
Pharmaceutical Spending and German Reunification: Parity Comes Quickly to Berlin

Eric M. Katz, J.D.

As the Berlin Wall fell and the population of the Federal Republic of Germany (FRG, West Germany) swelled by 25 percent with the addition of the former German Democratic Republic (GDR, East Germany), the health care system struggled to keep pace. This article examines drug outlays by the statutory sickness funds during the first 2 years of unified operations. It shows that providing equivalent coverage quickly led to equal rates of pharmaceutical consumption nationwide, while in Berlin the former East outdistanced the West by a considerable margin.

INTRODUCTION

The German Reunification Treaty of August 31, 1990, brought rapid consolidation in the health care system as well as the Nation's political structure. Even as the 16 million citizens of the former GDR were folded into the social insurance schemes of the 64 million-strong FRG on January 1, 1991, many financial details were still

This work was prepared with the support of the Fulbright Foundation and the U.S. Public Health Service. Eric M. Katz is with the U.S. Public Health Service. The statements contained in this article are solely those of the author and do not necessarily reflect the views or positions of the Health Care Financing Administration, the U.S. Public Health Service, or the Fulbright Foundation.

¹Even though certain high-wage earners (more than 4,875 Deutschmarks [DM, \$3,000] monthly in 1991) and some others (e.g., retirees who had not been subject to insurance mandates during their working years) are not subjected to the mandatory coverage requirement, most elect to join the statutory scheme voluntarily and most of the remainder insure through private sector carriers. Included in the calculation of health coverage are welfare beneficiaries, who receive direct health care vouchers from the government as needed and, accordingly, are considered insured, although they fall outside the statutory scheme. Not included in the claim of near-universal coverage are certain non-citizen residents, such as applicants for asylum.

uncertain. One such uncertainty was whether health care costs for the new GDR enrollees would rise to FRG levels, and if so, how rapidly.

This article looks at pharmaceutical spending before and after reunification and shows that providing equivalent coverage has led rapidly to equal, indeed higher, utilization in the former GDR.

FRG HEALTH CARE IN THE 1980s

Insurance Structure

The FRG has a tradition of universal health care coverage going back over a century to the government of Otto von Bismarck. Coverage in the modern FRG comes primarily from a statutory health insurance scheme relying on local sickness funds. For most workers and their families, participation in a statutory sickness fund is mandatory. For other groups, such as retirees, students under age 30, the unemployed, and the disabled, participation is generally either required or permitted. Dependents of fund participants are covered automatically without any additional premiums. In the late 1980s, there were more than 1,200 statutory sickness funds serving about 38 million insured members plus 16 million dependent family members (Bundesvereinigung Deutscher Apotheker-Verbände, 1991), as well as a number of private insurance companies. Together, this brought coverage to more than 98 percent of the population, according to government estimates.¹ Accordingly, West Germany

has enjoyed near-universal coverage while preserving multiple non-governmental insurance schemes.

The statutory sickness funds are funded through a fixed contribution level from wages, consistent with the principle of citizen "solidarity" that underlies German social welfare programs.² The contribution level rose from an average 11.38 percent of gross wages in 1980 to 12.90 percent in 1989, split equally between employer and employee.³ The sickness funds are self-standing financially, meaning that any excess of spending over income must be recovered the following year by adjusting the fixed contribution level, rather than through government subsidy.

Pharmaceutical Benefits and Spending

In return for their salary-based contributions, enrollees receive comprehensive benefits, including generous coverage for pharmaceutical products. For inpatients, drug costs are included in the hospital's global fixed price per day and the sickness fund pays all but a few Marks of daily copayment. For outpatients, benefits cover all drugs that are sold only in pharmacies and prescribed by a physician

(Bundesministerium für Gesundheit, 1992). This includes not only all prescription drugs, but also a range of non-prescription drugs available only in pharmacies, which are covered as long as the physician has written a formal prescription and not merely given an informal recommendation. In 1990, 56.6 percent of such non-prescription drugs were covered by the sickness funds, representing 5.1 billion DM⁴ in pharmaceutical costs to the funds (Bundesvereinigung Deutscher Apotheker-Verbände 1991).

Outpatient drugs often require a small patient copayment. In the late 1980s, just before reunification, the copayment depended on several factors. One was family income level, because lower income families (in 1989, defined as families of 4 with an income level of 2,310 DM or less per month) were exempted from prescription copayments. Another factor was the choice of drug itself, because under provisions of a health care reform statute that took effect in 1989, some drugs were subject to categorical fixed reimbursement rules that virtually eliminated any patient copayment. In any case, copayments for pharmaceuticals never exceeded 3 DM during the 1980s. In 1993, additional health care reform measures took effect that increased the copayment requirement to a maximum 7 DM and extended this to fixed-reimbursement products as well.

Escalating drug spending was considered a growing problem area for the FRG sickness funds throughout the 1980s. Outpatient drug spending by the sickness funds, for example, which was 276 DM per person in 1984, had risen to 405 DM per person by 1990, despite efforts at control (Figure 1). This translates to a rise from 14.3 percent of all health care expenditures in 1984 to 15.4 percent by 1990.⁵ Unit consumption, which had fallen in the early 1980s, began to climb later in the decade

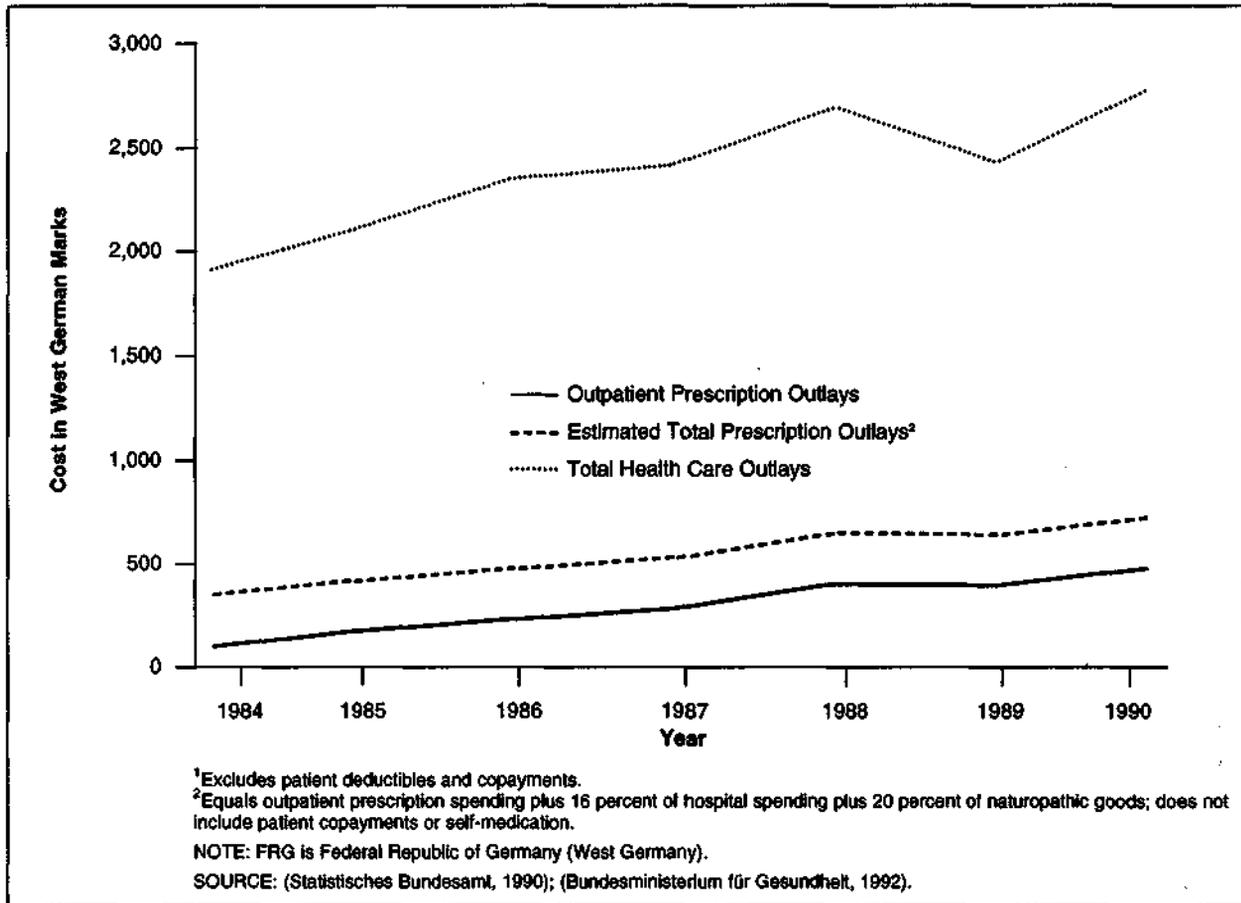
²The contribution level for health coverage does, however, have an earnings ceiling, so that a \$150,000 per year executive does not pay 10 times the premiums of a \$15,000 laborer. This ceiling was a monthly gross income of 4,875 DM (\$3,000) in 1991 and 5,400 DM (\$3,500) in 1993.

³Retirees began in 1991 to pay 50 percent of their own premiums, using pension income as the contribution base; the self-employed pay the entire contribution themselves.

⁴This represents approximately \$3.15 billion at the 1990 exchange rate of 1.49 Marks to the U.S. dollar. The exchange rate currently stands at 1.71 Marks to the U.S. dollar. When reunification brought an end to the former East German Mark (Ost-Mark), the Ost-Mark was generally convertible to the West German DM at an even exchange rate, although its true economic value may have been lower.

⁵These proportions are not directly comparable to U.S. spending, since German benefits include coverage for many non-prescription drugs and other program benefits, such as salary replacement for long-term illness. By general comparison, however, typical U.S. health insurers spend well under 10 percent of total expenditures on outpatient prescription drug benefits.

Figure 1
FRG Sickness Fund per Capita Prescription Expenditures¹: 1984-90



from 11.55 prescriptions annually per insured family member in 1984 to 13.77 in 1990 (Schwabe and Paffrath, 1992). This number of prescriptions represented 389 defined daily doses (DDDs), such as single tablets. Viewed in another light, this means that every 100 Marks the sickness funds spent on outpatient physicians' fees led to an additional 85 Marks in pharmaceutical costs (Statistisches Bundesamt, 1992). These figures translated to one of the highest per capita consumption levels for drugs in the entire world (Figure 2).

Reform measures, such as a mandatory 5-percent rebate from pharmacies to the sickness funds in the early 1980s and expansion of the fixed reimbursement system that favored generic products in the

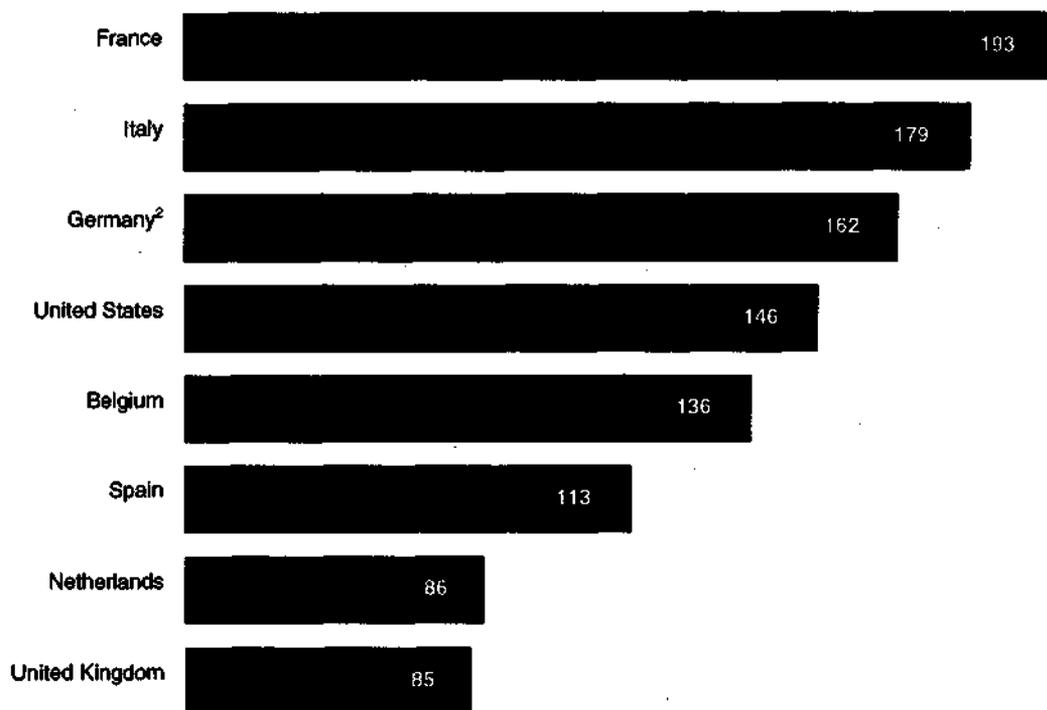
late 1980s, did not eradicate the rise in sickness fund outlays for pharmaceuticals. A number of initiatives toward further health care reform were already planned when the political climate made it possible for East and West Germany to become one unified country and for their health care systems to unify as well.

GDR HEALTH CARE IN THE 1980s

Insurance Structure

The GDR also followed the Bismarckian model of universal and comprehensive health care coverage prior to reunification. The GDR, as a centrally planned economy, operated a single, State-managed social

Figure 2
Per Capita Pharmaceutical Expenditures,¹ by Selected Country: 1991



¹In U.S. dollars.

²Despite overall health care expenditures less than 60 percent of United States levels, (1,487 versus 2,566 U.S. dollars per capita), Germany's sickness funds spend more on pharmaceuticals than the United States.

SOURCE: *Scrip* (1800), Mar. 5, 1993.

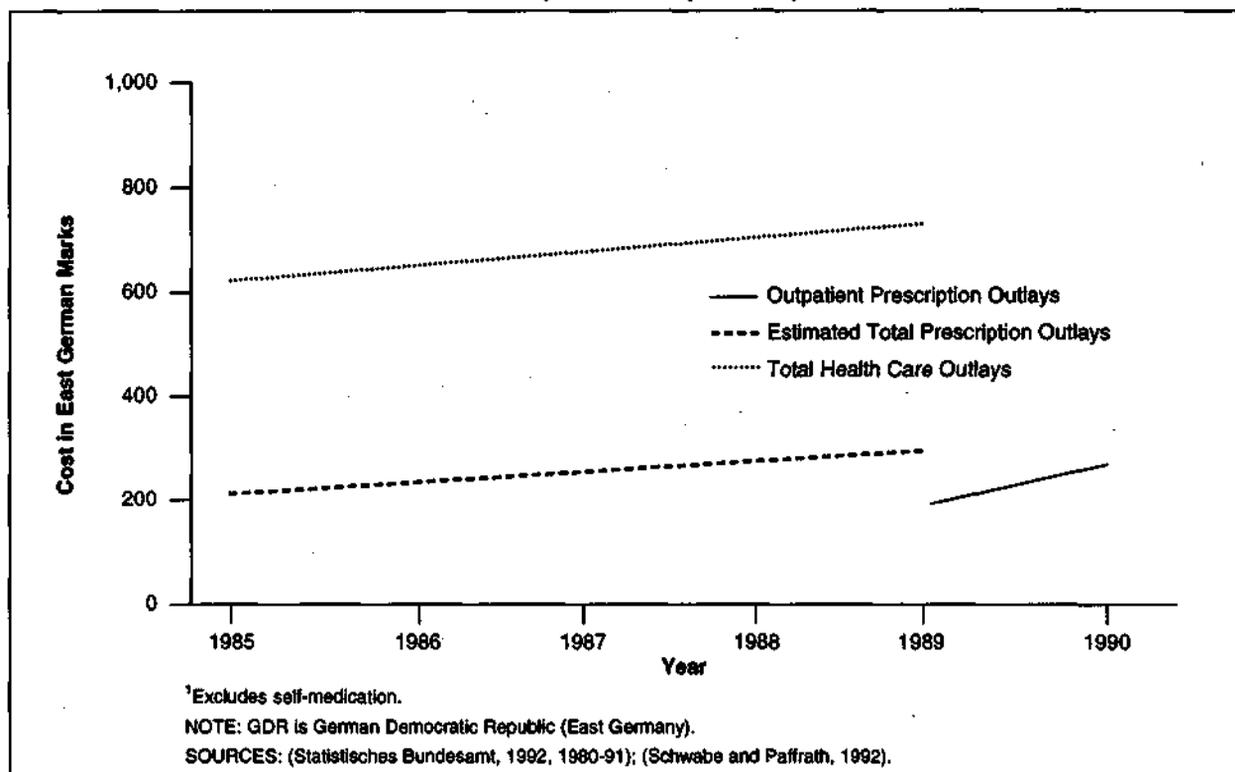
insurance mechanism that provided comprehensive health care benefits to virtually the entire population. Workers paid a flat 10 percent of gross wages, up to a total of 60 GDR Marks monthly, for an insurance scheme that included comprehensive health care benefits as well as pension, disability, and other protections. The State-controlled workplace contributed an equal amount, and the State itself guaranteed the fiscal health of the plan and all benefits. High-wage workers (more than 600 GDR Marks per month) were permitted to secure an expanded benefits package for an additional 10 percent deduction. Dependents were automatically covered, as well as those in retirement or on disability, resulting in nearly universal coverage (Beske et al., 1993).

Pharmaceutical Benefits and Spending

The State-run plan in the former GDR included full prescription drug benefits for both inpatient and outpatient treatment. Consistent with the other health care benefits, there were no deductibles or copayments. As in the FRG, benefits covered all drugs available only in pharmacies, both prescription and over-the-counter, when accompanied by a doctor's prescription.

The pharmacy distribution system was well-developed. There were more than 1,600 retail pharmacies, as well as about 400 dispensaries affiliated with hospitals, outpatient polyclinics, and other providers. Although the GDR had only one retail pharmacy for each 8,000 residents, one-half the

Figure 3
GDR Sickness Fund Per Capita Prescription Expenditures¹: 1985-90



number of the FRG, overall it had one pharmacist for every 4,100 residents, a rate which was comparable to the FRG. The number of available products was lower, however, with only about 2,000 formulations on the market, including about 200 homeopathic drugs and 450 non-prescription preparations (Schwabe and Paffrath, 1992).

Drug costs had been rising in the GDR, as in the FRG, throughout the 1980s. Per capita spending in 1985 for outpatient prescription drugs amounted to 232.26 GDR Marks; by 1989, the last year GDR data was collected, this figure had risen to 295.02 GDR Marks, or by 27 percent (Figure 3). Specific monetary comparisons between East and West for pharmaceutical use are somewhat difficult, in part because the official translation of 1 former GDR Mark for 1 FRG Mark may not represent equal value and also because of

price differences between East and West.⁶ In addition, some government statistics may have lacked sufficient comprehensiveness or even accuracy to prove reliable.

Because of the drawbacks of comparing monetary figures, tablet consumption may prove a more useful measure of relative consumption. The number of DDDs in the GDR, for example, is estimated at 431 in 1989 and 414 in 1990 (Schwabe and Paffrath, 1992). This 1990 figure is larger by 25 DDDs, or 6 percent, than the 1990 consumption in the FRG.

Rising drug expenditures, accordingly, had been by any measure a growing challenge to health care costs on both sides of the border when, in late 1989, the Berlin

⁶ While most products were less expensive in the East (e.g., in 1989, 50 vitamin C tablets cost 4.70 GDR Marks but 9.75 DM), the price disparity for essential products was particularly steep: 20 aspirin tablets cost only 0.70 GDR Marks, compared with 5.30 DM.

Wall fell and the process of German reunification took off with a velocity that surprised even the most enthusiastic of supporters. The reunification treaties recognized the need to address health care coverage for the "new" Germans (i.e., the citizens of the GDR), which had obvious financial implications for the West German sickness funds. While drug spending was perhaps merely one aspect of a general crisis in exploding health care costs, the rising share of expenditures going toward the purchase of pharmaceuticals made drug spending an attractive target for reform efforts. And many reforms had already been designed when reunification took effect.

THE REUNIFICATION PROCESS

General Provisions

In 1990, as the Nation found itself facing the prospect of insuring millions of "new" German citizens, FRG experts were already deep in the process of structural health care reform. The speed of reunification outdistanced the pace of reform in many areas, however, and the reunification treaties extended the FRG model of coverage then in effect to the former GDR as of January 1, 1991.

One unknown element of health care reform effort was whether the new enrollees would incur health care costs at the same levels as the old enrollees, and if so, how rapidly this might begin to occur. There seemed to be a general consensus, however, that somehow health care expenses should (and indeed must) stay lower in the East than in the West, given the lower economic output of the new States. Whether this would prove feasible with pharmaceutical consumption was not known, but reunification was an established fact that could hardly wait for further planning or research.

The general plan for "reunification" of health care coverage meant establishing 199 new statutory sickness funds to replace the social insurance system of the former GDR. These funds were modeled after the 1,138 FRG funds both in benefits and premium levels (12.8 percent of wages, split between employer and employee). As with other aspects of the reunification, some special provisions and exceptions were made to the health care system to accommodate the new citizens of the five new German States (Beske et al., 1993).

The goal of many of these special provisions was protection of the financial base of the sickness funds. It seemed clear, for example, that the new funds would have less income than the older funds in the West. This was because of notably lower wage rates in the East,⁷ as well as high unemployment rates in the East after reunification. Accordingly, it was estimated that the new funds would have no more than 60 percent of the income of their older counterparts.

Some relief in economic outlook seemed possible on the expense side of the equation, however. Even at a calculation of 1 FRG Mark for 1 GDR Mark, a rate that some economists viewed as overly generous to the newcomers, the former GDR system had been spending much less than the average fund in the West. Much of this difference was due to the lower wage rates in the former East, meaning that both physicians' incomes and overhead expenses were much lower than in the West. Acknowledging and even preserving this disparity would help the fiscal strength of sickness funds in the East.

Accordingly, one transition rule was that ex-GDR residents would receive benefits only up to the billing rates of their local

⁷ Unionized industrial wages, for example, were set at 60 percent of the level of equivalent work in the West.

providers, unlike residents of the "old" States whose benefits covered any appropriate doctor, whether in the East, the West, or other countries. Reimbursement for most health care services was set at 60 percent of fees in the former West. This rule apparently stemmed from the simple financial goal of keeping outlays in line with projected fund income, as well as the intent of keeping wage and price levels consistently lower than West German scale. Another important, if unintended, result, however, was that East Germans could not afford to flee their own health care delivery system for doctors in the West, and thus an immediate collapse of the former GDR health care infrastructure was avoided.

Pharmaceuticals and Reunification

Special transition provisions also applied to pharmaceutical benefits. In general, these provisions sought to extend the gap in reimbursement levels into the pharmaceutical arena, and to cushion the new enrollees from the financial impact of copayment requirements. These provisions included the following.

Transition in Pricing

The State attempted initially to impose a 45-percent discount on drug prices throughout the former GDR, a move which failed after one fiscal quarter under heavy industry protest. Instead, every pharmaceutical manufacturer was requested to offer a 25-percent discount across-the-board to wholesalers supplying the new States, to which every manufacturer agreed. These discounts resulted, in turn, in a mandatory 24-percent discount from wholesalers to retailers, and a 22-percent discount from retailer to patient. If patients from the East attempted to fill their prescriptions in the West,

where prices were higher, the sickness fund would reimburse only at the lower price. This meant that, in contrast to most health care services where sickness funds in the East paid 60 percent of Western levels, pharmaceutical products would be paid at 78 percent.

Transition in Copayments

Patients from the new States were given some reprieve from the drug copayment provisions. Specifically, where a normal wage-earner in the "old" States would have made a 3 DM copayment per drug, the GDR contribution level was set at zero for the first half of 1991, and 1.50 DM for the second half of 1991 and 1992. As with residents in the old States, the copayment was waived for drugs with government-set reimbursement levels and for low-income families. The definition of low-income for this purpose was only 1,575 DM monthly or less for a family of 4 in the East, compared with 2,310 DM in the West, effectively exempting much of the eastern population from drug copayment requirements (Bundesministerium für Arbeit und Sozial, 1992).

Transition in Market Supply

Another reform relates to the range of available drug products. While there had been about 2,000 different drug products available in the GDR, totaling about 5,500 different packagings (products and dosage forms), the FRG had about 120,000 packagings.⁸ The count in the FRG was already scheduled to drop significantly, because

⁸ While the disparity between FRG and GDR may at first seem overwhelming, it may help to note that the bulk of drug use in both countries was concentrated in a few drugs. In the FRG, for example, the top 1,000 sellers represent more than three-fourths of the market. In the GDR, the number of available drugs stayed fairly constant at about 2,000 but the specific drugs on the list changed over time. Accordingly, physicians in both countries concentrated their prescribing in a similar number of products.

many drugs were due to lose their marketing authorizations when their pre-1978 approval dossiers came up for re-review under higher contemporary standards of safety and efficacy. In any case, further provisions were needed to streamline the nationwide availability of effective drug products while minimizing the risk of unsafe or ineffective products moving into wider distribution.

Accordingly, products from the GDR were given an automatic temporary marketing authority for both East and West, with clinical data on safety and efficacy required for a subsequent permanent approval. Similarly, approved FRG products were allowed automatic market access to the new States, although products approved before 1978 still faced nationwide market withdrawal unless manufacturers provided adequate proof of safety and efficacy. The combination of change in the health care marketplace and change in regulatory standards led to a steep reduction in the number of approved drugs by mid-1993 to about 57,000 packages. This included about 5,500 items from the former GDR (counting separately each strength, dosage form, and package size of the 2,000 GDR drug products), about 40,000 FRG products approved before 1978, and about 12,000 FRG products approved thereafter.

The goal of these transition rules was a workable mechanism to absorb as many as 16 million new participants into a plan of about 54 million that was already grappling with the challenges of growing expenses. While the success or failure of these efforts in terms of overall health care coverage and costs may hinge on hundreds of analyses, the impact on drug spending is a more discrete question and arguably less complex to measure. The effect of these reforms on drug spending should be of interest beyond Germany's borders, since they are aimed at

expanding the covered population while controlling costs. The ultimate question is actually a simple one: Did pharmaceutical utilization in the East remain at comparatively lower levels, or did consumption in the East begin to rise to the levels of the West, and if so, at what rate?

Reunification and Health Status Indicators

Before entering into analysis of drug spending patterns, it may pay to look at the comparative health status of the East and West German populations in the years preceding the reunification. While some Western observers might assume that Eastern bloc countries with low economic output had suffered from serious health care problems, the fact is that many indicators of health status were similar in the GDR and the FRG at the time of reunification. Infant mortality, for example, was reported at equivalent levels: 7.6 per 1,000 births in the East and 7.5 per 1,000 births in the West, by one account, although the GDR acknowledged it did not follow the World Health Organization reporting standards for infant mortality (Statistisches Bundesamt, 1990).

Incidence of serious childhood illnesses compared favorably. The percentage of people taking an aspirin or similar pain remedy more than once weekly was also similar (15.0 in the East, 13.9 in the West). The East had an even greater supply of some health care resources than the West, such as hospital beds: 9.84 per 1,000 residents in the East, 7.25 per 1,000 in the West (Bundesministerium für Gesundheit, 1992).

Not all health care indicators painted as rosy a picture, of course. Life expectancy in the East was about 3 years lower than that in the West (in 1989, 75.74 years versus 78.68 years for females; 69.73 years versus

72.21 years for males), unadjusted for demographic differences such as emigration factors (Bundesministerium für Gesundheit, 1992). The number of doctors per capita was lower in the East (1:450; 1:333 in the West), although the number of nurses was almost 10 times higher (1:138 in the East; 1:1,261 in the West). This difference could represent a different model of delivery rather than an insufficiency in overall availability of care. Yet whatever the exact comparative health status of old and new States might have been, it may prove appropriate to view the transition process as bringing together populations who shared generally good health status and access to health care but reached the goal through different means.

POST-REUNIFICATION DRUG SPENDING

Reunification Impacts on Drug Expenditures

Analysis of the 2 years following the reunification of the German health care system indicates that spending on pharmaceuticals has not been identical in the East and West. This analysis begins with the national health statistics on sickness fund payments to local pharmacies. While many studies analyze spending per primary enrollee—in other words, per employee—the figures shown here are calculated on the basis of total insured population—in other words, per capita, including dependent family members. This method is intended to correct for the skewing that could be caused by factors like different workforce participation patterns between East and West. Take, for example, a married couple with one dependent child. If both parents work outside the home, as is the model in the East, this represents two

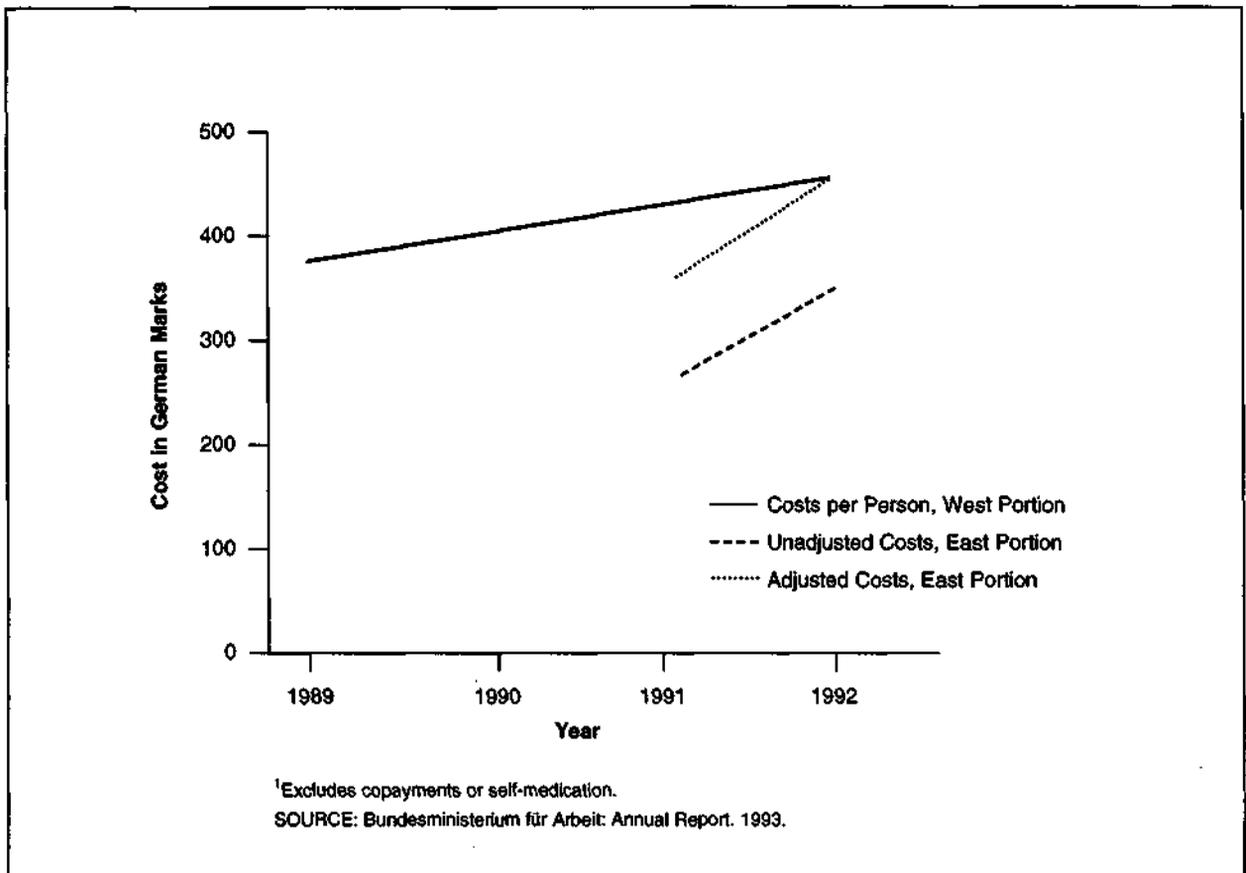
workers with one dependent, and each worker therefore brings an average of only 0.5 workers into the insurance system. In the West, where there is a greater proportion of two-parent, one income families, the sole worker would be bringing two dependent family members into the insurance system—four times the number of dependents per wage-earner as the two-worker family in the East.⁹

In 1991, the Eastern sickness funds spent 275.03 DM per insured family member for outpatient drugs. This was only 64 percent of the spending in the former West (431.34 DM). By 1992, actual spending in the former East rose to 80.9 percent of spending in the former West (382 DM in the East versus 472 DM in the West per insured family member). From this rapid rise, it seems clear that drug spending was moving quickly toward parity (Figure 4).

Such a comparison, however, is incomplete without further adjustment to the data. The reason is that in 1991 and 1992, the sickness funds reimbursed only 78 percent of what the prescription would cost in the West. (The single exception is the first quarter of 1991, where reimbursement was only 55 percent.) This 22-percent discount stems from the price reduction that every drug company provides in the new States: a 25-percent discount to the wholesalers brings a 24-percent reduction to retailers and a 22-percent discount to the consumer. No such similar discounting structure was offered to retail pharmacists in the West. So while the discounts allowed the sickness funds to economize, creating a parallel evaluation model would require

⁹ This theoretical statistical example proves true in the actual enrollment figures. In 1991, for example, the 39 million enrollees in the West brought an additional 17.8 million family members into coverage, while the 11.7 million enrollees in the East brought only 2.8 million. Accordingly, calculating on the basis of total number of insured persons seems to be the only logical way to compare costs accurately between East and West.

Figure 4
German Outpatient per Capita Drug Expenditures, by Statutory Sickness Funds¹: 1989-92



reconstituting the amount of the discount into the net spending figures.¹⁰

Adjusting for this 22-percent price reduction, pharmaceutical spending by the statutory sickness funds throughout the East equalled 352.60 DM per family member in 1991, 81.85 percent of the Western figure (431.34 DM) (Figure 4). Estimates of volume sales (number of DDDs) for 1991 seem to agree with this figure, showing 341 DDDs in the East, 16-percent lower than the 405 DDDs in the West (Schwabe and Paffrath, 1992). But in 1992, GDR

consumption continued a rapid rise, and on a price-adjusted basis this represents 489.74 DM, which exceeds the figure in the West (472 DM) by 3.76 percent.

In summary, it appears that outpatient pharmaceutical consumption reached equivalent levels throughout Germany only 1 year after reunification. Furthermore, despite the coming into force, in the beginning of January 1993, of major restructuring of the pharmaceutical payment scales throughout Germany,¹¹ early figures for the first quarter of 1993 show consumption in the former

¹⁰ Clearly, other potential adjustments could be made as well to make the comparative model even more accurate. For example, the figures presented here do not include patient copayments for drug products, and many more families in the East than the West are exempted from patient copayments due to low family income or similar factors. There is also no adjustment for the age and similar demographic differences between East and West.

¹¹ As part of the Health Care Restructuring Act, effective January 1, 1993, drug copayments grew in amount and scope, reimbursement rates for prescription drugs dropped by 5 percent in the West and 3 percent in the East, and physicians were subjected for the first time to limited financial penalties if they fail to meet broad targets for drug spending on a State-by-State basis.

East still rising slightly even as consumption in the former West is dropping significantly.¹²

On a nationwide basis, therefore, drug consumption seems to have reached equivalent levels by the end of 1992, the second year of reunification.

Relative Importance of Berlin

One difficulty in analyzing post-reunification health care expenditures in the former GDR and FRG is separating the economic aspects from the cultural aspects of health care choices. Put in simple terms, it may be hard to determine if East Germans are changing their pill-taking habits due to reunification of the health care system itself or to changes in the resulting cultural orientation.

In trying to compare populations as similar as possible in terms of social and cultural exposure, East and West Berlin seem particularly appropriate to examine. West Berlin was, following the erection of the Berlin Wall in 1961, isolated from its neighbors in East Berlin and the surrounding GDR countryside. Since the reunification, however, Berlin in many ways looks and works like a city without borders.

The reunification of Berlin therefore deserves further scrutiny in terms of pharmaceutical consumption behavior. If economic and geographic segregation had been the only true cause of differing consumption patterns when Berlin was divided, then one might expect pharmaceutical expenditures to reach equivalent levels quickly as the city reunites. Yet if differences persist, it seems reasonable to assume that

factors beyond simple affordability and access play an important role. Accordingly, a closer view of pharmaceutical patterns in Berlin seems particularly worthwhile.

Drug Outlays in Berlin

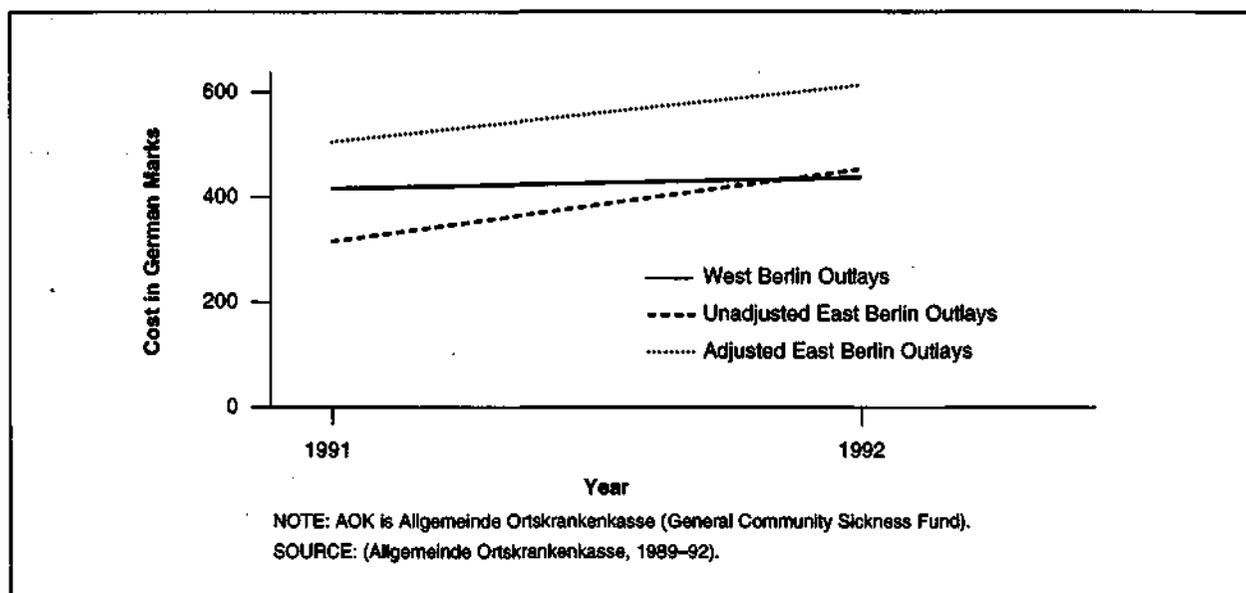
Although nationwide figures suggest that outpatient drug expenditures in the East have merely reached parity with the West, it turns out that in Berlin's largest sickness fund, pharmaceutical use by former East Germans has not only met but greatly surpassed use by former West Germans.

Berlin's largest sickness fund is the AOK (Allgemeinde Ortskrankenkasse [General Community Sickness Fund]).¹³ The AOK covers the majority of West Berlin's population, and, since 1991, the majority of East Berlin's as well. At first glance, it would appear that in the AOK, East Berlin's drug spending still lags behind West Berlin's somewhat. In 1991, the AOK outlays for outpatient pharmaceuticals totalled 193.9 million DM in East Berlin, compared with 356.4 million DM in West Berlin. In 1992, outpatient prescription spending rose 19.24 percent in the East to 231.2 million DM, which still lagged the 389.5 million DM in West Berlin, up 9.29 percent. Even compared on the basis of primary enrollees, since the West has more members than the East, there would still appear to be somewhat of a gap for 1991: 403.80 in the East and 550.81 in the West; and for 1992: 539.61 in the East and 606.48 in the West. Yet because family demographics are different in the East and West, the figures

¹²According to early estimates, first quarter prescription consumption has dropped by 5 percent in the former West, but is up almost 5 percent in the former East. Such a drop in consumption, along with a drop in reimbursement rates and an increase in copayments, would be enough to lower sickness fund outlays for outpatient drugs over 2 billion DM over the year earlier, which was the government's target. Yet this target would be reached despite a trend toward increasing prescription consumption in the former East.

¹³Although clearly the largest single sickness fund in Berlin, the AOK does not in every aspect reflect the overall Berlin community. Retirees, for example, are disproportionately members of the AOK rather than other funds (in 1991, nationwide, the West had 40.8 percent of members, but 49 percent of retirees). Similar demographic disparities apply to AOKs throughout Germany, largely because the local AOK plans serve as insurers of last resort for Germans eligible to participate in a statutory sickness fund.

Figure 5
Outpatient per Capita Drug Expenditure, AOK Berlin: 1991-92



per insured family member (contributing members plus dependent family members) show a different story than these aggregate figures suggest.

In 1992, the AOK program for West Berlin covered 642,234 primary enrollees plus another 196,802 dependent family members. In East Berlin, by contrast, the 428,458 primary enrollees brought only 64,367 dependent family members into the coverage network. This appears due largely to differences in workforce participation rates, since the East has a greater proportion of working females. Such a large disparity in the number of dependent family members actually masks the comparison between East and West on a basis of overall spending or spending per primary enrollee. And, by calculating on the basis of overall covered individuals, the numbers speak differently.

Figure 5 compares AOK outlays per insured family member for pharmaceutical and overall health care spending in East and West Berlin. The figure shows that actual (unadjusted) outlays by the AOK in

1991 for outpatient drugs were 358.72 DM in the East, only 85.1 percent of the 421.56 DM spent in the West. For 1992, actual outpatient drug outlays had soared 30.78 percent to 469.13, surpassing the 464.22 DM figure in the West by about 1 percent. By this reckoning, actual unadjusted outlays in the East had reached parity with Western levels by the second year of the new coverage system.

The fact that, on this basis, actual outlays reached parity in 1992 is in itself a noteworthy finding. Yet the finding that drug spending has risen this substantially in the East is not the most striking discovery. The actual spending levels in East Berlin include the 22 percent discount that former East, but not former West, Germans receive at the retail pharmacy level. To compare actual market value, and not merely the reimbursement rates, requires adjustment of the East Berlin spending figures to reflect full market (West German) pricing levels.

Figure 5 shows the "adjusted" drug spending level for the AOK East Berlin. By

this measure, drug spending in 1991 calculated at West Berlin price levels would be 459.90, which is 109.09 percent of outlays in West Berlin. For 1992, the figures are even starker: East Berlin outlays, once adjusted to West Berlin price levels, were 601.44 DM per insured family member. This is 129.56 percent of spending in West Berlin. In simple terms, it took no time at all for consumption to reach equivalent levels and by the second year the East was consuming about 30 percent more outpatient pharmaceutical products.

Accordingly, while much of the rest of the former GDR has increased its pharmaceutical consumption slowly and has barely reached parity with the West, eastern Berlin already has far surpassed the western part of the city in pharmaceutical consumption.

POTENTIAL EXPLANATIONS FOR THE GAPS

While the rapid rise in East Berlin's drug consumption may be intriguing, the root causes may not prove particularly easy to identify. It might even be wrong to assume that the rise is in any way inappropriate, since, for example, drug therapy could be replacing other treatments that are less cost-effective. Yet to the extent that drug spending in the East is indeed rising too quickly, it may prove worthwhile to consider some of the following possible causes.

Volume Factors

Some differences might relate to volume factors alone. One example is whether there is a preference in the East for taking drugs over other interventions such as hospitalization. Some investigators, for example, suggest that an outpatient visit is more likely to result in a prescription in the five new States than in the former FRG. Another

example is a tendency to prescribe smaller size packages; one report claims that at the start of reunification, the average prescription had 30 pills in the West but only 20 pills in the East (Bundesvereinigung Deutscher Apotheker-Verbände, 1991). A rapid rise to larger package sizes in the East could explain some of the rapid rise in costs.

Another factor relates to the gap between the volume dispensed and the volume actually consumed. In one study from the AOK in Essen, for example, a prototype drug recycling project showed that more than one-third of the returned packages were unopened; in another one-third, the majority of the pills remained. The German practice of prescribing fixed package sizes rather than specific pill counts, as in the United States, might contribute to this phenomenon, as might the practice before 1993 of making both small and large packages the same out-of-pocket cost to the patient. In any event, it has been estimated that more than one-third of all pills sold are never consumed. It has not been shown whether East and West Germans have a similar propensity to build collections of untaken drugs.

Drug Choice Factors

Since it is widely presumed that consumption measured in monetary terms is rising faster than consumption in terms of tablet count (Schwabe and Paffrath, 1992), the question of what types of drugs are being prescribed is also worth further examination. One example might be the effectiveness (and cost effectiveness) of drugs used in the East and West, because suboptimal utilization in either direction could increase costs. On the one hand is the overuse of new, expensive drugs; doctors in the East might be switching to newly available and higher cost drugs

without clinical imperative (e.g., using newer generation cephalosporins rather than less expensive simple antibiotics for basic infections). On the other hand, underuse of new, expensive drugs also costs money in some cases. For example, long-term treatment with a simple antibiotic may be less expensive per dose but more expensive per illness when a more advanced drug could succeed with fewer doses. A related factor is the relative costs of the most popular drugs in the East and West. For example, the leading over-the-counter headache remedy in the former FRG was aspirin, costing 5.30 DM for 20 tablets, while in the former GDR the leading headache remedy was Analgin, which in 1993 costs under 2 Marks for 20 tablets. Without a proven difference in efficacy, the cost difference might argue against a mass exodus to the western product. Of course, where the less expensive GDR product proves ineffective, any continued use is economically inefficient. In any case, former GDR products are generally losing market share rapidly in the post-reunification East, regardless of any showing of efficacy. The extent to which expensive (Western) products are replacing less expensive (Eastern) products and the clinical wisdom of such a switch seem worthy of further study.

Not only is the amount of drug spending noteworthy, but also the categories of medications being consumed. Analysis of patterns of drug consumption in the old and new States has shown significant differences among classes of drugs (Schwabe and Paffrath, 1992). For example, in the new States, tranquilizer use has dropped to only 59.7 percent of the older States' use. These differences suggest cultural and environmental factors at stake beyond the simplistic question of overall consumption. It has been suggested that rational use reforms based

on an analysis of consumption mix could bring a 23.82 percent drop in sickness fund drug outlays through changes in structure, volume, price, and exclusions (Schönbach, 1992).

Cultural and Economic Factors

A much simpler set of explanations, but perhaps just as important in the analysis, could be based on cultural or economic constraints. One possible culprit here is the size of required patient copayments. During 1991 and 1992, drug copayment requirements were not equal in East and West and might have played a role in patient attitudes toward drug purchases. Even now that most copayment rules have been harmonized, the higher levels of unemployment and poverty in the East exempt a higher proportion of the population from copayment requirements: the Ministry of Health estimates that only 60 percent of prescriptions in the East include any patient copayment compared to 75 percent in the West. Further, copayments for prescription drugs rose substantially in 1993 and now apply to all prescribed products—in 1990, 64.5 percent of prescriptions had no patient copayment requirement (Beske et al., 1993). It may be useful to examine whether even small drug copayments play a positive role in curtailing excess prescription drug use in Germany.¹⁴

Other social and cultural factors worthy of further study might include analysis of whether the retired, the unemployed, and those in vocational retraining are any more likely to seek medical attention than those

¹⁴ While German health care reformers minimize the impact of prescription drug copayments on overall consumption, most research in the field appears to be based on American populations where high copayments and deductibles are considered normal. Whether the German patient, accustomed to more generous coverage, follows this model does not appear to be fully understood.

working full-time in traditional jobs, and whether social pressures in the East discourage individuals from receiving medical attention compared with individuals in the West showing similar symptoms.¹⁵

Demographic Factors

Despite all the intriguing possibilities laid out tantalizingly to encourage further research, it may be that the rapid rise in the East's drug costs can be understood through simple demographic factors alone. For example, it may be that residents of the former East are simply sicker, perhaps due to severity of chronic conditions or shortfalls in prior medical care. Sociological traits including employment or economic status could also be implicated. In the AOK, the demographics appear to be similar for East and West Berlin, when measured by fundamental markers, such as percentage of enrollees 65 years of age or over, yet analysis by other measures might show whether other demographic factors are at work.

SUMMARY

The first 2 years of a reunified German health care system have brought great changes in the health care costs of the former East Germany. One of these changes is a rapid rise in pharmaceutical consumption—East Berlin, for example, took less than 2 years to greatly surpass West Berlin in per capita prescription expenditures. These 2 years of consolidated health insurance operations have answered the riddle posed at the beginning of reunification—equivalent health care benefits led quickly

¹⁵ One survey, for example, shows that if faced with minor ailments such as the flu, only 40 percent of those in the former East would want to see a doctor, compared with 76 percent in the former West. The incidence rate of persons complaining of these ailments, however, seems slightly higher in the East according to recent surveys.

to pharmaceutical consumption that not only met but indeed exceeded consumption in the former West.

General explanations for these changes in drug spending patterns might relate to a number of factors and deserve further study. Further study of these possible explanations seems worthwhile for two reasons. First, because the increase in pharmaceutical consumption was so rapid, the lessons may prove important to other national health care systems trying to contain pharmaceutical costs in a rational manner. The second reason supporting further study is as a model of an expanding coverage population: very few other recent models are available for such a substantial and nationwide increase in enrollment.

ACKNOWLEDGMENTS

Special thanks are due to Dr. Lankers and Mr. Selke of the Science Institute of Local Sickness Funds, Dr. Sullivan of the Medical-Pharmacological Research Service, Mr. Manthey and Mr. Kotek of the AOK-Berlin, Dr. Oertl of the National Statistical Office, Berlin Branch, and the faculty of the Public Health Program at the Technical University of Berlin for all their assistance and comments.

REFERENCES

- Allgemeinde Ortskrankenkasse Berlin (Berlin General Community Sickness Fund): *Annual Reports 1989-92*. Berlin, 1989-92.
- Allgemeinde Ortskrankenkasse Berlin (Berlin General Community Sickness Fund): Unpublished data, 1989-92.
- Beske, F. et al.: *Das Gesundheitswesen in Deutschland: Strukturen-Leistungen-Weiterentwicklung*. Deutscher Ärzte-Verlag, 1993.
- Bundesministerium für Arbeit und Sozial (German Federal Ministry for Labor and Social Services): *Ratgeber A-Z für die Bevölkerung der neuen Bundesländer*. 1992.

Bundesministerium für Gesundheit (German Federal Health Ministry): *Gesundheit für Alle: Das Gesundheitswesen in der Bundesrepublik Deutschland*. 1992.

Bundesvereinigung Deutscher Apotheker-Verbände (National Society of German Pharmacists): *Apotheken Report 39: Die Wirtschaftliche Situation der Apotheken 1990 in den Alten und Neuen Bundesländern*. 1991.

Schönbach, K.-H.: Die Steuerung des Arzneimittelbudgets als Unternehmenspolitische Aufgabe. *Arbeit und Sozialpolitik*. P.43, September/October 1992.

Schwabe, U. and Paffrath, D. (eds.): *Arzneiverordnungs-Report 1992: Aktuelle Daten, Kosten, Trends, und Kommentare*. Gustav Fischer Verlag, 1992.

Statistisches Bundesamt (National Statistics Service): *Statistisches Jahrbuch 1992 für die Bundesrepublik Deutschland*. Metzler Poeschel Verlag, 1992.

Statistisches Bundesamt (National Statistics Service): *Das Gesundheitswesen 1990: Jahresgesundheitsbericht 1989 für das Gebiet der Ehemaligen DDR*. Berlin: Ärztebuch Verlag Berlin, 1990.

Statistisches Bundesamt (National Statistics Service): Unpublished data, 1980-91.

Reprint Requests: Eric Katz, Senior Policy Analyst, U.S. Public Health Service, 740-G Humphrey Building (OHPE), Washington, DC 20201.