Special Article

COMPLIANCE AMONG PHARMACIES IN CALIFORNIA WITH A PRESCRIPTION-DRUG DISCOUNT PROGRAM FOR MEDICARE BENEFICIARIES

JOY H. LEWIS, D.O., MATTHIAS SCHONLAU, PH.D., JORGE A. MUÑOZ, M.S., M.PHIL., STEVEN M. ASCH, M.D., M.P.H., MAYDE R. ROSEN, R.N., B.S.N., HANNAH YANG, B.S.P.H., AND JOSÉ J. ESCARCE, M.D., PH.D.

ABSTRACT

Background Several states have developed prescription-drug discount programs for Medicare beneficiaries. In California, Senate Bill 393, enacted in 1999, requires pharmacies participating in the state Medicaid program (Medi-Cal) to charge customers who present a Medicare card amounts based on Medi-Cal rates. Because Medicare beneficiaries may not be accustomed to presenting their Medicare cards at pharmacies, we assessed the compliance of pharmacies with Senate Bill 393.

Methods Fifteen Medicare beneficiaries who received special training and acted as "standardized patients" visited a random sample of pharmacies in the San Francisco Bay area and Los Angeles County in April and May 2001. According to a script, they asked for the prices of three commonly prescribed drugs: rofecoxib, sertraline, and atorvastatin. The script enabled us to determine whether and when, during their interactions with pharmacists or salespeople, the discounts specified in Senate Bill 393 were offered. Pharmacies at which the appropriate discounts were offered were considered compliant.

Results The patients completed visits to 494 pharmacies. Seventy-five percent of the pharmacies complied with the prescription-drug discount program; at only 45 percent, however, was the discount offered before it was specifically requested. The discount was offered at 91 percent of pharmacies that were part of a chain, as compared with 58 percent of independent pharmacies (P<0.001). Compliance was higher in the San Francisco Bay area than in Los Angeles County (84 percent vs. 72 percent, P=0.004) and was higher in high-income than low-income neighborhoods (81 percent vs. 69 percent, P=0.002). A Medicare beneficiary taking all three drugs would have saved an average of \$55.70 per month as compared with retail prices (a savings of 20 percent).

Conclusions Discounts required under California's prescription-drug discount program for Medicare beneficiaries offer substantial savings. Many patients, however, especially those who use independent pharmacies or who live in low-income neighborhoods, may not receive the discounts. (N Engl J Med 2002;346: 830-5.)

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XPENDITURES for drugs have grown in parallel with their increasing importance in treating and preventing disease.¹ In 1998, prescription-drug spending in the United States was estimated to be \$91 billion, more than twice the amount spent in 1990.² Elderly Medicare beneficiaries are particularly vulnerable to the high costs of prescription drugs and to the adverse health consequences of missed drug treatments. Thirty-five percent of people over the age of 65 years have three or more chronic conditions; people over 65 account for 34 percent of pharmaceutical expenditures³ but make up 13 percent of the population.⁴ However, one third of Medicare beneficiaries have no prescriptiondrug coverage,^{2,5} and many of those who do have intermittent coverage.⁶ Medicare beneficiaries who lack prescription-drug coverage, especially those with low incomes, use fewer drugs and have higher out-of-pocket costs than covered beneficiaries.7-9

The federal government is examining ways to make prescription drugs more affordable for Medicare beneficiaries. However, many states have already developed pharmaceutical-assistance programs for persons over the age of 65. Four states (California, Florida, Maine, and Vermont¹⁰) have passed laws to provide Medicare beneficiaries with discounted prescription-drug prices based on prices in the Medicaid program. Eighteen states introduced bills in 2001 that would establish similar policies.¹¹

California Senate Bill 393 was enacted in 1999. This law, which applies to all participating pharmacies in the California Medicaid program (Medi-Cal), states that "the pharmacy, upon presentation of a valid prescription for the patient and the patient's Medicare card, shall charge Medicare beneficiaries a price that does not exceed the Medi-Cal reimbursement rate for prescription medicines, and an amount, as set by the California Department of Health Services, to cover electronic transmission charges."¹² The California De-

From RAND Health, Santa Monica, Calif. (J.H.L., M.S., J.A.M., S.M.A., M.R.R., H.Y., J.J.E.); and the Greater Los Angeles Veterans Affairs Health Care System, Los Angeles (J.H.L., S.M.A.). Address reprint requests to Dr. Lewis at RAND, 1700 Main St., Santa Monica, CA 90407-2138, or at joys@rand.org.

partment of Health Services sent three notices and a Medi-Cal bulletin alerting pharmacies to the enactment of this law, and the sponsoring legislator conducted press conferences about it.

However, the law may not be fully achieving its goal. Because Medicare itself does not cover the cost of prescription drugs, Medicare beneficiaries may be unaccustomed to presenting Medicare cards to pharmacies. The new law included no provisions for educating beneficiaries or monitoring the compliance of pharmacies. This study assessed the compliance of pharmacies with California Senate Bill 393.

METHODS

We trained a group of volunteers, all Medicare beneficiaries, to represent "standardized patients"^{13,14} and visit a sample of pharmacies participating in the Medi-Cal program in April and May 2001. As standardized patients, they would follow a consistent script that enabled us to determine whether and when, during their interactions with pharmacists or salespeople, the discounts required by Senate Bill 393 were offered. The study protocol was approved by the RAND institutional review board.

Pharmacies

We obtained a list of all the licensed pharmacies in Los Angeles County and in the San Francisco Bay area counties of Alameda, Contra Costa, Marin, San Francisco, Sonoma, and San Mateo from the Board of Pharmacy of the California Department of Consumer Affairs. We contacted each pharmacy by telephone to determine whether it was independent or part of a chain (defined as three or more outlets with common ownership) and whether it participated in the Medi-Cal program. We used the 2001 Claritas Demographic Update¹⁵ as a source of data on per capita income and population data according to age, sex, race, and Hispanic or non-Hispanic ethnic background for calendar year 2000 within each ZIP Code in the study counties.

Of the 1689 retail pharmacies that participated in Medi-Cal, we excluded 42 that were located in remote areas of Los Angeles County (those in ZIP Codes 90265, 91350, 91354, 91355, 91381, 91384, 93534, 93535, 93536, 93550, 93551, and 93552) and grouped the remaining 1647 pharmacies into eight strata according to region (Los Angeles County vs. Bay area), type of store (chain vs. independent), and income level (high vs. low) within the neighborhood of the pharmacy, defined according to ZIP Code. We used the population-weighted median income in all the ZIP Codes in the study counties (\$21,989) as a cutoff to categorize income levels as high or low.

We drew a stratified, random sample of 500 of the 1647 pharmacies, allocated among the eight strata in proportion to the size of each stratum. The sample size was chosen to provide 90 percent statistical power to detect a 15 percent difference in compliance with Senate Bill 393 between two equal groups of pharmacies.

Prescription Drugs

We selected three brand-name prescription drugs used to treat chronic conditions that frequently affect older persons. The drugs, and their legislated Medi-Cal prices for a 30-day supply, were rofecoxib (Vioxx), \$64.55; sertraline (Zoloft), \$63.11; and atorvastatin (Lipitor), \$90.79.¹⁶⁻¹⁸ They are among the 50 drugs most requested by Medicare beneficiaries, according to pharmacy-price inquiries since Senate Bill 393 was enacted.¹²

Collection of Data

Forty-one Medicare beneficiaries with acting experience underwent a four-hour training session during which they learned a script to use when visiting pharmacies and learned to complete an encounter form after each visit. The scripted encounter was designed to ascertain whether the legally required discounts were offered when older customers initially asked for prices, when they asked for a "senior discount," when they requested a "Medicare discount," or not at all. When speaking to the pharmacist or salesperson at each pharmacy, the patient was to begin by saying, "Hi. I left my prescription at home. I just called home and found out what I need. While I'm here, I would like to know how much my medications would cost. Can you help me?" The patient then presented a list of the three study drugs and their doses. After obtaining the prices, the patients asked whether the pharmacy offered a "senior discount" and, if it did, what the discounted prices would be. Finally, the patient presented a Medicare card and asked for a "Medicare discount."

Answers to common questions that might be asked of patients at a pharmacy were standardized. For example, in response to the question, "Do you have insurance?" the patient was to respond, "Yes, but it doesn't cover my pills." If pressed for more information or asked directly about Medicare, he or she would respond, "I just have Medicare" and show a Medicare card. The patients were also trained to look for printed signs that indicated the availability of "senior" or "Medicare" discounts.

The training sessions concluded with a test in which two of the investigators acted out five different scenarios. Fifteen of the volunteers (11 men and 4 women) who had previously demonstrated that they knew the script and its variants and who accurately filled out the encounter forms for all five of these scenarios were hired to act as patients and were assigned a set of pharmacies. Once the patients were in the field, the principal investigator reviewed the encounter forms daily for purposes of quality control.

Statistical Analysis

The principal investigator and one additional investigator reviewed all the encounter forms to assess whether and when each pharmacy had offered the required discount. Pharmacies were considered to have complied with Senate Bill 393 if the pharmacist had quoted the Medi-Cal prices for the study drugs or if he or she had stated that a Medicare discount was offered but could not provide prices without "checking the computer" (i.e., checking the state's data base of Medi-Cal prices, a process that incurred a charge). Pharmacies were also considered to have complied with the law if at any point during the interaction the pharmacist quoted prices lower than the Medi-Cal prices. Conversely, if the pharmacist claimed that a Medicare discount was offered but quoted prices higher than the Medi-Cal prices, the pharmacy was considered noncompliant. The principal investigator and the additional investigator agreed on all but four of the encounter forms, which were then adjudicated by the entire project team.

We used chi-square tests¹⁹ to assess the statistical significance of differences in compliance between pharmacies in Los Angeles County and those in the Bay area, pharmacies that were part of a chain and those that were independent, and pharmacies in highincome and low-income neighborhoods. We used multiple logisticregression analysis²⁰ to assess the independent effects of region, type of pharmacy, and characteristics of the population in the neighborhood on compliance with the law. Adjusted odds ratios obtained from the logistic-regression analysis were converted to relative risks.²¹ A P value of less than 0.05 (by two-tailed testing) was considered to indicate statistical significance.²²

RESULTS

The distribution of the 500 study pharmacies among the eight sampling strata is shown in Table 1. Of these 500 pharmacies, 3 were closed at the time of the visit, and 2 did not have the study drugs; one visit could not be completed. Thus, the 15 patients completed visits to 494 pharmacies. Table 1 also shows that overall, independent pharmacies were disproportionately located in low-income neighborhoods.

Compliance of Pharmacies

Of the 494 study pharmacies to which visits were completed, 372 (75 percent) offered the required discount. Of the pharmacists at these stores, 22 quoted Medi-Cal prices, 5 quoted prices lower than Medi-Cal prices, and 345 stated that the discounted prices were available but did not provide them, stating that they could not check the prices in the computer without a prescription or sale.

Of the 122 pharmacies where the discount was not offered, pharmacists at 86 stated that there was no Medicare discount; 24 said that their prices reflected the Medicare discount, when in fact their prices were higher than Medi-Cal prices; 8 said that their prices were lower than the Medicare-discount prices, when in fact their prices were higher; and 4 would not quote any prices. Only 71 of the 494 pharmacies (14 percent) had signs indicating the availability of a "senior" or "Medicare" discount, and at only 67 of these stores was the discount offered.

As Table 2 shows, compliance with Senate Bill 393 was higher in the San Francisco Bay area than in Los Angeles County (84 percent vs. 72 percent, P=0.004); higher among pharmacies that were part of a chain than among independent pharmacies (91 percent vs. 58 percent, P<0.001); and higher among pharmacies located in high-income neighborhoods than pharmacies located in low-income neighborhoods (81 percent vs. 69 percent, P=0.002). At 11 of the noncompliant independent pharmacies, the pharmacist told the patient to go to a "big chain" store for discounts.

At only 45 percent of the pharmacies did pharmacists offer the mandated discount before being specifically asked about it. At these pharmacies the discount was offered either when the patient initially asked for prices (7 percent of the pharmacies) or when the patient asked for a senior discount (38 percent). At 30 percent of the pharmacies the discount was offered only after the patient presented a Medicare card and specifically asked for a Medicare discount.

As Figure 1 illustrates, pharmacists at 63 percent of the pharmacies in the San Francisco Bay area, as compared with 36 percent of the pharmacies in Los Angeles County, offered the Medicare discount before being specifically asked about it (P < 0.001). Most strikingly, pharmacists at 67 percent of chain-store pharmacies actively offered the Medicare discount before being asked, as compared with pharmacists at 21 percent of independent pharmacies (P < 0.001). Finally, the Medicare discount was actively offered at 52 percent of the pharmacies in high-income neighbor-

TABLE 1. STUDY SAMPLE OF 500 PHARMACIES.

REGION AND TYPE OF PHARMACY	Income Level of Neighborhood*	
	HIGH	LOW
	no. of pha	armacies
Los Angeles County Chain Independent San Francisco Bay area	73 78	76 122
Chain Independent	92 29	19 11

*We defined neighborhoods according to ZIP Codes and income level using a cutoff value of \$21,989 (the population-weighted median income in the study regions).

TABLE 2. COMPLIANCE OF 494 PHARMACIES WITH SENATE BILL
393, According to Geographic Region, Type of Pharmacy,
and Income Level of the Neighborhood.

VARIABLE	No. of Pharmacies	Medicare Discount Offered	P Value*
		no. (%)	
Geographic region			0.004
Los Angeles County	344	246 (72)	
San Francisco Bay area	150	126 (84)	
Type of pharmacy			< 0.001
Chain	257	235 (91)	
Independent	237	137 (58)	
Income level of neighborhood [†]			0.002
High	270	218 (81)	
Low	224	154 (69)	

*P values were calculated by the chi-square test.

†We defined neighborhoods according to ZIP Codes and income level using a cutoff value of \$21,989 (the population-weighted median income in the study regions).

hoods as compared with 36 percent of those in low-income neighborhoods (P < 0.001).

According to multiple logistic-regression analysis, the type of pharmacy (chain or independent) was the only significant independent predictor of compliance with Senate Bill 393. Pharmacists at chain pharmacies were 1.58 times (95 percent confidence interval, 1.49 to 1.64) as likely as those at independent pharmacies to offer the discount (P<0.001). The geographic region (P=0.95), income level of the neighborhood (P=0.06), and proportions of blacks (P= 0.39), Hispanics (P=0.57), and Asians or Pacific Islanders (P=0.71) in the neighborhood were not associated with compliance or noncompliance.



Figure 1. Pharmacies' Compliance with Senate Bill 393 during Standardized Patients' Visits, According to Geographic Region, Type of Pharmacy, and Income Level of the Neighborhood.

The bars depict the percentages of pharmacies at which the required discount was offered when trained volunteers acting as patients initially asked for prices, asked for a "senior discount," or (finally) asked for a "Medicare discount," according to a script, or at which the discount was not offered at all. Compliance before the Medicare discount was specifically requested was higher among pharmacies in the San Francisco Bay area than among those in Los Angeles County (P<0.001 by the chi-square test), higher among chain-store pharmacies than among independent pharmacies (P<0.001), and higher among pharmacies in high-income neighborhoods than among those in low-income neighborhoods (P<0.001). Neighborhoods were defined according to ZIP Codes, and income level was defined according to a cutoff value of \$21,989 (the population-weighted median income in the study regions).

To test for differences among the patients in the responses they elicited while speaking with pharmacists and to test for possible confounding, we repeated the logistic-regression analysis after adding indicator variables for the identity of the actors representing standardized patients. The relative risk of compliance among chain pharmacies as compared with independent pharmacies remained unchanged, and the indicator variables were neither singly nor jointly associated with compliance or noncompliance (P=0.61 for the test of joint association).

Potential Savings to Medicare Beneficiaries

We obtained retail prices for the three study drugs at 459 pharmacies (Table 3). Under Senate Bill 393, Medicare beneficiaries who take all three drugs would save an average of \$55.70 per month as compared with the mean retail prices (a savings of 20 percent). The total cost of a 30-day prescription for all three drugs at Medi-Cal prices was \$218.45.

DISCUSSION

We found that the prescription-drug discounts required under California Senate Bill 393 offer substantial potential savings to Medicare beneficiaries but that many beneficiaries may not receive these discounts. Pharmacists at one fourth of the pharmacies in our study failed to offer the mandated discounts, even after patients explicitly requested them.

The independent pharmacies in our study were much less likely than chain-store pharmacies to comply with Senate Bill 393. Independent pharmacists may be unaware of the law; however, multiple notifications about it were sent to all pharmacies by the California Department of Health Services, and at 11 independent pharmacies patients were referred to "big chain" stores - factors that suggest these pharmacists' awareness of the law. Alternatively, independent pharmacies, which do not benefit from economies of scale or from the sale of nonpharmaceutical merchandise, may find it more difficult than chain-store pharmacies to comply with Senate Bill 393. Because independent pharmacies are disproportionately located in low-income neighborhoods, the potential savings from discounts under Senate Bill 393 may be least likely to reach the people who need them the most.

At only 45 percent of the study pharmacies was the Medicare discount offered when patients initially re-

 TABLE 3. RETAIL PRICES OF A 30-DAY SUPPLY OF THE THREE

 STUDY DRUGS, AS COMPARED WITH THE MEDI-CAL PRICES,

 AT 459 PHARMACIES.*

VALUE	Rofecoxib	Sertraline	Atorvastatin	All Three Drugs
	dollars			
Mean	88.24	82.45	103.46	274.15
25th percentile	81.00	76.49	95.89	253.85
50th percentile	88.00	81.69	101.99	272.60
75th percentile	94.69	87.69	110.03	289.34
Medi-Cal	64.55	63.11	90.79	218.45

*Data shown reflect prices for a 30-day supply of the following doses: 25 mg of rofecoxib per day, 50 mg of sertraline per day, and 20 mg of atorvastatin per day.

quested prices or when they asked for a senior discount; at the remaining compliant pharmacies the required discount was not offered until it was specifically requested. Few pharmacies had signs advertising senior or Medicare discounts. These findings indicate that, in most cases, Medicare beneficiaries needed to know about Senate Bill 393 in order to take advantage of it. As was true with respect to overall compliance, there was a large discrepancy between chain-store and independent pharmacies with respect to pharmacists' readiness to offer the discounts.

Our study has several limitations. The patients did not present prescriptions at the pharmacies they visited. However, Title 16 of the California Code of Regulations²³ and California Business and Professions Code 4122²⁴ stipulate that pharmacies must provide prescription-drug prices when asked, whether or not the customer presents a prescription. The lack of a prescription may have suggested to the salesperson or pharmacist that the patient was shopping for the lowest prices, but that circumstance would probably increase the likelihood of the pharmacist's offering a discount. In addition, our data were collected from the two major metropolitan areas in California; pharmacies in other areas of the state may have different patterns of compliance with the bill.

California's experience with a prescription-drug discount program for Medicare beneficiaries has implications for the design of similar state programs and federal programs. Most important, such programs must include procedures to educate beneficiaries — for example, by mailing information directly to them and by requiring pharmacies to post signs advertising the discounts. Our data suggest that Medicare beneficiaries in California who are aware of Senate Bill 393 are much more likely to receive the legally mandated discounts than those who are not aware of it. Nonetheless, of the 18 states that introduced bills in 2001 providing prescription-drug discounts for Medicare beneficiaries,¹¹ only 8 states call for an outreach plan to educate consumers about the discounts. Requiring Medicare beneficiaries to enroll in the discount program and providing beneficiaries with special discount cards to present at pharmacies would probably reinforce their awareness of the program. Eight of the states that introduced bills establishing prescription-drug discounts in 2001 would issue such a discount card.

Finally, states should also consider developing procedures to monitor the compliance of pharmacies with prescription-drug discount laws. Many pharmacies in our study failed to comply with Senate Bill 393, even when patients specifically requested a Medicare discount. However, of the 18 states that introduced prescription-drug discount bills in 2001, only 2 required monitoring of compliance. Within political constraints, policy makers may wish to focus monitoring efforts on independent pharmacies.

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