Assessing potential prescription reimbursement changes: Estimated acquisition costs in Wisconsin

by David H. Kreling

Potential impacts from two methods of changing prescription drug ingredient reimbursement in the Wisconsin Medicaid program were estimated. Current reimbursement amounts were compared with those resulting from either direct prices for eight manufacturers' products and average wholesale price less 10.5 percent for other products or wholesaler cost plus 5.01 percent for all products. The resulting overall average ingredient cost reimbursement reductions were 6.64 percent ($0.56 per prescription) and 6.94 percent ($0.59 per prescription) for the two methods, respectively. The results should be viewed from the perspective of both program savings and reduced pharmacists' revenues.

Introduction

Prescription drug coverage is an optional component of State Medicaid programs. In all but two States, Wyoming and Alaska, prescription drugs are included as a separate covered service. Generally, coverage extends to substances prescribed by a physician for the cure, mitigation, or prevention of disease or for health maintenance. This coverage applies both to recipients residing in nursing homes and to ambulatory recipients who obtain prescriptions from community pharmacy outlets pursuant to prescription orders from practitioners.

The upper limit of payment to pharmacist providers is defined as either the prescription ingredient cost plus a reasonable dispensing fee or the provider's usual and customary charge to the general public, whichever is lower. Federal regulations stipulate that the ingredient cost of the product dispensed be reimbursed at the Federal maximum allowable cost (MAC), if applicable, or an estimated acquisition cost (EAC) (*Code of Federal Regulations*, 1987). Dispensing fees are determined and set by individual States.

A MAC is established as the maximum amount payable for a multisource drug and is set to represent the lowest unit price at which the drug is widely and consistently available for purchase by pharmacists. MAC's have been established for a number of commonly dispensed multisource drugs. For less popular multisource and single-source drug products, an EAC is established for each individual product. It is defined as the State's best estimate of the price providers generally pay for the product. The average wholesale price (AWP) from standard pricing references such as *Blue Book* (Lee, 1986) or *Red Book* (Cardinale, 1986) has been used as the EAC for many products covered by State Medicaid programs (National Pharmaceutical Council, 1986). A similar reimbursement structure is used in many private third-party prescription programs (Abood, 1984; PAID Prescriptions, Inc., 1987).

Although there is considerable evidence that pharmacists' actual purchase costs usually differ from AWP (Task Force on Prescription Drugs, 1969; Office of the Inspector General, 1983; Norwood and Lipson, 1978), AWP generally has been used as the reimbursement amount for the prescription ingredient (drug) cost component of Medicaid and private third-party drug coverage plans. AWP also has been established as the ingredient cost reimbursement amount under the drug coverage provisions of the Medicare Catastrophic Coverage Act of 1988 revisions for Part B of Medicare. Because it is apparent that AWP's are not the best estimates of pharmacists' purchase costs, there has been interest in changing reimbursement formulas to improve the accuracy of prescription ingredient cost reimbursement. Several different policies have been proposed, and some have been adopted in various private and public prescription programs.

Proposed estimated acquisition cost changes

In 1985, the Health Care Financing Administration (HCFA) proposed that State officials adopt new methods of setting EAC's for their Medicaid programs. These new methods incorporated the types of pricing mechanisms and price reference points used by pharmaceutical manufacturers and drug wholesalers in pricing their products for sale to pharmacists. Three price reference points were included: AWP, direct price, and wholesaler cost. The relationships of these reference points are shown in Figure 1.

Generally, AWP refers to the price listed for a given product in a standard pricing reference such as *Red Book* or *Blue Book*. As such, it can be viewed as the manufacturer's suggested list price for a wholesaler to use when selling that drug product to pharmacists. Alternatively, an AWP for a product can be determined by averaging the list prices at which wholesalers or a group of wholesalers offer the product for sale to pharmacists. This approach will be

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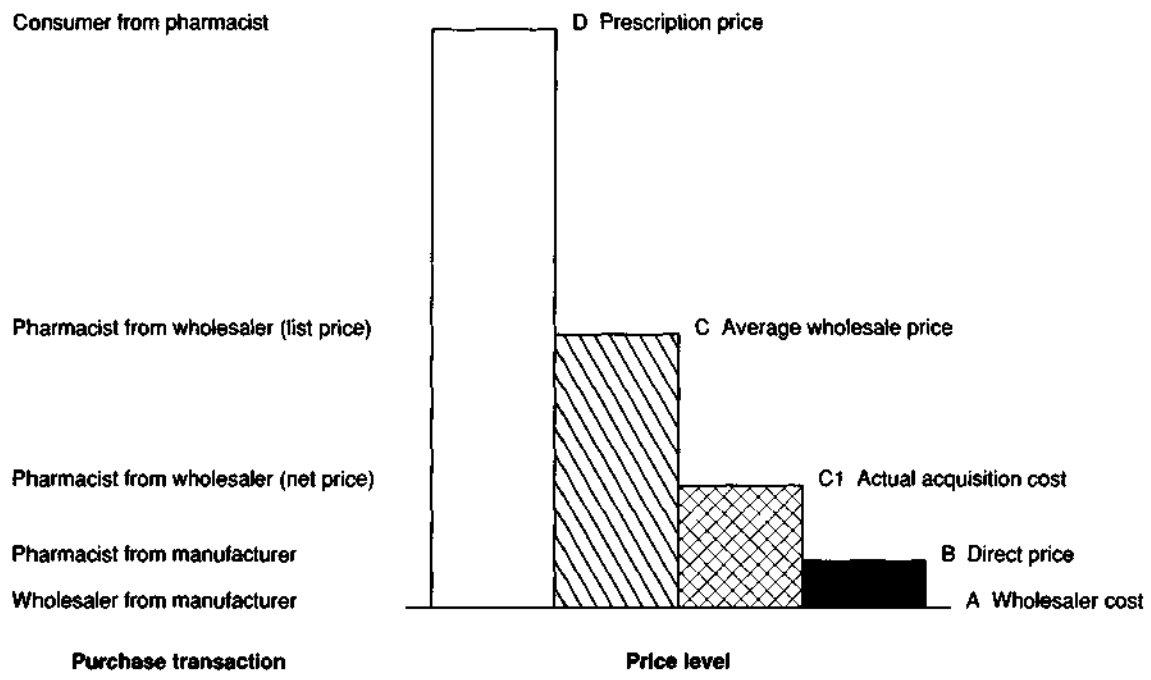
Figure 1

Purchase transactions and price levels in the channel of distribution for drug products



NOTES: A≤B<C1<C<D. Proposed reimbursement—Option 1 is C – 10.5 percent and B (if applicable). Option 2 is A + 5.01 percent. Bars are not drawn to scale.

SOURCE: Sonderegger Research Center, University of Wisconsin—Madison School of Pharmacy.

used for Medicare reimbursement under the Medicare Catastrophic Coverage Act of 1988.

The direct price is the price at which a manufacturer with a direct-to-retailer distribution system will sell a product directly to a pharmacist, bypassing the wholesaler in the channel of distribution. Direct prices are lower than AWP's, and, for some manufacturers, they are the same prices offered to other direct purchasers (e.g., wholesalers and chain warehouses). Most manufacturers now distribute their products only through wholesalers. However, for the handful of manufacturers that continue the tradition of distributing both through wholesalers and direct to pharmacies, the standard pricing references list both direct prices and AWP's.

Wholesaler cost is the price a wholesaler pays for products that, in turn, will be resold to pharmacists. It is the lowest, base-level cost in the channel of distribution for pharmaceuticals. Wholesalers establish the prices of products they sell to pharmacists (retailers) either by discounting the suggested list price (the product's AWP) by a percentage or by adding a markup percentage to their cost (the wholesaler cost) to provide a desired gross profit margin. Conceptually, these pricing methods used by wholesalers can be considered a top-down, list-less approach or a bottom-up, cost-plus approach. The discounting or cost-plus percent offered by a wholesaler to a pharmacist varies slightly depending on the volume of purchases made by the pharmacist.

The approaches for setting estimated acquisition costs proposed by HCFA were intended to mimic the purchase patterns and prices paid for products by phrmacists as best estimates of pharmacist acquisition costs. Consequently, two general approaches were proposed, a list-less, top-down approach and a bottom-up, cost-plus approach. The methods of determining reimbursement amounts proposed were:

- Option 1: Direct prices for products from eight manufacturers (Abbott, Lederle, Merck, Parke-Davis, Pfizer/Roerig, Squibb, Upjohn, Wyeth) and AWP less 10.5 percent for other products.
- Option 2: Wholesaler cost plus 5.01 percent for all products.

The pricing parameters for these two methods were established using information gathered by Medicaid officials in several States and various HCFA regional offices. These officials estimated that the two methods would render equivalent program savings.[1] In both

[1]The proposed methods were distilled from acquisition cost study presentations by the Atlanta and Dallas HCFA regional office staffs. Formal reports describing how the two estimating methods were derived were requested from the Chicago HCFA regional office but, if existing, were not made available.

cases, Federal MAC limits would be continued on drugs with existing MAC's.

Subsequent to the proposal, a lawsuit was filed by a consortium of pharmacy associations in which it was charged that HCFA failed to follow proper administrative procedures in recommending these methods for setting EAC's (*Weekly Pharmacy Reports*, 1985a, 1985b; *Drug Topics*, 1985). As a result, the proposal was retracted, but State officials were encouraged to develop their own best estimates of pharmacists' acquisition costs and implement means of setting EAC's that more closely matched these costs. In 1986, three different drug program reimbursement approaches were proposed by HCFA, with an emphasis on savings by stimulating the use of generic drugs and taking advantage of competitive market forces (*Federal Register*, 1986). More recently, HCFA released rules giving State officials latitude in determining mechanisms for prescription drug reimbursement but setting limits on aggregate amounts paid for drugs in the Medicaid program (*Federal Register*, 1987). Also, reimbursement for prescription drugs covered under the Medicare Catastrophic Coverage Act of 1988 will be similar in several aspects to current Medicaid reimbursement (U.S. Congress, 1988).

No specific recommendations for methods of setting EAC's were included in the three approaches proposed in 1986, the more recent rules, or the Medicare Catastrophic Coverage Act. (Ingredient cost reimbursement under the Medicare Catastrophic Coverage Act is set at AWP, without reference to estimated acquisition costs or their determination.) Therefore, the issue of improving methods for estimating ingredient costs likely will resurface. If the issue resurfaces and ingredient cost reimbursement changes are proposed, it will be useful to estimate the impact of such changes (that is, program savings or reduced pharmacist revenues). A number of gross approximations of savings have been made in the past. For example, the average percent difference between AWP and pharmacists' actual acquisition costs on a sample of products has been applied to total program expenditures to extrapolate potential savings from acquisition-based drug cost reimbursement for all products (Office of the Inspector General, 1974). Another approach has been to conduct pharmacy purchase invoice audits and estimate what program expenditures would have been if the resulting purchase costs had been used as payment for the products audited (Office of the Inspector General, 1983).

Unfortunately, in many of the previous studies, the estimated impacts were based on results for small samples of products included in the studies. The accuracy of estimated impacts depends on whether the products studied adequately represent the mix of products dispensed to Medicaid recipients. Another alternative is to simulate the reimbursement amounts under the proposed methods for a large market basket sample of products and compare those data with current payment amounts. In this manner, the effects can be evaluated over a larger proportion of the products dispensed in pharmacies, yielding a better approximation of the overall effects. Such an approach is particularly important when reimbursement changes are not made unilaterally but differ depending on the product. When differential changes are made, the impact of the change is influenced by the market mix, and the market basket of products studied should reflect this mix correctly.

Another consideration when conducting an analysis of impact is the level of analysis used to make the estimated savings projections and extrapolations. A simple approach would be to determine the percent differences between old and new reimbursement amounts for each product and average these percents to give an overall average percent difference to extrapolate to all products or program expenditures. In a more complex analysis, the popularity of different products would be factored in, and the percent difference would be weighted by the number of claims when determining the overall percent savings or reductions. An even more specific analysis would incorporate the factor of product price or claim amount, along with popularity, to estimate the amount of savings for each product, determining aggregate savings amounts and percents with these amounts.

As the level of analysis changes from simple to complex, the efforts and data needs for conducting the analysis increase. The level of analysis could be as important as having a large, representative market basket. However, it might not be feasible to conduct the analysis at the highest, most accurate level.

Purpose of study

The overall objective of this study was to estimate the potential impact of changing ingredient cost reimbursement methods in the Wisconsin Medicaid program using a large market basket of products. The impacts of the two methods of determining reimbursement amounts proposed by HCFA in 1985 (that is, direct prices and AWP less 10.5 percent or wholesaler cost plus 5.01 percent) would be estimated and compared to evaluate whether similar outcomes occur with the two methods.

A secondary objective was to examine how the results are influenced by the level of complexity of the analysis used to estimate the impact. The intent was to show how the impact of reimbursement policy changes could be assessed. The technique of comparing amounts for a market basket of products could be used for evaluating similar policy changes in other public and private prescription drug programs.

Wisconsin Medicaid drug program

Currently, prescription ingredient cost reimbursement in the Wisconsin Medicaid drug program is typical of Medicaid programs nationwide. Multisource drugs listed under the Federal MAC program are reimbursed at Federal MAC levels. At

the time of analysis, State MAC's covered 42 other drugs. The Federal MAC program covered 27 drugs and a total of 54 specific drug entities (strength and dosage form combinations). The Wisconsin program covered 69 drugs and set MAC's for 283 drug entities, 141 of which were in unit-dose (nursing home) packaging. In September 1988, the State MAC list was expanded to include 558 entities.

Direct prices are paid for all non-MAC products from eight manufacturers (Abbott, Lederle, Merck, Parke-Davis, Pfizer/Roerig, Squibb, Upjohn, Wyeth), the manufacturers for which HCFA proposed direct prices. All remaining products covered under the State program are reimbursed at the AWP amount published in the *Blue Book* pricing reference. Expanding the Federal MAC program and incorporating direct prices as ingredient cost reimbursement amounts have helped the State restrain program costs. Adopting the proposed reimbursement changes should reduce expenditures, and the reimbursement amounts more accurately would reflect pharmacists' actual purchase costs for drug products.

In fiscal year 1986 (July 1986 through June 1987), prescription drug program payments to providers totaled $58.6 million. The average prescription claim amount paid was $12.69, and the average ingredient cost was estimated at $8.48. The dispensing fees paid were $3.68 and $5.67 for traditional and unit-dose prescriptions, respectively.

These program statistics were obtained from the pharmacy consultant with the Bureau of Health Care Financing, Wisconsin Department of Health and Social Services (Boushon, 1986-87). The State-allowed fee amount is subtracted from the total claim amount to estimate the cost of goods sold. This is a fee-primary method of estimating the cost of goods sold. Because some claims are paid at the usual and customary charge when that amount is lower than the State's EAC plus the dispensing fee, this method of estimating the average ingredient cost is conservative. There is no precise mechanism to calculate the real average ingredient cost amount paid by the program. These per-prescription amounts also are reported in *Pharmaceutical Benefits Under State Medical Assistance Programs* (National Pharmaceutical Council, 1986).

Methodology

The first step in the project was to develop a market basket of products for which reimbursement amounts could be estimated. A large market basket was desired that represented products commonly dispensed in pharmacies and also encompassed products dispensed to Medicaid recipients. Generally, the mix of products dispensed to Medicaid recipients is similar to the mix dispensed to the general public. However, some differences in product popularity and products used occur because of differences in patient characteristics and disease states between the general population and Medicaid recipients.

The primary source from which the market basket was developed was the Top 200 Drugs of 1984, published in *Pharmacy Times* (1985). This listing is based on a national prescription audit conducted by IMS America. The number of new and refill prescriptions dispensed in a national sample of approximately 2,000 community pharmacies are documented. The Top 200 is not a listing of products per se but rather a listing of drug brand names. There are several drug products for many of the Top 200 entries. For example, Inderal ranked second in the Top 200, but there are several individual strength and dosage form combinations (products) for Inderal. The ranking results from the aggregate popularity of these different Inderal products.

A secondary resource used in market basket development was a Medicaid Management Information System report from the Wisconsin Department of Health and Social Services (1985) detailing the number of prescription claims and amounts paid during fiscal year 1984 (July 1, 1984, through June 30, 1985). In this Medicaid report, specific product strengths and package sizes of Top 200 and non-Top 200 products for the sample were defined. The average prescription size of claims paid for individual drug products was also given.

Products were selected based on the number of claims paid by the Wisconsin Medicaid program during fiscal year 1984. Products with more than 1,500 claims were retained for the sample. The most popular package size was determined for each of these products. (Products in unit-dose packaging were excluded.) The criterion for inclusion in the market basket was that the product must be sufficiently popular in its most common package size. A total of 295 Top 200 and 188 non-Top 200 items were included in the market basket.[2]

To make the data base more current, a number of newly introduced generic versions of several brand-name drug products with recently expired patents were added. It was assumed that, although such products might not be highly popular, they would grow in market share, at least to some degree. A total of 15 such products was added to the product sample, bringing the total market basket count to 498 individual items.

The proportions of direct and MAC products in the market basket were compared with the occurrence of such products in the Top 200. This comparison is summarized in Table 1. The mix of direct and MAC products across quartiles of the Top 200 in the market basket was similar to the mixes in the Top 200 quartiles. The numbers of products in the top quartiles were larger than in the bottom quartiles because different strengths of some drugs had more than 1,500 claims reported in the Medicaid program statistics for the State.

After the market basket was complete, the analysis of costs and charges was undertaken. Existing allowable reimbursement amounts for the market

[2]A complete listing of the market basket products is available from the author.

Table 1

Number and percent of Top 200 and study market basket drug products, by type of Medicaid payment, product group, and quartile: Wisconsin

Product group and quartile	Top 200[1]						Market basket					
	Direct price		MAC[2]		Other		Direct price		MAC[2]		Other	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Top 200[1]	44	22.0	60	30.0	96	48.0	63	21.4	90	30.5	142	48.1
Quartile 1	12	24.0	16	32.0	22	44.0	26	22.4	36	31.0	54	46.6
Quartile 2	11	22.0	18	36.0	21	42.0	15	21.1	23	32.4	33	46.5
Quartile 3	10	20.0	15	30.0	25	50.0	13	22.0	17	28.8	29	49.2
Quartile 4	11	22.0	11	22.0	28	56.0	9	18.4	14	28.6	26	53.1
Market basket	—	—	—	—	—	—	92	18.5	167	33.5	239	48.0

[1]Products on list of Top 200 Drugs of 1984 (*Pharmacy Times*, 1985).
[2]Maximum allowable cost.

NOTES: A chi-square test to compare the frequencies of different types of Top 200 market basket products with the numbers expected from the Top 200 composition was significant at $p < .01$; $\chi^2 = 37.68$, with 6 degrees of freedom. Within the market basket, the frequencies of types of products did not differ across quartiles: $\chi^2 = 0.85$, with 6 degrees of freedom.

SOURCE: Sonderegger Research Center, University of Wisconsin—Madison School of Pharmacy.

basket items were obtained from the State of Wisconsin Drug Master List (Wisconsin Department of Health and Social Services, 1986). This list contains all products that are reimbursable by the State for prescriptions dispensed to recipients and the amounts allowed for reimbursement. Therefore, the Master List includes products that have Federal or State MAC's and their correponding MAC prices; direct prices for non-MAC products from the eight manufacturers mentioned previously; and *Blue Book* AWP's for all other products reimbursable by the State.

The reimbursement amounts for the first proposed method of setting EAC's, option 1 (AWP less 10.5 percent and direct prices), were calculated from the current allowable reimbursement amounts. Because the State already was reimbursing at direct prices for products from the firms proposed in option 1 (and existing MAC's would be continued), proposed reimbursement amounts needed to be derived only for products currently being reimbursed at AWP. All products with Master List reimbursement amounts equal to *Blue Book* AWP's were reduced by 10.5 percent.

A compilation of wholesaler costs was needed before the reimbursement amounts for the second proposed EAC method, option 2 (wholesaler cost plus 5.01 percent), could be calculated. At present, Wisconsin Medicaid officials do not gather these data. Such a listing was obtained from staff at the Texas Department of Human Services (1986). The Texas State government has implemented a cost-plus acquisition cost estimating mechanism based on wholesaler costs that is used for setting reimbursement, and the list of wholesaler costs is updated weekly. (Only a few States have implemented cost-plus methodologies for setting EAC's in their Medicaid programs.) The wholesaler costs in the Texas data base are taken from published manufacturer wholesale price lists, which are likely to be consistent from State to State. Therefore, Wisconsin Medicaid officials would be expected to find equivalent prices. This was informally confirmed by a cursory inspection of wholesaler cost for several products derived from invoices at a local Wisconsin pharmacy where goods were purchased from a wholesaler with cost-plus pricing terms.

The Wisconsin Master List and Texas wholesaler cost listing contained prices that were in effect for the second week of August 1986. For a few products, prices from previous or subsequent weeks' listings were obtained and matched to assure that both sets were uniform as to price updates. The MAC limits (both Federal and State) were carried through for both options because there was no indication in the proposals that changes would be made for the MAC products.

To investigate the impact of potential reimbursement changes, amounts reflecting the proposed changes were calculated for each market basket product and compared with current allowable reimbursement amounts shown on the Wisconsin Drug Master List. This gave a percent difference or reduction from the current reimbursement level that would apply for each product if the reimbursement changes were implemented. These percent reductions were used in analyses at three levels: unweighted, claims weighted, and claim amount and number weighted. For the first, unweighted analysis, the percent differences simply were averaged to determine the overall percent difference across all products. For the second analysis, the percent difference for each product was weighted by the number of claims for that product, and the differences were aggregated to give overall percent reductions. Generic products added to make the market basket more current were weighted with 1,500 claims because that was the minimum number of claims for inclusion in the market basket sample.

At the third level of analysis, the average claim size for each product was used to calculate an average claim cost. This average claim cost was reduced by the percent difference, and the resulting amount was weighted by the number of claims for the product.

These amounts, when aggregated, provided the amount of potential savings, which, in turn, was converted to a percent difference or savings.

The results for both proposed reimbursement methods were compared at each level of analysis to determine which method would have the greater impact. The overall percent reduction also was applied to an estimated average Medicaid prescription ingredient cost claim amount.

Results

Of the 498 items in the market basket sample, 167 (33.5 percent) had a State or Federal MAC, and 239 items (48.0 percent) were being reimbursed at AWP. A total of 149 products were available via direct purchase from manufacturers. However, 57 of these products also had MAC limits. Thus, 92 products (18.5 percent of the market basket) were being reimbursed at direct amounts.

As a simplifying assumption, claims submitted by pharmacists for payment at the usual and customary amount, and thus reimbursed at amounts below AWP plus the dispensing fee, were disregarded. The pharmacy consultant at the Wisconsin Department of Health and Social Services (Boushon, 1986-87) was not able to estimate the percent of claims paid at the usual and customary amount. No figures were available to partition the proportion of claims typically paid at direct, MAC, or AWP levels that instead were paid at usual and customary amounts.

Option 1

For option 1 (AWP less 10.5 percent), the average percent reductions for products that occurred from the three levels of analysis are summarized in Table 2. The simple, unweighted analysis resulted in the most conservative estimate of savings, 5.04 percent. The most complex analysis—claim amount and number weighted—resulted in the highest projected percent difference between current and proposed reimbursement amounts. As can be seen in comparisons across products from different Top 200 quartiles and the non-Top 200 group, the percent differences tend to increase as products become less popular. However, the increases were not consistent across quartiles, nor was any level of analysis consistently higher or lower among all product groups.

Because the proposed reimbursement changes would not affect MAC products, the analyses were repeated for non-MAC products only, thus concentrating the impact on the products most influenced by the proposed policy change. These results also are summarized in Table 2. The tendency for the differences to increase as products became less popular, although inconsistent, continued. Interestingly, the aggregate results were more similar for the non-MAC products than for all products combined. The average percents for the Top 200 overall and for non-MAC products overall varied by less than 0.15 percent across the levels of analysis.

Option 2

Option 2, wholesaler cost plus 5.01 percent, resulted in more variability among individual products in the percent differences between current reimbursement amounts and proposed amounts than option 1 did. This occurred because the relationship between wholesaler cost and list prices (AWP's) varies among

Table 2

Number of drug products, number of Medicaid claims, and average percent reductions from current reimbursement amount resulting from payment at average wholesale price less 10.5 percent, by level of analysis, product group, and quartile: Wisconsin

Product group and quartile	Number of products	Number of claims	Level of analysis		
			Unweighted	Claims weighted	Claim amount and number weighted
All products				Percent reduction	
Total	498	2,964,580	5.04	5.41	6.64
Top 200	295	2,215,469	5.05	5.29	6.58
Quartile 1	116	1,295,071	4.89	5.43	6.24
Quartile 2	71	455,749	4.88	5.14	6.82
Quartile 3	59	268,755	5.16	4.69	6.88
Quartile 4	49	195,894	5.57	5.54	8.15
Non-Top 200	203	749,111	5.02	5.75	6.90
Non-MAC products only					
Total	331	2,108,983	7.58	7.60	7.48
Top 200	205	1,598,401	7.27	7.33	7.41
Quartile 1	80	923,488	7.09	7.62	7.17
Quartile 2	48	339,112	7.22	6.91	7.81
Quartile 3	42	203,794	7.25	6.18	7.20
Quartile 4	35	132,007	7.80	8.21	8.61
Non-Top 200	126	510,582	8.08	8.43	7.73

NOTES: MAC is maximum allowable cost. Top 200 drugs are products on list of Top 200 Drugs of 1984 (*Pharmacy Times*, 1985).

SOURCE: Sonderegger Research Center, University of Wisconsin—Madison School of Pharmacy.

different manufacturers and because reimbursement amounts for products previously set at direct prices also were set via the cost-plus method.

For six of the eight manufacturers' products currently reimbursed at direct prices, the wholesaler costs were equal to the direct prices offered to pharmacists. Therefore, for a number of products (74), the proposed reimbursement amounts were more than the current amounts. (For all but one of these products, the proposed amount would be 5.01 percent more than the current amount.) A summary of the frequencies of percent differences between current and proposed reimbursement amounts is shown in Table 3.

The average percent reductions that would occur for each of the three levels of analysis under this reimbursement option are summarized in Table 4. The analysis weighted by claim amount and number resulted in higher average percent differences (savings), 6.94 percent overall. As with the analyses of option 1, the percent differences tended to increase for less popular products, but the increases were not consistent across Top 200 quartiles.

As with option 1, when only non-MAC products were considered, the average percent differences increased. The simple, unweighted analysis resulted in the highest potential average savings, 8.83 percent. In contrast to the results for AWP less 10.5 percent,

Table 3

Number and percent of non-MAC drug products, by percent differences between wholesaler cost plus 5.01 percent and current Medicaid-allowed reimbursement amounts: Wisconsin

Percent difference	Number of products	Percent of products
+5.0[1]	73	22.1
-0.2	12	3.6
-0.3	4	1.2
-10.7	9	2.7
-10.8	7	2.1
-12.4	4	1.2
-12.5	135	40.8
-12.6	6	1.8
-12.8	7	2.1
-12.9	3	0.9
-13.9	4	1.2
-14.3	9	2.7
-15.8	2	0.6
-15.9	2	0.6
-16.0	29	8.8
-16.1	6	1.8
-20.0 or more[2]	7	2.1

[1]A 5.01-percent difference occurred. The wholesaler cost was equal to the direct price for these products; thus, the proposed amount was larger than the current allowed reimbursement.

[2]All of these products were from two generic manufacturers. There was one occurrence of each of the following percent differences: -20.4, -22.9, -32.1, -36.7, -40.5, -41.5, and -51.6.

NOTES: Non-MAC products are those not reimbursed at the Federal maximum allowable cost. $N = 331$. In addition to the data shown, there was one occurrence of each of the following percent differences: +1.6, -0.1, -0.7, -6.7, -10.9, -12.3, -13.0, -13.2, -13.6, -16.9, -17.7, -17.8.

SOURCE: Sonderegger Research Center, University of Wisconsin—Madison School of Pharmacy.

Table 4

Average percent reductions from current Medicaid reimbursement amount resulting from payment at wholesaler cost plus 5.01 percent, by level of analysis, product group, and quartile: Wisconsin

Product group and quartile	Level of analysis: Unweighted	Claims weighted	Claim amount and number weighted
All products[1]	Percent reduction		
Total	5.87	5.81	6.94
Top 200	5.54	5.41	6.66
Quartile 1	5.13	5.63	6.21
Quartile 2	5.29	5.16	7.27
Quartile 3	5.92	4.21	6.63
Quartile 4	6.40	6.19	8.84
Non-Top 200	6.36	7.02	8.01
Non-MAC products only[1]			
Total	8.83	8.17	7.81
Top 200	7.97	7.49	7.51
Quartile 1	7.44	7.89	7.14
Quartile 2	7.82	6.92	8.33
Quartile 3	8.31	5.55	6.95
Quartile 4	8.96	9.18	9.33
Non-Top 200	10.24	10.30	8.97

[1]Number of products and number of claims for each product group are shown in Table 2.

NOTES: MAC is maximum allowable cost. Top 200 drugs are products on list of Top 200 Drugs of 1984 (*Pharmacy Times*, 1985).

SOURCE: Sonderegger Research Center, University of Wisconsin—Madison School of Pharmacy.

variability in results from different levels of analysis remained when the MAC products were excluded.

Comparing the results for the two proposed methods of setting reimbursement amounts, it is seen that wholesaler cost plus 5.01 percent would provide greater reductions from current reimbursement amounts than option 1 would. This occurs even though nearly 15 percent of products (those now paid at direct prices) had higher reimbursement amounts than at present. Comparing the results across levels of analysis reveals that the simple, unweighted analysis can provide an initial estimate of the potential impact. The importance of market basket mix and size in such analyses is shown by the variability of results across quartiles of Top 200 products and between Top 200 and non-Top 200 products. The results for popular products did not represent what occurred for other, less popular products.

Economic impact and ramifications

The effects of the proposed reimbursement methods can be viewed from two perspectives: savings accruing to Medicaid programs and HCFA or reduced revenues for provider pharmacists. The results of this study can be used to estimate savings to the Wisconsin Medicaid program. An estimate of savings per prescription can be derived by applying the average percent difference (reduction) between existing reimbursement amounts

and those proposed to the average Medicaid prescription claim ingredient cost ($8.48 for fiscal year 1986). Using the results for the analysis weighted by claim amount and number yields average per-prescription savings estimates of $0.56 and $0.59 for AWP less 10.5 percent and wholesaler cost plus 5.01 percent, respectively. These amounts would be slightly different now because of drug price inflation and changes in the mix and popularity of products dispensed to Medicaid recipients that are not reflected in the market basket. These amounts also are conservative because they are based on the average prescription ingredient cost determined by a fee-primary calculation.

Extrapolating these per-prescription savings to the 4.6 million claims paid by Wisconsin Medicaid in fiscal year 1986 yields estimated savings of approximately $2.6 million that would have occurred if either of the proposed EAC methods had been used during the year. The costs of implementing and maintaining a different EAC methodology would be essentially the same as at present. The same procedures as now required to update and maintain EAC's would be used with an automatic, computer-generated adjustment to AWP on the existing data base or manipulation of wholesaler costs on a new data base. Converting to reimbursement based on wholesaler costs would require some initial investment and development, but monitoring and upkeep costs would be similar to those in the present reimbursement system.

For pharmacies, savings accruing to the State would appear as reduced revenues. The impact of proposed reimbursement changes on specific pharmacists or pharmacy operations would depend on the number of Medicaid prescriptions dispensed in the pharmacy plus the average ingredient cost of those prescriptions. Also, the proportional mix of MAC and direct products among prescriptions dispensed to Medicaid recipients would contribute to the impact on an individual pharmacy. Estimation of the impact on individual pharmacies is not within the scope of this project; data from individual pharmacies were not gathered.

The overall reduction percent is based on EAC's for all products, but the reductions actually would occur on non-MAC products only. (It is assumed that the State would continue a MAC program as at present.) Thus, pharmacists would note the effect on non-MAC products, whose reduction percent would be larger than the overall reduction percent.

The intended effect of the policy changes would be to decrease payments for drug products and make them closer to pharmacists' actual costs. More detailed studies on a per-pharmacy basis are needed to evaluate whether pharmacists' purchase costs are accurately accounted for in the methods and whether applying a uniform procedure for setting EAC's across all pharmacies is appropriate or equitable. Also, those evaluating reimbursement changes should consider the influence on total reimbursement allowed (drug cost plus the dispensing fee) to help assure that payments are sufficient to maintain provider participation in the program.

Before concluding, some limitations should be noted. The per-prescription amounts determined as differences between the current and proposed reimbursement levels are estimates only. They were made based on the assumption that the market basket represented the mix of products sold. The actual effects of any reimbursement changes likely will differ slightly as a result of differences in the market mix of products actually reimbursed.

Conclusion

From this evaluation, it appears that the two proposed changes for estimating prescription ingredient acquisition costs would have similar effects on pharmacists. Basing prescription drug ingredient cost payments on wholesaler cost plus 5.01 percent would produce slightly smaller drug reimbursement amounts than the other method would. However, further investigation is needed to determine whether the proposed reimbursement amounts accurately reflect individual pharmacist purchase costs.

The overall impact on pharmacists as a percent of drug costs or as a per-prescription amount was seemingly small. However, the impact should be gauged with respect to the adequacy of current reimbursement and pharmacy profitability. If current total reimbursement levels are considered adequate and equitable, dispensing-fee adjustments might be necessary to compensate for reduced drug ingredient cost payments, helping to assure sufficient provider participation. The methodology used in this study may be useful for evaluating a variety of prescription reimbursement policy options and for defining other reimbursement parameters (e.g., dispensing fee adjustment amounts) that may be relevant or necessary. By comparing current reimbursement amounts with potential reimbursement amounts for a large, representative market basket of products, it is possible to estimate and anticipate the effects of changing prescription reimbursement policy.

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