Counting the True Cost and Value of Medicines

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The old adage, “don’t throw the baby out with the bath water,” resonates strongly today in the current debate over health care spending in the U.S., particularly with regard to prescription medicines. As the national health expenditure on medicine exceeds $128 billion dollars [1], the answer to the question, “Do we spend more on pharmaceuticals today than we did years ago?” is clearly “yes.” But in the debate over spending, we can too easily forget the patient and the value that pharmaceuticals bring to society by enabling us to live longer, healthier, more productive lives.

HIV/AIDS offers one of the most dramatic examples of the value of pharmaceuticals. In the early 1990s, AIDS was a death sentence for patients, many of whom died within 2 years of diagnosis. By 1996, AIDS was no longer one of the top 10 leading causes of death in the U.S. Survival rates improved because, in 1984, scientists at Burroughs Wellcome discovered that AZT—the first treatment to fight HIV/AIDS—was active against the virus. In the first 16 months after the introduction of AZT, hospital inpatient care dropped 43% [2].

Today, with a score of medicines on the market, patients who take their therapy as prescribed do not die of AIDS. Prescribing several AIDS medicines at once to attack the disease can cost each patient $16,000 a year. Yet, before such therapies were available, one AIDS patient could account for $100,000 a year in hospital bills, until they died of the disease [3].

Are we spending more today on AIDS medicines? Yes, but we are saving millions in the overall cost of medical care. And people with AIDS are living—longer, healthier, and more productive lives.

The very success of medicines in preserving life has in part led to the current controversy over cost. Contrary to popular perceptions, price increases by industry are not the problem. The $128 billion we spent as a nation on medicines in 2000 represents an increase of 13.6% overall from 1999, according to IMS Health. Yet only 3.9% of that increase was due to rising prices; 10.8% was due to increased use (volume, mix, and new products) [4]. The most significant factor is volume growth; the number of patients needing medicines is rising dramatically. Thirty-five million Americans are now over age 65, and in just 30 years, that number will double to 70 million [5]. Significantly, seniors consume more pharmaceuticals than any other group: nine prescriptions per year between ages 65 and 74, increasing to 12 prescriptions per year over age 75 [6].

Accountants look at the increasing senior population and the rising drug bill, and they say their budgets cannot afford this increased spending on pharmaceuticals. But those who silo their spending in columns on the balance sheet fail to realize that spending on prescription medicines is cost effective, often offsetting much higher health care costs in other budgetary columns.

For example, a study of cancer patients whose immune systems were weakened by high-dose chemotherapy found that they were helped by a pharmaceutical known as colony-stimulating factor. The treatment saved $30,000 per patient in hospitalization costs for bone marrow transplants [7].

Stroke offers another example. In the 1940s and 1950s, stroke was the number one killer disease in America. Yet many people today are living long, productive lives, even with high blood pressure, thanks to beta-blockers and other medicines. A study by the Agency for Healthcare Policy and Research says that greater use of a blood-thinning drug would prevent 40,000 strokes a year, saving $600 million per year [8]. When they do occur, many strokes are stopped before the brain is permanently damaged because of breakthrough clot-busting medicines. The end result is not only lives saved, but also savings of $1,700 versus over $6,000 per patient in treatment costs [9].
Can our society afford increased spending on such medicines, particularly if they reduce patient suffering? Certainly. What our society really cannot afford is the far greater cost of catastrophic care for heart disease, diabetes, Alzheimer's disease, and other illnesses among the burgeoning senior age group, costs that will grow substantially as the population grows.

Consider diabetes. Right now, the U.S. is facing an epidemic of type II diabetes. Over 17 million Americans have diabetes—the sixth leading cause of death by disease in the U.S. [10]. Another 16 million are estimated to have pre-diabetes, but most are not taking steps to avoid full onset [10].

Those people at risk who adopt preventive lifestyles may avoid the need for medicines. But those who suffer with this chronic and progressive disease will not be so lucky; they face a future of fatigue, foot ulcers and gangrene leading to amputation, blindness, kidney failure, heart disease, stroke, and premature death.

That is certainly frightening for patients. But what will frighten those responsible for paying for the treatment of diabetes is the alarming rise in the number of patients, and therefore costs, expected over the next 50 years. By 2050, at current rates, the number of patients with diabetes will increase by 46% [11]. Today, this nation pays nearly $100 billion a year to cover the human and economic cost to society from just this one disease, a huge proportion of which is spent for hospital care [10]. Considering the aging population, the increasing incidence of diabetes, and the huge cost associated with it, the national health care bank will be broken by just one disease.

That is what society cannot afford. The solution is greater investment in education to prevent diabetes, increased spending on existing medicines to delay and control the disease’s effects, and continued research and development (R&D) of newer and better medicines against this disease.

For such R&D, society turns to the research-based pharmaceutical industry. This industry reinvests over 18% of its sales in R&D, more than any other industry [12]. Yet it takes 12 to 15 years, on average, before a new drug makes it through the R&D process to help a patient [13]. From the time a drug is first conceived and then released on the market, the average cost of developing that one drug is over $800 million. But one drug has only a 30% chance of generating enough revenue to cover average R&D costs [14]. revenue that must also pay for the 5,000 to 10,000 compounds that fail in the effort to bring just one medicine to patients. Because of the high cost and high risk, the best hope for better treatments resides in the pharmaceutical research companies, the only organizations with the size, scale, technologies, and expertise required to bring innovative new medicines to market.

Despite the obvious need for this high-risk investment and the value it brings to society, critics of the pharmaceutical research industry advocate price controls with the short-term goals of managing the spending on pharmaceuticals and curbing industry profits. They claim such controls are necessary because the industry abuses its profits, spending, for example, more on direct-to-consumer (DTC) advertising than research.

Such criticisms are untrue. While the pharmaceutical industry reportedly spent $2.7 billion advertising in 2001, the industry spent an additional $33.3 billion on R&D [15]. Yet DTC plays a valuable role in educating patients about treatment options available to them. More than 70% of patients who saw those advertisements agreed that DTC educates consumers about the risks and benefits of prescription medicines and has increased their awareness of treatment options [16].

Price controls also would have unintended negative consequences, including a loss of capital in the industry, leading to budget cuts, truncated R&D, and diminished hope for medicines against diseases that still have no effective treatment. Conversely, as long as funding is available to support continued research, the future is ripe with possibilities for improved medical care. Today, more than 1,000 new medicines are in development for various cancers; diseases of aging, such as arthritis, diabetes, and depression; neurological disorders like Alzheimer’s disease, Lou Gehrig’s disease, multiple sclerosis, and Parkinson’s disease; and heart disease and stroke.

In fact, with so many new breakthroughs on the horizon, researchers are standing at the cusp of a new era of medical innovation, particularly given new understanding about genetics and genomics, and growing knowledge of cell and tissue growth. In addition to better treatment with pharmaceuticals, R&D efforts are likely to lead to improvements in disease prevention and even allow physicians to screen for susceptibility long before symptoms develop.

Now and in the future, using the right medicines and diagnostic tools can lead to dramatic improvements in health and decreases in overall health care spending. But that future is built today, within the framework of a healthy, thriving pharmaceutical industry focused on discovering and developing innovative medicines for improved patient health.

That’s the true cost—and value—of medicines.
REFERENCES


EXECUTIVE EDITOR'S NOTE:

In 2001, former President Bush asked Robert A. Ingram to convene and chair the CEO Roundtable on Cancer [1] in support of the National Dialogue on Cancer [2] which the former President chairs. Mr. Ingram is also president of the American Cancer Society Foundation and has recently become non-executive chairman of OSI Pharmaceuticals that has made a major commitment to the discovery and development of new oncology products. On January 1, 2003, Mr. Ingram retired from GlaxoSmithKline and accepted a part-time appointment as its Vice Chairman of Pharmaceuticals.

1 Murphy MJ Jr. CEOs Consider Ways to Intensify the Battle Against Cancer. The Oncologist 2001;6:228-229.