

Physicians' Perceptions of Prescription Drug Prices: Their Accuracy and Effect on the Prescribing Decision

E. M. Kolassa

ABSTRACT. A survey of 100 primary care physicians found that, in general, these practitioners were unable to estimate accurately the costs of the drugs they commonly prescribe. A pattern of overestimating the costs of lower priced agents and underestimating the costs of higher priced agents suggests that physicians generalize prices for most drugs into a narrow range between \$1.00 and \$2.00 per day. Even though these physicians failed to estimate adequately the costs of the medications they prescribe, most claimed to consider the cost of medications when making the prescribing decision. These findings imply that actual costs have little or no actual effect on the prescribing decisions of most physicians. Should this be true, attempts to control health care costs that do not focus on physician education in the area of treatment costs may prove ineffective.

INTRODUCTION

Health care costs are currently the focus of considerable attention by all facets of society. Physicians, as the primary decision makers and resource allocators within the health care system, must bear a large share of the responsibility for controlling health care costs while providing the best possible care for their patients. Balancing

E. M. Kolassa, M.B.A., is Senior Research Associate, Research Institute of Pharmaceutical Sciences, University of Mississippi, University, MS 38677.

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price. This table does not include those physicians stating they did not care about the cost of medications. As can be seen, the pattern of overestimating the cost of less costly agents and underestimating the cost of those priced higher is also apparent here.

As with previous studies, physicians, in general, tended to overestimate the costs of medications; in this case, 48.2% of the estimates given were more than 20% higher than the mean actual cost (5, 6). These overestimations were not consistent across all agents studied, however, since physicians consistently overestimated only the costs of those medications that are used for chronic disorders that are relatively asymptomatic, such as hypertension and hypercholesterolemia. The price estimates of medications for acute disorders, such as infections and pain, as well as those for more symptomatic diseases, such as arthritis, tended to be low. Since this study, as well as those previously cited, found patient feedback to be the physicians' primary source of drug price information, it might be hypothesized that patients are more prone to complain of the cost of medications for which they feel little benefit from therapy, while medications offering relief from acute symptoms are less likely to generate these complaints. Tables 3 and 4 provide the percentage of responses that fell below, within, and above the range of prices for the specific agents, while Table 5 provides the physicians' reported acquisition of drug price information from various sources and the perceived accuracy of the information provided by each source. Table 6 contrasts the responses of private practice physicians with those who are staff employees of hospitals or HMOs.

Physicians claim to receive price information from pharmaceutical company sales representatives and patients on a fairly regular basis and believe patients to be accurate in their assessments of prices. Differences between practice types did emerge in this area of questioning, as shown in Table 6, with physicians who are staff employees of hospitals and HMOs being significantly less likely to receive price information from sales representatives ($p = .04$) or patients ($p < .01$) than physicians in private practice. The solo practitioners differed from staff physicians in the extent of their belief in the accuracy of price information provided by pharmacists, with staff employees appearing to trust pharmacists' price information more than the solo practitioners ($p = .016$). These differences

TABLE 4. Accuracy of Physician Estimates of Drug Costs for Physicians Offering Estimates.

Product and Daily Dose	<i>n</i>	Percentage Underestimating Cost by More than \$0.50	% of Estimates Within +/- \$0.50 of Average Actual Cost	Percentage Overestimating Cost by More than \$0.50
Generic HCTZ 25mg QD	66	0%	86.4%	13.6%
LANOXIN 0.25mg QD	65	0%	63.1%	36.9%
LASIX 40mg BID	68	0%	48.5%	51.5%
PREMARIN 0.625mg QD	67	0%	64.9%	35.1%
Generic Ibuprofen 600mg TID	68	79.4%	11.8%	8.8%
LOTENSIN 10mg QD	39	0%	41.0%	59.0%
VASOTEC 10mg QD	65	0%	55.4%	44.6%
MICRONASE 5mg BID	62	6.5%	67.7%	25.8%
APAP w/ Cod #3 Q4h	56	41.1%	46.4%	12.5%
ZANTAC 150mg QD	78	3.8%	46.2%	50.0%
MEVACOR 20mg QD	63	9.5%	63.5%	27.0%
PROCARDIA XL 60mg QD	65	32.3%	49.2%	18.5%
FELDENE 20mg QD	58	62.1%	31.0%	6.9%
VOLTAREN 50mg TID	62	69.3%	24.2%	6.5%
CECLOR Susp 250mg/ml TID	65	96.9%	0%	3.1%
AUGMENTIN 250mg TID	68	82.4%	5.9%	11.7%

TABLE 5. Sources and Perceived Accuracy of Drug Price Information.

n = 100					"How accurate, or trustworthy is this information?"			
Source	"How often do you get drug price information from:"				Very	Somewhat	Not	No Opinion
	Always	Often	Seldom	Never				
Drug Company								
Sales Person	12.1	47.5	30.3	10.1	26.0	63.5	8.3	2.1
Patient	8.1	48.5	41.4	10.1	59.6	26.6	11.7	2.1
Pharmacist	4.0	16.2	51.5	28.3	58.1	23.7	2.2	16.1
Published Source	1.0	17.2	55.6	26.3	32.6	43.2	8.4	15.8
Colleagues	1.0	21.2	57.6	20.2	9.6	56.4	20.2	13.8

TABLE 6. Comparison of Drug Price Information Source for Private Practice and Staff Physicians, Average Ratings.

n = 100				"How accurate, or trustworthy is this information?" (1 = "Very" 3 = "Not")		
Source	"How often do you get drug price information from:" (1 = "Always" 4 = "Never")			Private Practice	Staff	p value (chi-sqr.)
	Private Practice	Staff	p value (chi-sqr.)			
Drug Company						
Sales Person	2.31	2.64	.04	1.86	1.67	.40
Patient	2.40	3.00	< .01	1.49	1.61	.45
Pharmacist	3.12	2.77	.09	1.39	1.15	.19
Published Source	3.09	3.00	.40	1.72	1.68	.30
Colleagues	2.97	2.96	.70	2.11	2.16	.09

may be due to the lack of individual patient follow-up and repeat visits within a staff employee's practice and the staff employee's greater exposure to pharmacists on a regular basis.

Even with these differences in the manner in which the physicians may receive price information and their assessments of the accuracy of this information, there were no differences in the accuracy of the price estimates offered by physicians in the various practice settings.

As mentioned previously, the error in price estimates appeared to follow a pattern, with physicians overestimating the costs of some

medication types and underestimating others. Additionally, there was a distinct pattern of overestimation of the costs of less expensive agents, such as Lanoxin®, Lasix®, and generic products, while there was underestimation of the costs of antibiotics and NSAIDs (Feldene® and Voltaren®). While the overestimation of drug costs has been deemed acceptable by previous researchers, since this overestimation may limit the use of these products to only those cases where they are truly necessary, the underestimation of the costs of some agents may then lead to their overuse or to failure to consider similar products with lower costs (6). This pattern of overestimation of the costs of some agents and the underestimation of others lead to an examination of the distribution of the estimates.

While only 4 of the 15 agents included in the study were priced between \$1.00 and \$2.00 per day, 59.3% of all price estimates fell within that range. Might one, then, generalize that the responding physicians assume that the "typical" drug costs between \$1.00 and \$2.00 per day? This assumption would allow the physician's stated concerns about health care costs to be reconciled with his or her ignorance of the actual costs.

BELIEFS AND OPINIONS

Included in the survey instrument was a group of statements dealing with health care cost issues. Physicians were asked to assess their degree of agreement with these statements using a 1 to 7 scale, with "1" indicating very strong disagreement and "7" indicating very strong agreement. The findings from this section are presented in Table 7.

Physicians registered strong agreement with most questions concerning health care costs and the role of cost in prescribing. There was, in fact, general agreement with every statement dealing with the use of cost information and the concern for the cost impact of decisions. At the same time, physicians indicated a weak disagreement with statements concerning their own knowledge of drug prices, partly acknowledging their own lack of knowledge. The only difference between practice types in this set of statements was, again, between solo practice and staff physicians, who differed in the amount of patient complaints they hear concerning price ($p < .01$).