In September 2015, Turing Pharmaceuticals, headed by former hedge fund manager Martin Shrkeli, increased the price of a 62-year-old drug used for treating life-threatening parasitic infections in HIV and cancer patients by over 5,000 percent—from US$13.50 to US$750 per tablet.[1] Also in 2015, Valeant Pharmaceuticals raised the price of a standard-use diabetes pill from US$896 to US$10,020, pills used for Wilson's Disease from US$1,395 and US$888 to US$21,267 and US$26,139 respectively, and a heart rate medication from $4,489 to $36,811.[2] In the same year, Rodelis Therapeutics increased the price of a drug used to treat multidrug-resistant tuberculosis from around US$500 to US$10,800 per 30 pills.[3] These highlight just a few examples of numerous recent extreme price increases that have fueled the debate regarding the cost of prescription medication in the United States, prompting comparisons to drug prices in other industrialized countries. Moreover, a related debate has simmered regarding access to life-saving medicine in developing countries, the relatively low investments by major global pharma companies in developing new medicines for diseases such as tuberculosis and malaria, and the prices major pharmaceutical companies charge for HIV/AIDS medications.

Pharmaceuticals and Pricing—A Complicated Calculation

The issue of drug pricing is incredibly complex and, as more prescription medications are becoming available to the growing global population, that complexity is increasing. Debates regarding prescription medication pricing involve such hot-button issues as the appropriate levels of corporate profits, the responsibility of the corporations who own the medication (profit for shareholders versus providing a need for suffering patients), and insurance coverage, to name a few. The ethical debate over drug pricing is not confined to just the United States, but extends to developed and developing companies alike.

The pricing of pharmaceuticals is influenced by a myriad of stakeholders who represent a wide range of competing interests. These include the patients taking the drugs, the doctors prescribing the drugs, the insurance companies paying for the drugs, the pharmaceutical manufacturers that either produce or acquire the rights and supply the drug, and the governmental forces that often act as a bulk purchaser and regulator, policing the entire process. Tensions among these diverse stakeholders are aggravated by continued growth in prescription-drug spending. In 2014, drug prices grew by 12.2 percent from the previous year, and prices for some medications, including effective treatments for hepatitis-C, cancer, and multiple sclerosis, grew by as much as $50,000.[4]

Patients need reliable drugs that can be used to treat their conditions; however, the costs to patients vary widely based on the health-care system of the countries in which they live, whether they are subject to public or private insurance (or no insurance at all), and various other factors. In the United States, insurance options vary widely, with some patients paying out of pocket, others opting for coverage under their employer-paid or commercial insurance, and some utilizing a form of government-paid insurance, like Medicare. The type of provider and type of plan ultimately determine the cost that the patient must pay out of pocket for any prescription medications. Some plans require co-pays, premiums, or deductibles to cover the costs of prescriptions and some pay a certain percentage of prescription costs, leaving the balance to the patient. In many countries featuring single-payer models, health plans determine which drugs are available and how they are to be allocated to patients. In a similar vein, insurance plans in the United States maintain a "booklet" or listing of what prescription medications are covered under a given plan. This booklet can change from year-to-year, meaning that one year a given insurance company will cover costs for a certain medication and, due to factors like huge price increases, the medication may not be covered the following year.

In the United States, prescribing doctors are an important stakeholder in this issue. Until recently, their responsibility and incentives were not always well established. In the past, it was common practice for pharmaceutical companies to offer doctors fees for research and clinical assessments. Because these fees created at least the appearance of a conflict of interest, legislation and regulation began to require greater disclosure and reporting. Now, all compensation, including nonmonetary items such as food and entertainment, that pharmaceutical companies provide to doctors in exchange for research and promotional activities must be reported.[5]

Putting that role aside, doctors are generally expected to treat patients with whatever means result in the highest efficacy levels. Higher prescription drug prices inevitably interact with that responsibility. Recent trends seem to indicate that these tensions will only grow; the number of Americans using prescription medication has increased nearly 10 percent since 1999, to 60 percent of Americans,

and the number of patients who take five or more medications has doubled to 15 percent.[6] As drug prices continue to soar, doctors are placed in the difficult situation of prescribing their patients medication that may not be affordable or performing alternative methods with lower efficacy.

In defending relatively high prices of drugs, pharmaceutical companies routinely cite the high failure rate of new drugs during the FDA approval process and the steep costs of research and development. Indeed, some estimates put the price of developing a new drug at nearly $3 billion when including the cost of failures and drugs that never reach the marketplace.[7] Opponents of this argu-

In the most egregious cases of price increases, companies like Valeant and Turing buy the rights to specialty medications that have been on the market for years and for which there are few direct substitutes. These companies then raise the prices of the drugs exponentially. Decades-old specialty medications often do not have generic alternatives due to traditionally low sales volumes. Therefore, patients who require these medications and have been using them as standard care are left without any real cost-effective alternative when prices skyrocket.

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The Wall Street Journal conducted an exhaustive investigation into the pricing of drugs at Pfizer, which involved interviewing management regarding pricing for its new breast cancer medication Ibrance. The results revealed that Pfizer's multistep pricing process is not based on a single algorithm but is derived—and adjusted—based on a range of external inputs and internal benchmarks. According to the report, research and development costs had minimal influence on the ultimate price per dose set by the company. Rather, factors including demand in the marketplace, competition, the opinions of medical professionals, and potential pressure from insurers heavily influenced the resulting pricing strategy.[9] Pfizer explained that it seeks to reduce this complex analysis into a three-point approach: patients receive maximum access to the drug; payers, such as insurers, will accept the price; and Pfizer receives strong financial returns. In this case, Pfizer spent three years of market research to determine pricing for what was a revolutionary medication to treat advanced breast cancer. The final step of the process was a meeting of Pfizer economists to determine the financial impact to the company, the health insurers, and the patients. Finally, the commercial team decided to set the price at $9,850 per month. This price was approved by Pfizer and, just as the medication was set to go to market, a competitor raised the price of its comparable medication by 9.9 percent, putting the monthly cost of that medication at US$687 more than Pfizer's, on the basis of "reflecting an evolving health-care and competitive environment."[10] According to *The Wall Street Journal*, Pfizer was left thinking, "was $9,850 too low?"[11]

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Pharmaceutical companies also argue that they provide subsidies—sometimes significant ones—for patients who are not able to pay the full cost. These programs include providing medication free of charge to patients in both developed and developing countries, as well as offering a type of financial aid to help other patients obtain the medication at a discount. Pharma companies' programs to provide access to medicines for patients in developing countries are discussed below.

When taken together, the many considerations associated with drug costs and pricing conspire to create a confusing web of social, economic, and political challenges, some of which are detailed below.

Drug Pricing in the United States and around the World

Although the United States is facing rapidly increasing prescription medication prices, this is not the case in much of the world. In the United States, a mostly market-based system provides economic and other incentives for companies that develop new drugs or improve existing ones. The drug companies in market-based systems, benefiting from patent-protected exclusivity, ultimately recoup their large research and development investments with higher market-based prices for their breakthrough products. In other parts of the world, where public health care and prescription drug purchasing systems are commonplace, different factors prevail.

The Wall Street Journal conducted a study comparing prescription drug prices in the market-based United States, using the data available through Medicare Part B, to the prices found in three countries with public health care systems: Norway, England, and Canada's Ontario province. This investigation used both public and nonpublic data.[12] Table 1 summarizes the results of that study. Among the findings was that, in the case of the top 40 selling drugs, prices in the United States were 93 percent higher than in Norway. Similarly, England and Ontario also showed significantly cheaper prices than those found in the U.S. Research seems to conclude that, in general, branded prescription drugs are more expensive in the market-based U.S. system than in other developed countries.[13]

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Table 1 Drug Price Comparison

Drug	Dose Size	Medicare (U.S.)	Norway	England	Ontario	Drug Used for
Lucentis	0.5 mg	US $1,936	US $ 894	US $1,159	US $1,254	Macular degeneration
Eylea	2 mg	1,930	919	1,274	1,129	Macular degeneration
Rituxan/MabThera	500 mg	3,679	1,527	1,364	1,820	Rheumatoid arthritis
Neulasta	6 mg	3,620	1,018	1,072	n/a	White blood cell deficiency
Ayastin	100 mg	685	399	379	398	Cancer
Prolia	60 mg	893	260	286	285	Osteoporosis
Alimta	100 mg	604	313	250	342	Lung cancer
Velcade	3.5 mg	1,610	1,332	1,191	n/a	Cancer
Herceptin	100 mg	858	483	424	493	Breast cancer
Eligard	7.5 mg	217	137	n/a	247	Prostate cancer

Source: Jeanne Whalen, "Why the U.S. Pays More Than Other Countries for Drugs," *The Wall Street Journal*, December 1, 2015.

drug prices; structural differences in the health-care system, the lobbying and political power of pharmaceutical companies, and the fear of rationing all contribute to the increased prices in the market.[14] Conversely, the state-run health systems in other developed countries, like Norway, exert strong negotiating leverage with drug companies. In these countries, nearly all drug purchasing is completed by government agencies, shifting the power from pure market demand to a single government purchaser. In these systems, it is common for government health-care agencies to set firm caps on pricing, require strong evidence that breakthrough drugs truly provide higher value than existing medications, and refuse to pay for higher-priced drugs that offer only minimal improvements over cheaper alternatives.[15] By contrast, the U.S. marketplace is more disjointed. Individuals, employers, large and small insurance companies, and even state and federal government agencies foot the bill for medications, resulting in decreased bargaining power. Furthermore, Medicare, which pays for more medications than any other company or agency in the country, is legally prevented from negotiating pricing.[16]

Drug manufacturers and developers are quick to note the huge financial disincentives posed by European public health-care systems. Lower returns coupled with strong governmental control arguably result in decreased research investment and less patient access to life-saving drugs. Without the large profits achieved through the U.S. pricing model, new drug development would sharply decline.[17] Per Pharmaceutical Research and Manufacturers of America (PhRMA) executive vice president Lori Reilly, "The U.S. has a competitive biopharmaceutical marketplace that works to control costs while encouraging the development of new treatments and cures."[18]

Below is a brief summary of drug pricing approaches in key European countries.

Norway, Canada, and the United Kingdom

Norway created the Norwegian Medicines Agency (NMA) to determine the appropriateness of specific drugs for treatment. The agency evaluates patient information to determine the cost-effectiveness of new drugs. Pharmaceutical companies submit a price for reimbursement, which must be below the maximum price set by the agency, and the pharmaceutical companies must file detailed documents outlining the additional benefits and value that the new drug provides that existing drugs do not. QALY, or quality-adjusted life year, is a metric that is often used to measure the value of the drug.[19] Interestingly, Medicare in the U.S. is prohibited from incorporating such an approach. Many drug companies ultimately discount their drugs to ensure that they are accepted by NMA for inclusion in the health-care system, though companies are able to resubmit rejected drugs if they can improve the value proposition.[20]

England's health-care cost agency, the National Institute for Health and Care Excellence (NICE), is one of Europe's strictest regulators. Providing a high value is critical to any specific drug's acceptance by NICE; the agency evaluates the cost versus effectiveness of drugs, ultimately determining whether the medication provides enough benefit to warrant coverage. If NICE determines that the value offered by the new drug is too low compared to the price, drug makers have the opportunity to try for acceptance again with a revised price point.[21] The level of spending by the National Health Service (NHS) on individual drugs is also capped, and the pharmaceutical industry must reimburse the NHS for any additional spending over that cap. Nearly every drug covered by both Medicare Part B and the English health-care system was more expensive in the U.S.[22]

Though the Canadian health-care system does not include a centralized government agency responsible for all drug payments and negotiations, the country has been able to maintain lower drug costs due to government regulation.[23] First, maximum drug prices, based on the effectiveness and overall value of the pharmaceutical product as well as the cost of the drug in the U.S. and Europe, are set by Canada's Patented Medicine Prices Review Board. After the price ceiling is set on a particular drug, the pharmaceutical company producing the product is prohibited from increasing the price above the comparable U.S. or

European price. Additionally, the annual rate of price increase is capped at Canada's rate of inflation.[24] Because Canada has a nationalized system with heavy subsidies for low- and fixed-income citizens, the Canadian government also must determine whether or not any specific drug will be available to seniors and those on government assistance. The Canadian Agency for Drugs and Technologies in Health ultimately makes this decision. These regulations appear to effectively reduce costs, especially when compared to the U.S. For example, of 30 pharmaceutical drugs covered by both Ontario's Ministry of Health and Long-Term Care and the U.S.'s Medicare Part B, only 7 percent of the drugs were more expensive in Canada.[25]

Obviously, the significant difference in health-care systems and prescription medication practices makes it extremely difficult to debate whether the U.S. approach or the Norway-England-Canada approach is better. Of more practical relevance, it would be extremely difficult for the U.S. to adopt the approach used in these three countries. Indeed, the U.S. has (so far) rejected a universal, government-paid health-care system.[26] The arguments for and against that type of system are well-documented and will not be addressed here, but it is worth mentioning that there are valid reasons for opposing it. One is that adopting a universal system could result in the government being unwilling to pay for certain medications, something that is quite controversial in the U.S., where freedom and choice are highly valued.[27] This reality complicates the process for encouraging development of specialty and orphan drugs that by definition treat a very small portion of the population. In these cases, there is usually a lack of effective alternatives or generic medications and it is only with strong economic incentives that pharmaceutical companies are willing to take the risk of development new products. As such, a public health-care system does not provide a solution to high drug prices in cases where there are little to no alternative treatments.[28]

Germany, Spain, and Italy

Another approach to drug pricing, which has features of both a private, market-based system, like that of the United States, and a public system, like that of Norway, can be found in Germany, Spain, and Italy. A *New York Times* analysis described how these countries approach the pricing challenge.

In Germany, Spain, and Italy, pharmaceutical drugs are categorized into groupings with other similar drugs.[29] Insurers, whether public or private, then set a single specific price that they will pay for any drug that is grouped within a specific category. This price is referred to as the "reference price." If any individual drug within a category is priced higher than the set reference price for that category, the consumer must pay the excess cost if he or she wants the more expensive drug.[30] This approach results in significant consumer pressure on the drug manufacturer. When a low reference price is set, consumers become more willing to switch the specific drug that they are taking to avoid any additional, uncovered cost. Drug companies, with the desire to keep consumers, respond by lowering their price to as close to the reference price as possible.[31] Germany, Italy, and Spain vary slightly in how reference prices are actually set. In Germany and Spain, averages are used to calculate the proper reference price, while in Italy, the lowest price in each drug category effectively acts as the reference price.

Price controls, whether through government agencies or insurers, are often blamed for slowing drug research and development. While this may be rooted in some truth, the reference price strategy can still result in financial incentive for innovation. When a new, breakthrough drug is developed, reference pricing allows for that drug to be placed into a category by itself, eliminating the price competition seen in categories of drugs established with multiple competitors. The new drug is still able to reap the financial benefits of being a first-to-market innovator, likely for many years.[32] Additionally, the reference pricing strategy can encourage innovations within long-established drug categories. When an existing drug within a crowed, competitive drug category is improved and its cost to manufacture is reduced, the drug manufacturer can likewise lower its price point in an attempt to steal market share. This results in savings to the end consumer.

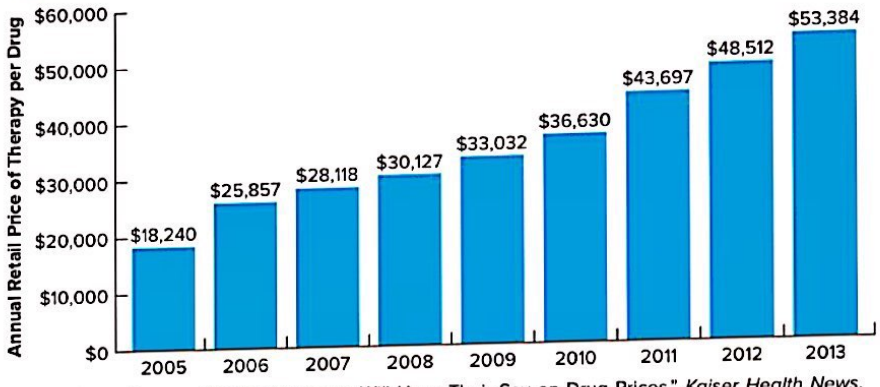
As stated already, it is difficult to argue against a system that has prices a fraction of those in the U.S., but it is worth mentioning that this system is still difficult to implement in cases where there are no comparable drugs. Furthermore, companies could shave margins on drugs that have comparable alternatives but attempt to make up those margins in areas where they provide novel medications. Finally, as seen with Pfizer's pricing example, pharmaceutical companies routinely look to competitors for guidance on pricing. Implementing a reference-pricing system could incentivize companies to set higher prices knowing that the government will be imposing a bottom price or average price and encourage a type of price-fixing.

Specialty and "Orphan" Drugs

Specialty drugs—which are generally understood to be drugs that are structurally complex and often require special handling or delivery mechanisms—are typically priced much higher than traditional drugs. While some of these drugs have been groundbreaking in the treatment of cancer, rheumatoid arthritis, multiple sclerosis, and other chronic conditions, the cost of treating a patient with specialty drugs can exceed tens of thousands of dollars a year. Over the past decade, the industry has seen significant increases to the pricing of specialty drugs. Figure 1 shows the growth in these costs.

a specific category. This price is referred to as the "reference price." If any individual drug within a category [illegible] reference price for that category, the excess cost if he or she [illegible].[30] This approach results in chronic conditions, the cost of treating a patient with specialty drugs can exceed tens of thousands of dollars a year. Over the past decade, the industry has seen significant increases to the pricing of specialty drugs. Figure 1 shows the growth in these costs.

Figure 1 Growth in Average Annual Cost of Specialty Drug Regime



Source: Anna Gorman, "California Voters Will Have Their Say on Drug Prices," *Kaiser Health News*. January 29, 2015, http://khn.org/news/california-voters-will-have-their-say-on-drug-prices/.

Depending on the effectiveness, demand, and disease being treated, some specialty drugs cost upwards of three-quarters of a million U.S. dollars annually. In fact, within the last few years, a third of all spending on prescription drugs in the U.S. has been dedicated to specialty drugs. This has resulted in a surge in the development of new specialty drugs; since 2010, the U.S. Food and Drug Administration (FDA) has been approving more specialty drugs than traditional drugs. For example, in 2014, specialty drugs accounted for 54 percent of all FDA approvals.[33]

Another classification of drugs—called "orphan drugs"—are pharmaceutical products aimed at rare diseases or disorders. In the market-based U.S. system, orphan drugs can be financially lucrative for drug developers, especially since the passage of the Orphan Drug Act of 1983. Since the passage of the law, over 400 new orphan drugs have received FDA approval, resulting in treatments for nearly 400 rare diseases. In the U.S., orphan drugs often cost 20 times that of drugs used to treat traditional disease. Additionally, the market for orphan drugs continues to grow. More than 30 million U.S. citizens, representing almost 10 percent of the entire population, are estimated to be inflicted with a rare disease. While demand for traditional prescription drugs is only expected to increase 4 percent annually in Japan, the U.S., and Europe through 2020, total sales for orphan drugs will increase by 11 percent year-over-year. By 2020, nearly a fifth of all nongeneric drugs sold globally will be orphan drugs.[34]

As discussed previously, the U.S. spending on prescription medication is substantially higher than in most other countries. One argument justifying these high prices is that the high prices for medications in the U.S. and some other developed countries make it possible for the same companies to offer medications needed in developing countries at a significant discount.

Access to Medicine and Pricing in Developing Countries

Prescription drugs are the primary method of medical treatment in most developing countries and largely dominate total health-care spending in these economies. As a result, drug affordability in emerging countries is critical to ensuring medical treatment for those who are in need. Despite aid from the international community, developing countries still lack access to life-saving medications. Less than 20 percent of all drug importing, and only 6 percent of all drug exporting, occurs in emerging nations. Furthermore, a full third of people in these countries are without consistent access to prescription drugs.[35]

One grouping of major global initiatives that are helping to make medication more available to the developing countries is the Neglected Tropical Disease (NTD) programs. NTDs are defined as common, easily transmitted diseases that are most often found in the approximately 150 developing nations located in tropical regions. The economic impact of these diseases is estimated to be in the US$ billions annually, directly and indirectly affecting more than a fifth of the world's population. Often, factors such as unsanitary water and livestock contribute to the spread of NTDs.[36] Specific programs, such as the one established by the Centers for Disease Control and Prevention (CDC), aim to combat NTDs directly. This includes attempting to completely eliminate diseases through Mass Drug Administration (MDA) programs, as well as working together with pharmaceutical companies and local NGOs. With a lack of formal doctors and nurses in many of these areas, localized community leaders and volunteers, such as teachers, function as drug administrators. These volunteers have the training required to effectively and properly provide drugs to the community members. Pharmaceutical companies provide support through large drug donations.[37,38] The U.S. Agency for

International Development (USAID) is a key partner with organizations like the CDC and the World Health Organization (WHO). In addition, USAID, CDC, and WHO also collaborate with other organizations, including foundations such as the Bill and Melinda Gates Foundation, as well as individual pharmaceutical companies that donate medications that can combat these diseases.

In the United States, concern about NTDs and the lack of incentives for pharmaceutical companies to develop drugs for those diseases caught the attention of three academics from Duke University. In their 2006 paper, researchers David Ridley, Henry Grabowski, and Jeffery Moe proposed a voucher system based on the Orphan Drug program to reward companies for investing in the development of drugs targeted at treating NTDs.[39] Under this system, the incentive provided to pharmaceutical companies developing NTD treatments would be the expedited FDA review of a subsequent drug of the company's choice, potentially generating millions of dollars of added revenue due to the fact that the chosen drug would gain market access earlier than would otherwise be the case. The researchers also suggested providing some flexibility in redeeming this reward, including allowing the benefit to be sold to another company. In the U.S., the voucher system idea quickly transformed from concept into law; U.S. Senator Sam Brownback adapted and included the program in the Food and Drug Administration Amendments Act (FDAAA) of 2007.[40]

In addition to the above initiatives, pharmaceutical companies are increasingly evaluated and assessed based on their ability and willingness to make drugs available to poor countries. The Access to Medicine Foundation, an independent nongovernmental organization, publishes the "Access to Medicine Index," which ranks pharmaceutical companies by their access-related policies and practices. The index is based on an analysis of 95 indicators, in relation to 106 countries and 47 diseases.[41] Each company is ranked separately according to its commitment to its performance in seven categories: (1) General Access to Medicine Management; (2) Public Policy and Marketing Influence; (3) Research and Development; (4) Pricing, Manufacturing, and Distribution; (5) Patents and Licensing; (6) Capability Advancement; and (7) Donations and Philanthropy. Figure 2 shows the overall ranking for the top 20 pharmaceutical companies globally.

In addition, individual companies have taken it upon themselves to provide free or low-cost access to their own production and distribution channels or with partners. For example, the pharmaceutical giant Merck developed a drug—Mectizan—to fight onchocerciasis, also known as river blindness, in 1987 and established the Mectizan Donation Program (MDP) to oversee the initiative.[42] Onchocerciasis is found primarily in Latin America and Africa. It is transmitted through the bites of black flies and can cause disfiguring dermatitis, eye lesions, and, over time, blindness. MDP approves more than 140 million treatments for onchocerciasis annually.[43] Another company, Novartis, developed a highly effective malaria treatment called Coartem that was made available in a lemon-flavored disbursable format, making it easier for children to take. It has become one of the largest access-to-medicine programs in the health-care industry, measured by the number of patients reached annually.[44] Since 2001, working with a range of international organizations such as the World Health Organization and the Gates Foundation, Novartis has provided more than 600 million treatments for adults and children, to more than 60 malaria-endemic countries, contributing to a dramatic reduction of the malaria burden in Africa.[45] It is estimated that 3.3 million lives have been saved as a result.[46] Interestingly, Novartis chose to sell the drug on a cost-recovery (not-for-profit) basis rather than give away the drug, perhaps because it believes this approach will make the program more sustainable over the long term. Novartis was the first recipient of an NTD priority review voucher described above.

The Future of Drug Pricing around the World

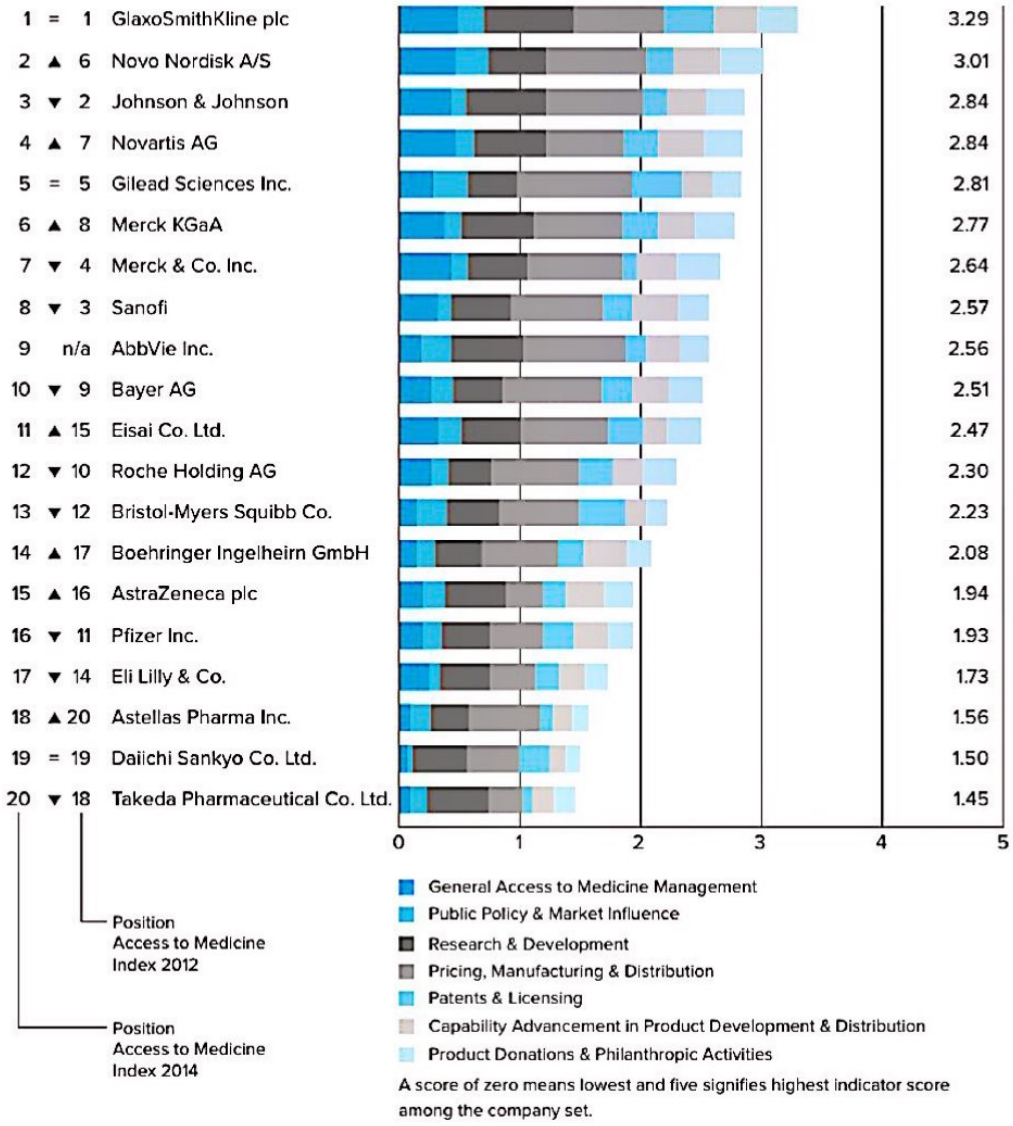
The question of how to price pharmaceutical drugs is difficult and ethically complex. As an industry directly related to the health and welfare of humankind, political and ideological decisions regarding health-care provision and delivery can be deeply personal for many. In addition, income disparities both within countries and across the developing world are on the rise, and these differences pose difficult questions about fairness, equity, and moral obligations.

It seems clear that drug pricing will remain a contentious and debated issue. From the perspective of globalization, it is interesting to consider whether or not price differentials for drugs will persist, or, as is the case in many other areas, prices will converge due to growing wealth in developing and emerging markets, regulatory coordination across jurisdictions, increasing market pressures, or some combination of these factors.

Questions for Review

1. What is the proper balance for pharmaceutical companies between delivering the fiduciary obligation of earning a profit for owners and providing life-saving or life-extending drugs to customers? How much profit is too much profit and who determines the amount? How does that balance get achieved?
2. Should the United States consider other methods for controlling drug pricing, such as those used in some European countries? Are there other ways the United States might use market forces or incentives from government programs to control drug prices? Given that one of the most prevalent and persuasive

Figure 2 **The Access to Medicine Index 2014—Overall Ranking**



A score of zero means lowest and five signifies highest indicator score among the company set.

arguments for relatively high drug prices is the high cost associated with research and development and regulatory compliance, is there a way to combat those costs?

3. What are your views on the role of patents in prescription medication? What is the proper balance of patent protection for costly research and development versus lack of competition?
4. What should be done on the issue of orphan drugs to combat high costs without viable alternatives? Should there be cost restrictions? Should there be patent restrictions?
5. What should be done in cases like Turing and Valeant Pharmaceuticals, where decades-old medications that do not have competitors are purchased and prices are raised exponentially? If you think restrictions should be imposed, what is the justification for treating that case differently than the case where a drug, with patent protection, comes to market and is priced for hundreds or thousands of dollars?
6. How can the United States and other developed countries stimulate greater research and development of treatments for NTDs and offer those drugs at prices that are affordable?

Source: This case was prepared by Matthew Vassil of Villanova University under the supervision of Professor Jonathan Doh as the basis for class discussion. Additional research assistance was provided by Ben Littell. It is not intended to illustrate either effective or ineffective managerial capability or administrative responsibility.

ENDNOTES