

The following is another in an occasional series of critiques, commentaries, and points of view on the state of healthcare today and in the future. This column will feature opinions from our editorial board members, regular contributors, and other leading experts in the field who are willing to share their vision and voice on the issues that impact the nation's healthcare system.

Regulating the Pharmaceutical Industry: Who Really Benefits?

Miron Stano, PhD

Rapidly rising drug prices and seemingly high profits in the pharmaceutical industry have made the industry a convenient target of private and public efforts to control healthcare spending. Price discrimination against the elderly, who are not covered for outpatient drugs under Medicare, and the introduction of new and expensive drugs increasingly promoted through direct marketing to consumers, have served to heighten criticism of the industry.

The case of omeprazole (Prilosec, Astra Pharmaceuticals, LP, Wayne, PA), the top-selling drug since 1996, illustrates these concerns. Heavily advertised in the print and broadcast media, omeprazole became the first drug to reach annual worldwide sales of \$5 billion.¹ Wholesale costs per patient per month range between \$116 to \$178, making omeprazole one of the most expensive drugs for US companies providing drug coverage.²

In recent years, the private sector has adopted various mechanisms to handle the cost pressures. These mechanisms include utilization review, formularies, and pharmacy benefit managers. Concerns about rising costs and restricted access to drugs—especially among the elderly—have pushed pharmaceutical pricing and Medicare drug coverage to the forefront of this nation's healthcare agenda. Additional cost management strategies are being

put forth, among them legislation to regulate pricing. These efforts to regulate raise growing concerns that the intense focus on controlling pharmaceutical spending through legislation may damage the public's well being.

Two widespread misconceptions about the drug industry partially underlie the present concerns about pharmaceutical costs. First, despite the industry's high profits, which often serve as a flash point for critics, careful review shows that the profits have been greatly exaggerated by simplified accounting comparisons. The pharmaceutical industry invests a larger portion of its sales (23%) in research and development (R&D) than any other major industry group.³ Under conventional accounting practices, R&D and advertising/promotional expenditures are expensed rather than capitalized, (ie, treated as investments). A comparison of 14 industries revealed that the pharmaceutical industry's return on equity remains very comfortable even after appropriate adjustments (13.3% between 1980 and 1993), yet it remains below those in the highest sectors, such as computer software companies (22.6%) and the petroleum industry (15.8%).⁴

Second, although drug spending in the United States has grown twice as fast as overall healthcare spending in the past 5 years,⁵ the United States does not actually spend a great deal on drugs relative to its wealth and overall health expenditures. Figures for 1996 from the Organization for Economic Cooperation and Development (OECD) put the United States near the bottom with an 8.8% drug share of total healthcare spending compared with other industrialized nations (Table).⁶

From the Department of Economics, School of Business, Oakland University, Rochester, MI.

Address correspondence to: Miron Stano, PhD, Department of Economics, School of Business, Oakland University, Rochester, MI 48309-4401. E-mail: stano@oakland.edu.

The much larger problem for the United States is that more than 90% of all healthcare costs are spent on nonpharmaceutical healthcare. The United States spends far more per capita on healthcare than any other country, and according to many experts, we are on the “flat of the curve” in medicine. In other words, our high levels of spending do not appear to bring us any significant improvements in health. Yet if there is anything that the scientific community and policymakers have agreed upon, it is that this nation should reap the maximum benefit from resources devoted to healthcare. The main rationale for managed care and evidence-based medicine is the elimination of unproductive spending and the reallocation of the remaining funds to their most productive uses.

Those who seek to control costs through pricing legislation need to ask how the productivity of pharmaceutical spending compares with that of non-pharmaceutical healthcare. Recent research on the effects of pharmaceutical innovation and drug spending has revealed surprising results. Drugs are relatively cost effective compared with other health interventions such as surgery or diagnostic testing in promoting and maintaining health, suggesting that reallocations toward greater drug use, rather than less, may be warranted.

For example, Frech and Miller examined the wide differences in drug use and health status in 21 OECD countries to investigate the productivity of drugs, other medical interventions, wealth, and lifestyle.⁷ Nonpharmaceutical interventions such as surgery showed no statistically significant effects at

any of the three age levels (ie, birth, 40, and 60 years) that were examined. Simply stated, spending more on nonpharmaceutical healthcare is not accompanied by a concomitant improvement in health in the United States.

However, the authors also found strong positive effects on life expectancy: in persons aged 40 to 60 years, a doubling of drug spending increased life expectancy by 2% and 4%, respectively. They also estimated the lifetime pharmaceutical cost of extending life by 1 year. In the United States, costs for 40-year-old men and women are \$21,000 and \$23,000 respectively, and for 60-year-old men and women approximately \$17,000 and \$19,000, respectively. These values compare very favorably with many other healthcare programs. For example, the cost per additional life-year for annual mammography in women from 55 to 64 years of age is \$110,000.⁸

These findings suggest a high potential for the economical substitution of drugs for other healthcare interventions. Lichtenberg estimated, for example, that a \$1 increase in pharmaceutical spending resulted in a \$3.65 decrease in hospital spending.⁹ The decline in hospital bed-days was greatest for patients who had a) been prescribed the largest number of drugs and b) whose prescriptions had been changed during the study period to reflect innovations. Lichtenberg’s more recent work cautions even more strongly against price and other controls on the industry’s ability to undertake R&D and develop new products. He found a highly significant positive relationship between the mean age at death and the share of “priority” drugs prescribed by physicians.¹⁰ Without pharmaceutical innovation, writes Lichtenberg, “there would have been no increase and perhaps even a small decrease in the mean age at death,” adding that “new drugs have increased life expectancy and lifetime income by about 0.75% to 1.0% per annum.”

Although these findings require additional verification, there appears to be increasing evidence that pharmaceuticals are extremely productive, especially when compared with other medical interventions. Thus, the increasing share of national healthcare expenditures devoted to drugs may well represent a socially beneficial reallocation of our healthcare dollars and policies that impede innovation are likely to be damaging.

Managed care should not abandon its efforts to establish drug formularies and other measures to contain drug costs and ensure quality, cost-effective

Table. Comparison of Spending on Pharmaceuticals as a Share of Total Healthcare Spending Among Selected Industrialized Nations

Country	Pharmaceutical Share
Japan	20.8%
Belgium	17.9%
France	17.0%
United Kingdom	16.5%
Canada	12.5%
United States	8.8%

Adapted from reference 6.

care. Furthermore, pharmaceutical companies are for-profit entities that naturally avail themselves of patent laws and other regulatory mechanisms that protect them from competition. Managed care and an informed public are important countervailing forces. Similarly, regulatory and legal safeguards against abuses of power must be enforced. Finally, equitable access to drugs and other effective health-care services for all disadvantaged groups, not just the elderly, must be ensured. Focusing disproportionately on policies to contain drug spending, however, may not only punish the drug industry but may also result in a costly victory for the public.

...REFERENCES ...

1. Pharmaceutical Online. Prilosec becomes first \$5 billion prescription medication. February 19, 1999. Available at: <http://www.pharmaceuticalonline.com/content/news/article.asp?DocID={3E520D32-F50D-11D2-A405-00C04F4F7C39}>. Accessed August 11, 1999.
2. Burton T. Why generic drugs often can't compete against brand names. *The Wall Street Journal*. December 18, 1998:A1, A10.
3. Pharmaceutical Research and Manufacturers of America (PhRMA), Pharmaceutical Industry Profile 1999. Available at: <http://www.phrma.org/publications/industry/profile99/index.html>. Accessed April 19, 1999.
4. Clarkson KW. The effects of research and promotion on rates of return. In RB Helms, ed. *Competitive Strategies in the Pharmaceutical Industry*. Washington, DC: *American Enterprise Institute*; 1996:238-268.
5. National Institute for Health Care Management Research and Education Foundation. Spending on new, heavily advertised drugs pushes drug expenditures up 84% since 1993. [press release]. Washington, DC: National Institute for Health Care Management; July 9, 1999.
6. Organization for Economic Cooperation and Development, Health Policy Unit. *Health Data '98: A Comparative Analysis of 29 Countries*. Paris, France; 1998.
7. Frech HE III, Miller RD Jr. The Productivity of Health Care and Pharmaceuticals. Washington, DC: *American Enterprise Institute*; 1999.
8. Tengs TO, Adams ME, Pliskin JS, et al. Five-hundred life-saving interventions and their cost-effectiveness. *Risk Analysis* 1995;15:369-390.
9. Lichtenberg FR. Do (more and better) drugs keep people out of hospitals? *Am Econ Rev* 1996;86:384-388.
10. Lichtenberg FR. Pharmaceutical innovation, mortality reduction, and economic growth. Working Paper 6569, National Bureau of Economic Research, Cambridge, MA, May 1998.