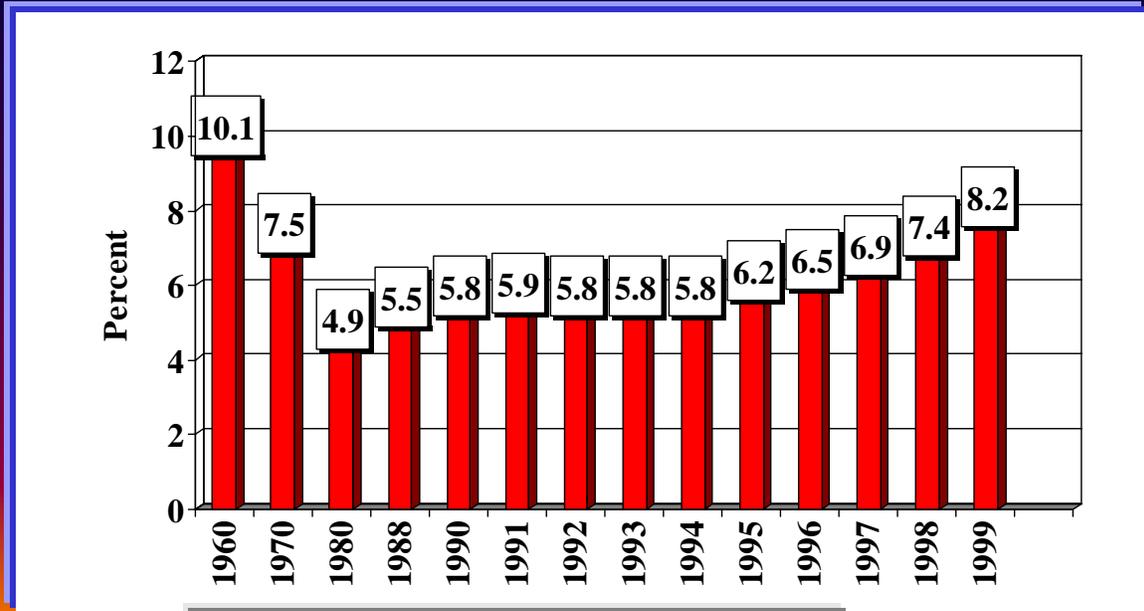
# Pharmaceutical Merger & Acquisition Transactions

1993-2001



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# Percent of Health Care Dollars for Prescription Drugs

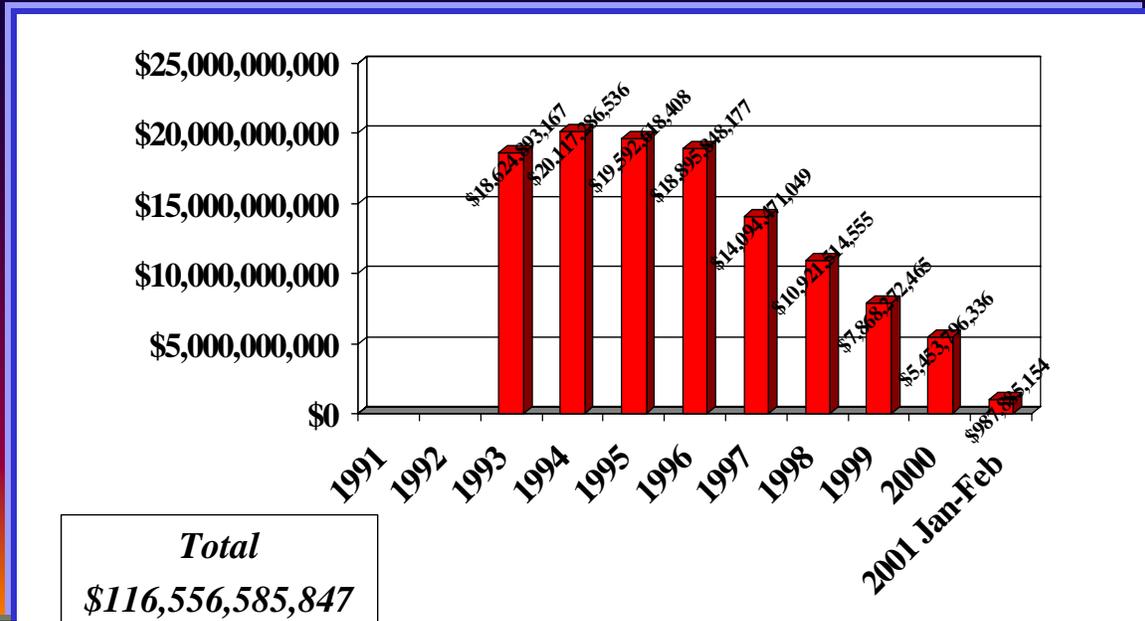


Source: IHSP Calculations of Health Care Financing Administration Table 2:  
National Health Expenditures Aggregate Amounts and Average Annual Percent  
Change, by Type of Expenditure: Selected Calendar Years

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# Hospital Merger and Acquisition Costs:

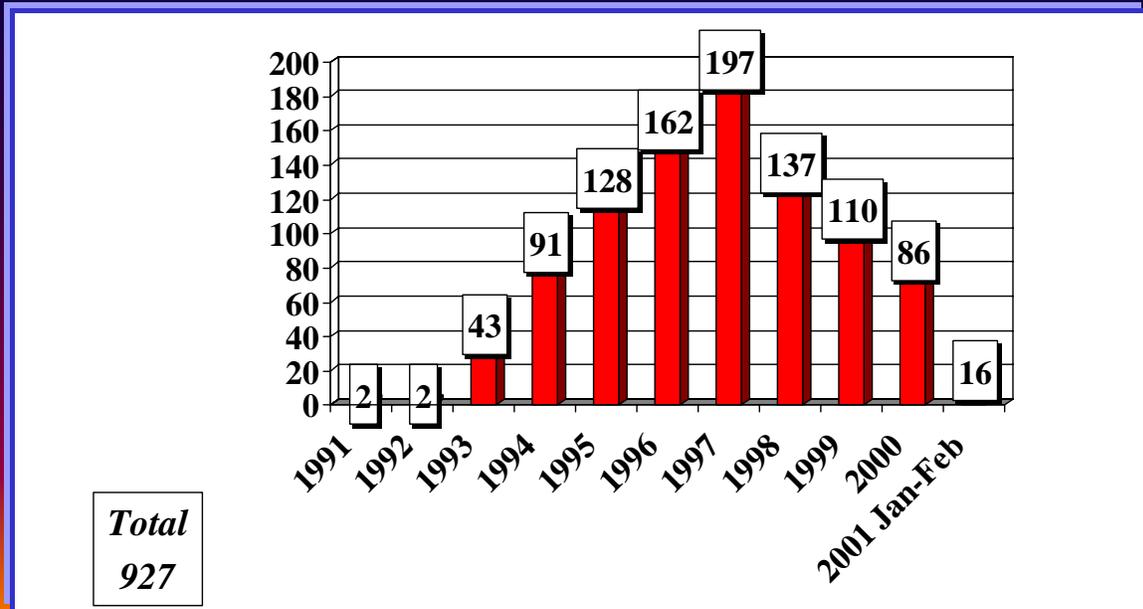
(Year 2000 Dollars)



Source: IHSP Calculations of Irving Levin and Associates Data

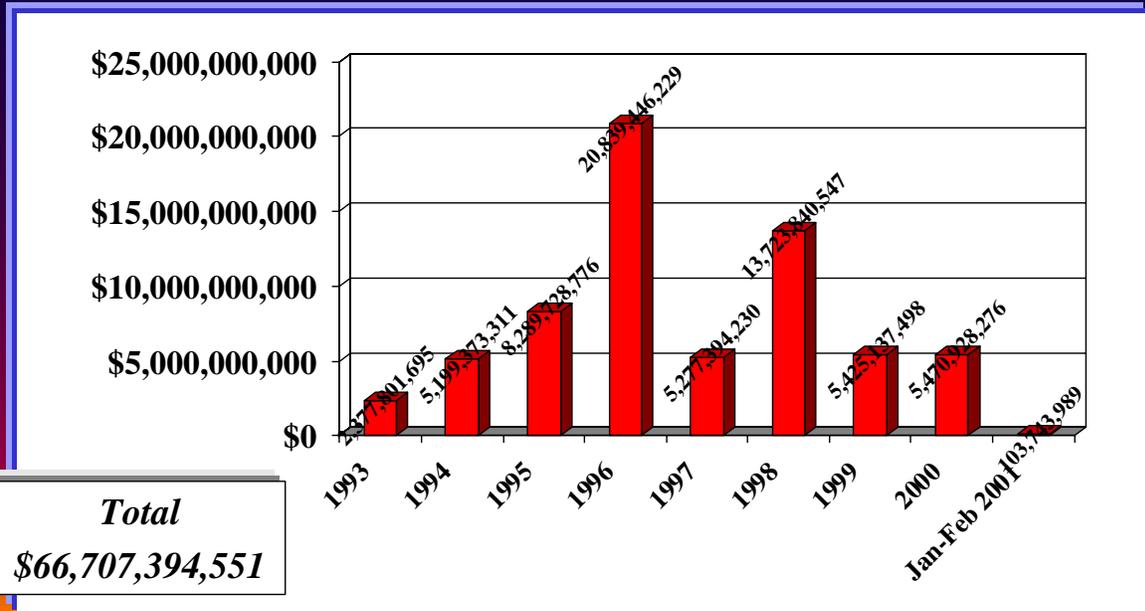
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# Hospital Merger and Acquisition Transactions



# HMOs: Merger and Acquisition Costs

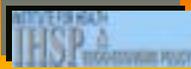
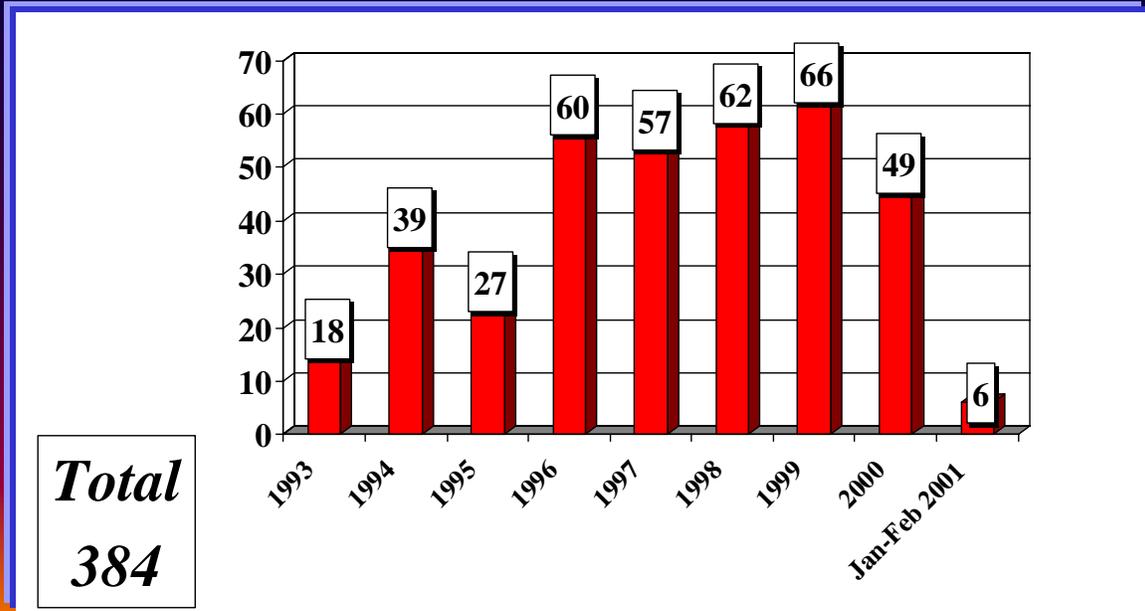
(Year 2000 Dollars)



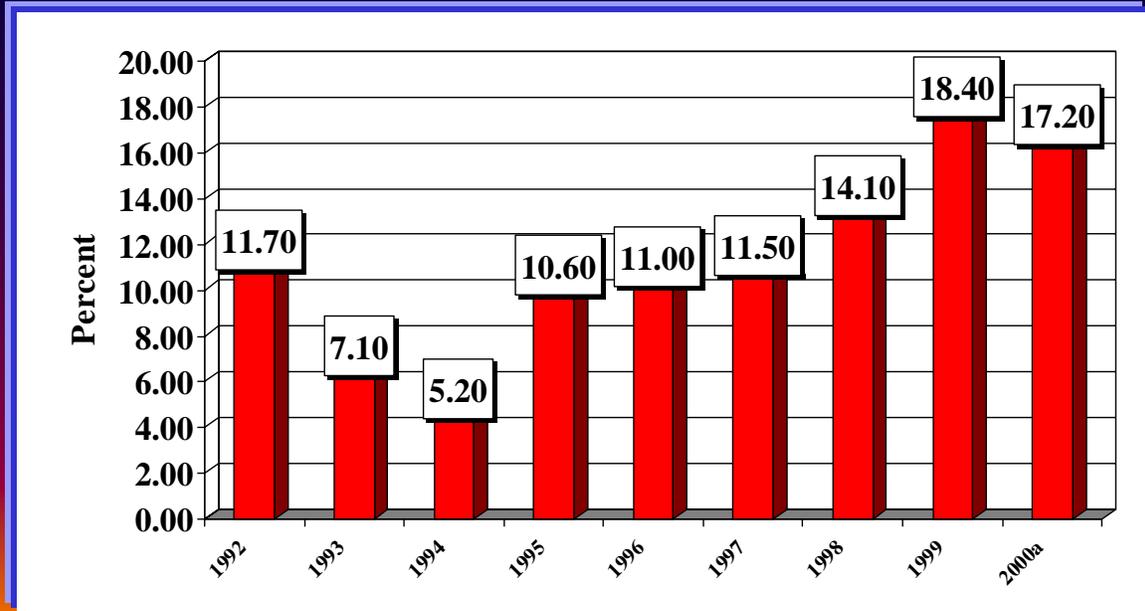
Source: IHSP Calculations of Irving Levin and Associates Data

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# HMO Merger and Acquisition Transactions



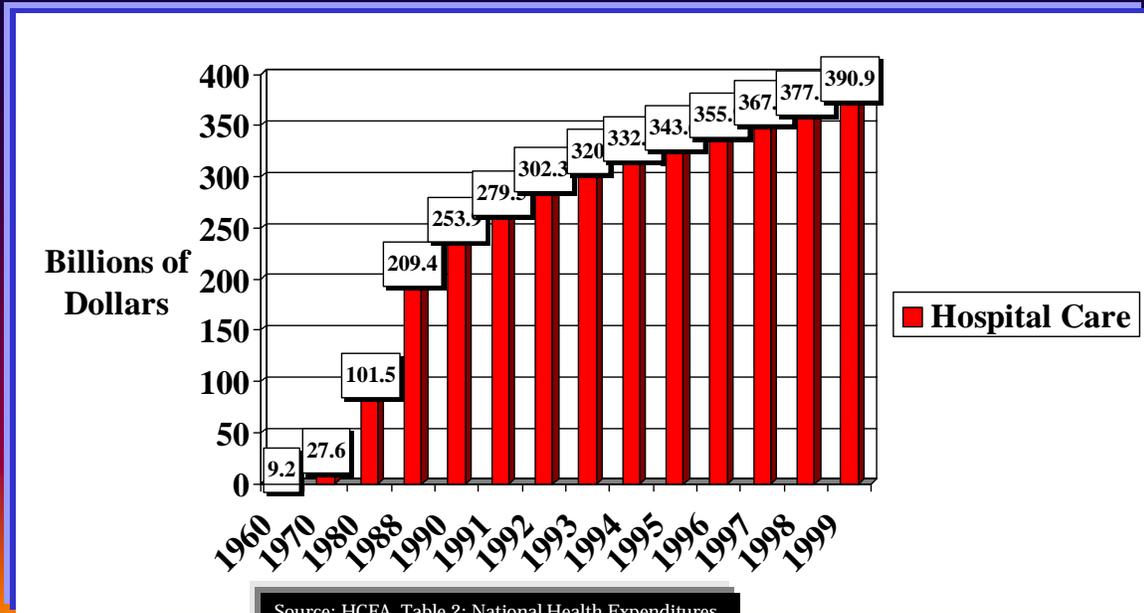
## Annual Percent Change Per Capita in Drug Costs 1991-1999



Source: Milliman & Robertson Health Cost Index (\$0 deductible)

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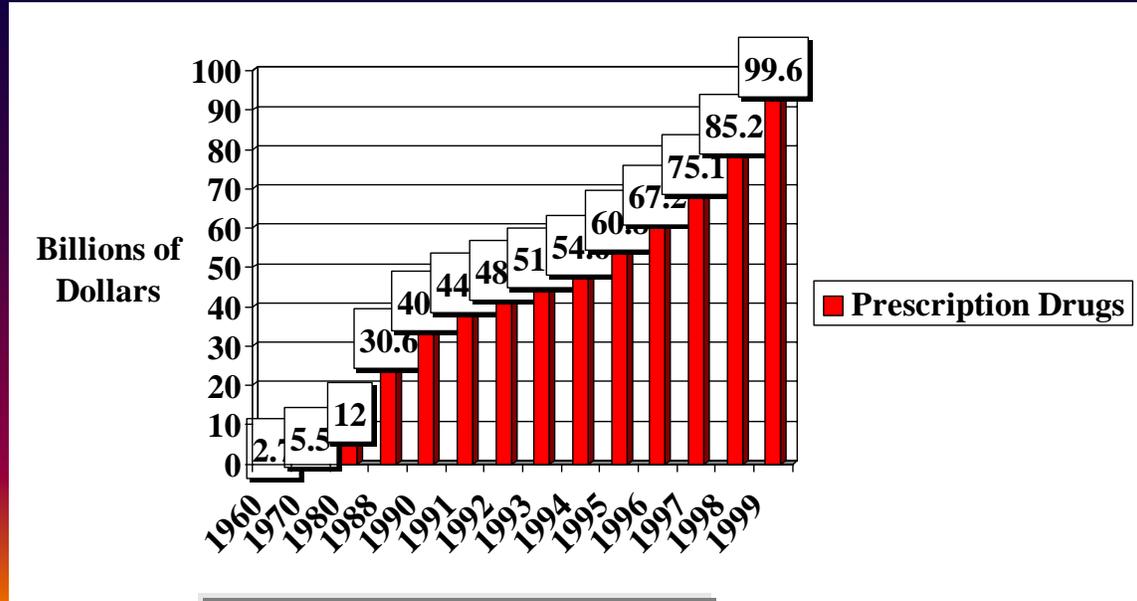
# Hospital Care: Billions of Dollars (1960-1999)



Source: HCFA, Table 2: National Health Expenditures  
Aggregate Amounts and Average Annual Percent  
Change, by Type of Expenditure: Selected Calendar  
Years 1960-99

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# Prescription Drug Costs: 1960-1999



Source: HCFA. Table 2: National Health Expenditures  
Aggregate Amounts and Average Annual Percent Change,  
by Type of Expenditure: Selected Calendar Years 1960-99

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# Health Care Restructuring: Dynamics

## Corporate Restructuring

- Mergers & Acquisitions
  - Intensifying Debt Load
  - Hospital Closures
  - “Empty Bed Syndrome”
- “Population Based Care” & Medical Redlining
- Enhanced Power of Financial Markets
- Interlocking Boards of Directors
  - Vertical
  - Horizontal
- Monopolization/Oligopolization

## Ideological Foundations of Health Care Restructuring

- Corporate Fictions:
  - Cost Containment, Access & Quality
- Market Dogma
- Total Quality Management (TQM) & “Scientific Management”
- Procedure-based “Reform”
- Blaming the Victim for Market Failures:
  - Patients (over utilization)
  - The Uninsured
  - Caregivers
- Medicare, Budgets and Politics

## Technological Restructuring

- Mythology of “Emergent” Technologies
- Skill Displacement
- Labor Displacement
- Competing and/or Redundant Technologies
- Creation of a layperson health care cottage industry

## Clinical Restructuring

- Pseudo-authority traded for power
- Deskilling
- Deregulation
- Health Care Model Displaced by Re-engineering Model
- Deprofessionalization of Health Care Professions
- Pseudo-Science

Source: *Restructuring Health Care; The Corporate Assault on Quality Care*, 2<sup>nd</sup> Edition, In Progress. IHSP, 2001.

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# U.S. Health Care Industry



## **XI. Reconceptualizing Health Care Restructuring Research**

This study takes its analytical genesis from a focus on the health care industry as a whole, as opposed to the provider sector only (Hospitals, HMOs, PPOs, Long Term Care, etc.). Such focus is a necessary but often missing research component in health policy research projects. (108). A concentration on a particular HMO or health care sector to the exclusion of other health care sectors and/or health care related enterprises will fail to grasp a number of critical issues which have a direct bearing on formulating future policy issues. In the present study, we hypothesize that pharmaceutical industry merger and acquisition activity may have a significant impact on drug prices and drug prices may encourage the provider sector to lay off caregiver staff - even though the nation is in the throes of a nursing shortage. As drugs are the most significant expense for Medicare patients, Medicare patients in particular will suffer decreased access to the system as HMOs and hospitals move to curb expenses across the board. For purposes of this study, the graphic, “U.S. Health Care Industry” may serve as a pictorial outline of the broader industry *per se*.<sup>59</sup>

There have been countless case studies, cross sectional examinations and “thought pieces” on TQM<sup>60</sup> inspired health care restructuring.(109-155)

The *IHSP* has developed a theoretical model to serve as a guide for empirical research in health care restructuring. Such a model has been lacking in previous studies in part because of the extremely rapid evolutionary rate of change within the health care industry. The lack of a theoretical model to guide research means that many empirical studies to date are conducted in an essentially research blind environment. For example, physicists working on the behavior predictability issue of sub-atomic particulate matter/energy forms could not possibly do so without at the same time being guided by the larger theoretical assumptions of quantum mechanics. Likewise, much empirical research in the health care restructuring movement suffers a methodologically debilitating handicap because it has no common understanding as to **what** constitutes the object of research, that is, as to what **constitutes** health care restructuring and its constituent elements.

Health Care Restructuring can be fruitfully conceived as occurring in four primary areas – Corporate, Clinical, Technological and through its Ideological foundations. The model stipulates that there are no “pure” areas of restructuring, whether corporate restructuring, clinical restructuring, technological restructuring or the evolution of the movement’s ideological foundations. Rather, these areas overlap and support one another. Each area cannot exist apart from the other, and the total relationship of each area to the other results in an industry-wide synergistic social, political and economic relationship in which the sum of the areas is greater than the sum of its parts.

In any given historical period, one of the areas tends to be dominant. At present, the Ideological arena is particularly dominant as providers struggle with falling profits, the nursing shortage, the medical error issue. The present challenge in the Ideological area is how to force these essentially fluid socio-organizational problems into a relatively static neo-classical economic model for solutions that are palatable to the larger society.

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<sup>59</sup> Financiers and management consultants are not included in the \$2 trillion market capitalization figure.

<sup>60</sup> See, *Market Bias – Then and Now* in this study.

A very brief sketch of our model follows:

### ***A. Corporate Restructuring***

Corporate Restructuring consists of several key elements: Mergers and Acquisitions, Vertical Integration, Horizontal Integration, Interlocking Boards of Directors, and the Facilitator Role of the International Financial Markets in providing Restructuring Capital. The mergers and acquisitions of health care corporations are characterized by larger and larger Integrated Delivery Systems (IDS). These systems include but are not limited to: insurers, hospitals, clinics, nursing homes, medical device manufacturing firms, drug manufacturers and the new "sub-acute" firms. Corporate level restructuring tends to be dominated by the drive for market share in much the same fashion that non-health care related industries have evolved in the post-war period.

Capital financing for Corporate Restructuring derived from the relatively rapid increase in health care industry profits up to about 1997-1998, and from the willingness of the international financial markets to fund industry expansion due to the past enhanced credit ratings. However, industry credit ratings in the provider sector are presently at risk or actually damaged, and profit levels are down, both of which slow expansion plans.

### ***B. Clinical Restructuring***

Clinical Restructuring includes the redesign of the actual work processes from the level of the firm all the way down to re-engineering in minute detail individual caregiver duties and responsibilities and classificatory job descriptions. This re-engineering process generally entails the lay-off of significant numbers of highly skilled caregivers. This includes a trade off of individual caregiver autonomy over their work for an increase in authority over others in the redesigned workplace. For example, registered nurses may be designated team leaders in facilities experimenting with Total Quality Management Programs, and placed in a team supervisory role over other newly created classifications (patient care assistant, associate, etc.) The trade off occurs as team leaders in such arrangements are themselves subject to increasingly strict routinized clinical procedures conduct which circumscribe their ability to effectively exercise professional judgment from one case to another.

Further, as other usually lesser skilled classifications are created within the industry, the ability of various health care professional bodies to regulate the qualifications of practicing clinicians decreases proportionately. In effect, within Clinical Restructuring, the health care industry may be seen as moving toward an era of **Site Based Licensure**, in which the employer, and not any professional health care body, determines the extent and nature of qualifications appropriate to the new classifications.

*"State licensing boards do not regulate the education of replacements (for laid off skilled nursing personnel). **There are no requirements on the amount of training for unlicensed personnel** and other staff 'crosstrained' ("multi-tasked" d.d.) to do nursing work ..."(156)*

### ***C. Technological Restructuring***

In turn, Clinical Restructuring entails the development of what we have termed Technological Restructuring. This requires the implementation of new technologies to meet the increased speed and technical efficiency requirements of the new work and staffing models. New technologies include various forms of what is known as “tele-medicine” but more critically, they also include the automation of various forms of clinical skill intensive work. Emergent automated work with the possible attendant transformation of skill-based work into task based routinized and deskilled tasks include: protocols, diagnostics, and prognostics. These automated programs, many of which are still in the developmental stage, sharply circumscribe the ability of the professions to exercise judgment on a case-by-case basis. Automation of these basic medical functions at the practical level also means an increased number of patient cases per caregiver, which in turn both encourages and demands of each caregiver that the automated procedures be strictly employed. As the market share and share holder return ratios influence the introduction of new work forms and inter-organizational and intra-organizational relationships, so too, does that relation between Corporate and Clinical Restructuring influence the development and deployment of technologies aimed at increasing the technical, if not clinical, efficiency levels of the industry.

Specific elements within the Technological Restructuring arena include: the substitution of information technologies for human labor, skill displacement, the struggle for implementation rights of equally efficient technologies, some of which enhance and others erode employee skills, and the creation of a “health care cottage industry” in which patients and their families are delegated more and more of the work previously performed by caregivers.

### ***D. Ideological Foundations of Health Care Restructuring***

The Ideological Foundations of the restructuring movement serve as a means by which the other three associated arenas are coordinated at the political and economic levels. The principle component within this arena is a form of neo-classical market-based economic dogma in which it is asserted but never argued that the **economic** mechanisms of the market are the answer to the **socio-organizational** issues of allocating health care resources and improving the quality of those resources.

Any failures within the market-based system are simply defined as otherwise. For examples, overcrowded emergency rooms are blamed on “over utilization” by patients, the nursing shortage is traced to a lack of available nursing personnel due to nursing school enrollment problems while the fact that the provider sector signaled to those same nursing schools in the early 1990s that nurses would be replaced by other personnel.

### ***E. Coming Full Circle: Summing up the Theoretical Research Model***

All four areas of restructuring support - **and depend** - upon the other to enable restructuring in its current form to proceed. All four principal arenas also have serious potential policy implications for:

- Quality outcomes
- Caregiver skills maintenance in the long term
- The future ability of local, state and national governments to track and accurately measure quality outcomes along specified variables

- The future ability of local, state and national governments to play any meaningful role in setting policy for an industry which accounts for approximately 1/7 of the gross domestic product
- Financial stability of the industry
- Regulatory impact on the industry
- Industry long term strategy in its ability or willingness to care for select elements of the population according to perceived or real “medical loss ratios”
- Caregiver ability to speak as advocates for their patients

In extremely brief terms, the model may be summarized as follows:

**Corporate Restructuring:** Requires vast sums of credit to meet consolidation demands of integration and coordination and revenue demands by stock holders and a market that rewards profit margins over quality concerns.

**Clinical Restructuring:** Shifting from a traditional model of “primary care,” where nurses, doctors, technicians, support staff and other skilled health care workers are plentiful, to a "team work" model of care where skilled caregivers may not be so plentiful.

**Technological Restructuring:** Automating, mechanizing and otherwise rationalizing as many tasks as possible from the firm all the way to the individual employee level.

**Ideological Foundations of Health Care Restructuring:** Coordinating the other three areas at the political and economic level. Seeking to define market-based solutions to socio-organizational and policy problems of health care delivery and quality.

## *F. The Limitations of “Market Biased” Analyses*

### **1. Methodological Blinders**

There are literally thousands of small-scale case studies in the relevant health care literature.(122;141;157-173) As case studies are by their very nature limited in scope, generalizing from them about the nature of health care restructuring in general is problematic. More critically, what these studies share is a common set of methodological blinders. Analyses proceed with a range of unwarranted assumptions about the power of markets over institutional behavior. Such analyses may be termed “market biased.” The tendency is to analyze each variable in the context of market imposed **necessity** with little or no regard for the empirically measurable concept of institutional power in the corporate health care sector to shape and influence their operational markets.

Political-Economic analysis serves as a methodological antidote to the unwarranted assumptions regarding the relative power of markets over institutions - particularly large corporate entities. It is a matter for empirical observation to **discover**, not simply **assume** the power relationship that maintains between corporate entities and their spheres of operation.

As most studies simply assume rather than demonstrate the power of markets over corporate entities, their research methods and findings, no matter how intricate or comprehensive, are blemished at their very foundations. The vast majority of studies, therefore, are not so much mistaken as to matters of fact as they are **narrow in the questions they ask**. The most crucial aspects of any research project are not the research findings, but the scope, depth and general direction of the questions the project proposes to answer. As in any research project, the answers generated by the research depends in good part on the nature of the questions asked. Political Economic analysis allows one to ask questions in the research design and to illuminate findings that are summarily precluded from emerging in the investigative agenda in conventional analyses.

## **2. Market Bias: Then and Now**

To date, even though restructuring is proceeding at a frenetic pace, there is not one long-term study on the impact of health care restructuring anywhere in the nation. There are countless **case studies** of individual facilities but no common methodology shared among them nor agreement as to which or how variables are measured nor how they are to be assessed. The state of the art is so amorphous that some researchers have taken refuge in pronouncements of faith rather than systemic, empirical examinations. For example,

In March of 1994, a team of researchers examining the application of Total Quality Management (TQM) principles to health care redesign remarked that,

*“While the desired outcome from all of these goals (of Patient Focused Care) is improvement in service quality, effectiveness, and efficiency, little data are available to suggest the net benefits of these changes.” (152)*

The unwarranted leap of faith came when this same research team also stated that the lack of confirming data was due to the misapplication of TQM principles, not to any fundamental problem with the application of industrial models of production (TQM) to the health care workplace.

The article reflected the then state of the market bias art concerning what is known – and not known – about the general impacts of the health care restructuring phenomenon.

Four years later, in the May, 1997 issue of the journal, **Patient Focused Care**, an article entitled “*American auto maker shows hospitals how to redesign systems*” appeared. General Motors has begun teaching their industrial models of efficiency to various health care clients – many of whom have contractual relations with GM to provide health care for their workforce. GM teaches the course, known as PICOS or fast discharge system, at no charge.

The Cleveland Clinic Foundation used the system to “... *eliminate waste...*” in its 8-hour discharge process,<sup>61</sup> “*preparations for same day/next day surgeries, laboratory performance time, chart retrieval, and ancillary flow.*” The Karmonos Cancer Institute, an affiliate of the Detroit Medical Center, claims that the GM program has “... *stimulated a redesign that will boost productivity by as much as 30% to 50%.*” (174)

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<sup>61</sup> The emphasis upon eliminating waste has been and continues to be a dominant and recurring theme common to all restructuring models.

This study, too, simply assumes the **clinical** efficacy of imposing TQM inspired industrial models of production on the health care sector. This assumption is completely unwarranted, particularly since no data exists demonstrating the effectiveness of TQM principles outside the realm of the production of discrete durable goods. As health care is a labor intensive and service oriented industry, the appropriateness of all health care re-engineering models predicated upon TQM inspired industrial production models is suspect.<sup>62</sup>

How did the Cleveland Medical Center learn of the GM program?

One of its board members is GM plant manager in Parma, OH.

Now, four years after the above, the Malcolm Baldrige National Quality Award is finding favor with U.S. hospitals.

*While the basic purpose of Baldrige is similar to Japan's Deming award, there are also important differences. According to Kosco, Baldrige focuses more on results and service, relies upon the involvement of many different professional and trade groups, provides special credits for innovative approaches to quality, includes a strong customer and human resource focus, and stresses the importance of sharing information.*

*The purpose, content, and focus of Baldrige also differ markedly from ISO 9000, a series of five international standards published in 1987 by the International Organization for Standardization (ISO) in Geneva. While health care organizations can use the ISO standards to help determine what is needed to maintain an efficient quality conformance system, those standards do not look at the entire organization in nearly the same fashion that Baldrige does. In fact, ISO 9000 registration covers less than 10% of the Baldrige Award criteria.*

*"What we are looking for is outstanding improvement and achievement across the board," Kosco asserts. "When you submit an application for a Baldrige Award, you have looked at every nook and cranny of your organization." In addition, organizations that submit an application receive very detailed feedback that cites areas where improvement is possible. In fact, it is precisely that feedback that organizations are seeking when they apply, she says. (175)*

This approach suffers similar difficulties as previous TQM inspired approaches, but in greater detail. Routinization is often mistaken for standardization, organizational tendencies are elevated to organizational rules of behavior, and the role of human judgment in the interpretation of rules in scientific practice *per se* is subjugated to a detailed but mindlessly quantitative labyrinth of organizational imperatives. (97;176;177)

(163;178;179;179-186)

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<sup>62</sup> For a brief treatment of the problems inherent in the application of industrial efficiency models to the health care workplace, see: DeMoro, Don. Book Review of: *The Role of Information Technologies in Health Care* published by the United States Congress, Office of Technology Assessment. May, 1995.

### ***G. Correcting Market Biased Research***

Market biased research is a methodological research impairment common to a continuum of political persuasions. For example, expert testimony tinged with the subtleties of market biased research can be found emanating from organizations with such diverse views as the Hoover Institute, the Rand Corporation, the Economic Policy Institute, the Cato Institute, the PEW Commission and many others.

In brief, the *IHSP* approach to correcting market biased research takes place simultaneously on two levels:

1. We have constructed a theoretical model of health care restructuring that can be used as a guide in empirical researching the health care industry. Without such a model, researchers of different persuasions tend to continually talk past one another in their research projects because there is no agreement as to the exact constitutive elements of health care restructuring.
2. We do not assume that market-mechanisms alone defined in narrow *economistic* neo-classical terms is in principle a sufficient condition of allocating or improving the quality of health care. Rather, our assumption is that market-based efficacy requires empirical substantiation. Consequently, our tack has much more in common with the intuitionist school of economic thought, which places firm-level and market sector notions of power at the center of the analytical toolbox.(169;187-206)

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### **Errors of Omission or Commission.**

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