

# PA attitudes toward prescription drug costs

Eric Vangsnes, MS, PA-C

Elderly persons comprise only 13% of the United States population, yet they account for one third of all prescription drugs used.<sup>1</sup> The Kaiser Family Foundation reports that in a 2003 survey of 17,685 Medicare-eligible older persons, respondents with three or more chronic conditions (73%) take five or more medications regularly.<sup>2</sup>

Before the initiation of Part D, many relied on Medicare as their sole medical insurance. Half of United States residents older than 65 years lack medical insurance for prescription drug coverage, even though 40% receive supplemental insurance from employers or have purchased a Medigap policy and about 10% of Medicare recipients qualify for Medicaid prescription coverage.<sup>3</sup> Medicare recipients may spend more than 10% of their income on prescription medications.<sup>4</sup> Prescription medication costs can be so prohibitive that some people may be forced to choose between paying for housing, food, or utilities and buying their medication.<sup>5</sup>

**Impact on adherence to treatment** Medication costs can affect patient compliance. On the Kaiser Family Foundation survey, 26% of respondents reported not filling the prescription or not taking the medication as directed because of cost.<sup>2</sup> The Center on an Aging Society reported that many elderly persons, especially those with low incomes, took less medicine than was pre-

## ABSTRACT

**Purpose:** *This descriptive comparative study assessed PAs' knowledge of drug costs and attitudes about prescribing prescription medications.*

**Method:** *Data were collected using a modified questionnaire. The survey instrument assessed PAs' attitudes about prescribing as well as their knowledge of prescription medication costs.*

**Results:** *Forty percent of the sample population were able to accurately identify the correct cost of medications. Most of the sample population considered costs when making a prescriptive decision. There were significant differences in the prescribing attitudes of PAs in various practice settings and medical specialties.*

**Conclusions:** *The results of this study with PAs are similar to those of previous investigations involving physicians' knowledge of drug costs. We should recognize this deficit and ensure that a discussion of drug costs, particularly those associated with the Medicare population, is an important part of PA continuing education.*

scribed.<sup>6</sup> Up to one quarter of people without drug coverage had not filled prescriptions at least once in the past year because of the cost, had skipped doses to make medication last longer, and had spent less in the past year on food and heat in order to purchase medications.<sup>5</sup>

**Poorer health outcomes** Patients who cannot afford to buy their medications or to take their medications as prescribed tend to have poorer health outcomes.<sup>7-9</sup> Shulman and colleagues found that 36.5% of adult patients with uncontrolled hypertension reported difficulty paying for their medications, compared with 15.5% of those whose BP was controlled.<sup>10</sup> The study concluded that drug cost contributed to inadequate control of hypertension in certain population subgroups.<sup>10</sup>

People are often hospitalized or admitted to nursing homes because of illnesses or sequelae resulting from lack of medicines.<sup>7-9,11</sup> The high cost of medication may ultimately lead to a greater number of hospital and nursing home admissions.<sup>8,9,11,12</sup> The ability of medical care providers to select cost-effective therapy is important for the patient and for other consumers as well.<sup>13</sup>

Knowledge of drug costs and clinician attitudes toward the use of generic over branded drugs can have a significant impact on the decision to choose a less expensive regimen over a more expensive one.<sup>14,15</sup> In a practical sense, deciding which medication to choose often depends on the provider's knowledge about drug safety and efficacy,

The author is an assistant professor in the physician assistant program at Western Michigan University College of Health and Human Services, Kalamazoo, Mich. He has indicated no relationships to disclose relating to the content of this article.

beliefs about patient compliance, and attitudes about brand name versus generic preparations.<sup>14,15</sup>

**Physicians' knowledge of drug costs** Studies conducted in the 1970s and each decade thereafter have shown that physicians have a poor knowledge of drug costs.<sup>15-23</sup> In the 1970s, physicians mentioned cost as a reason for choosing a drug less than 6% of the time. Many said they did not even consider cost when prescribing.<sup>24</sup> Further research suggested that physicians were unaware of the financial impact of the care they provided, leading to the realization that physicians needed education about drug costs.<sup>24,25</sup> Unfortunately, later studies indicated that physicians in family medicine,<sup>15,19</sup> internal medicine,<sup>15</sup> pediatrics,<sup>26</sup> neurology,<sup>27</sup> and geriatrics<sup>13</sup> continued to have poor knowledge of medication costs.<sup>21</sup>

**PAs' knowledge of drug costs** Parallel research regarding PAs' knowledge of drug costs or their attitudes about prescribing drugs is limited. A 1984 study assessed PA prescribing behavior and attitudes without assessing drug cost knowledge.<sup>28</sup> PAs have prescriptive authority in 48 states,<sup>29</sup> and in 2004 alone, they prescribed 250 million medications.<sup>30</sup> Since PAs work in more than 90% of the specialties that treat elderly patients, it is important that their knowledge of drug costs also be examined.<sup>31</sup>

The purpose of the current study was to assess PA attitudes regarding prescribing prescription medications and their knowledge of drug costs. Goals were to answer the following questions: (1) What knowledge do PAs have regarding actual drug costs? (2) Do PAs actively try to keep drug costs down for their patients? (3) What are the attitudes of PAs regarding prescribing drugs? (4) Do knowledge and prescriptive attitudes of PAs differ by practice specialty? (5) Do knowledge and prescriptive attitudes of PAs differ by practice setting?

## Methods

**Study design** This study employed a mail survey based on one that assessed physicians' prescribing attitudes and knowledge of prescription medication costs.<sup>21</sup> The survey was modified for PAs. There were six questions on demographics, followed by eight on prescribing patterns and resources. The final section was designed to measure PA knowledge of the relative costs of 30 different drugs for a 1-month supply. Medications chosen for this part of the survey instrument were taken from a report by the Families USA group in 2003.<sup>1</sup>

The survey instrument was pretested on six PA faculty from Western Michigan University as well as on six committee members from the physician assistant clinical knowledge rating and assessment tool test item writers group from the Association of Physician Assistant Programs (now Physician Assistant Education Association). These participants are PA faculty members from various PA programs across the country.

**Subject selection** The target population for this study was PAs who reside in the state of Michigan. The author obtained a list of all 1,958 Michigan PAs from the Michigan Department of Consumer and Industry Services. A sample size optimization analysis showed that a survey sample of 323 PAs would sufficiently reflect the target population. Since a realistic response rate for a mail survey is 30% to 60%,<sup>32</sup> the survey was sent to 1,079 randomly selected PAs. Hoping to maximize the response rate to more than 30%, the author sent a postcard 3 weeks after the original mailing reminding the selected participants to complete the survey instrument if they had not yet done so or thanking them for their participation if they had completed and returned the survey instrument.<sup>33</sup>

**Data analysis** Demographic information was collected regarding gender, professional role, practice setting, length of practice, professional degree, and practice specialty. Data from the survey instrument were examined using descriptive statistics utilizing mean and proportions. Inferential statistics explored possible differences in responses among the different variables of medical specialty and practice setting. The drug cost knowledge portion of the survey instrument was scored by calculating the number of correct responses from the number of those attempted. This method took into consideration that not all specialties utilize all of the drug preparations that were listed on the survey instrument. All statistical analysis was performed utilizing the Statistical Package for the Social Sciences.

## Results

Of the 1,079 survey instruments sent out, 295 were returned, for a response rate of 27.3%. Seven of the respondents no longer practiced as PAs, and 57 filled out the survey instrument incorrectly. Since this study focused on PAs who treat Medicare recipients, 8 participants who were employed within pediatrics and 9 who were employed in occupational medicine settings were excluded. Hence, a total of 214 survey instruments

### Competencies

Medical knowledge	◆
Interpersonal & communication skills	◆◆◆
Patient care	◆◆◆
Professionalism	◆◆◆
Practice-based learning and improvement	◆◆◆◆
Systems-based practice	◆◆◆◆

For an explanation of competencies ratings, see the table of contents.

**TABLE 1**  
**Demographics of survey participants**

	Number*	Percent
<b>Gender</b>		
Female	128	59.8
Male	86	40.2
<b>Professional degree</b>		
Certificate	9	4.2
Bachelor's	76	35.5
Master's	124	57.9
PhD	2	0.9
Other	3	1.4
<b>Practice setting</b>		
Inpatient	45	21.7
Outpatient	154	72.0
Both	15	7.0
<b>Length of practice</b>		
<1 y	12	5.6
1-2 y	22	10.3
2-5 y	70	32.7
5-10 y	43	20.1
10-15 y	17	7.9
15-20 y	20	9.3
>20 y	30	14.0
<b>Professional role</b>		
Clinical	212	99.1
Academic	2	0.9
<b>Practice specialty</b>		
General surgery	2	0.9
General internal medicine	16	7.5
General family practice	80	37.4
Ob/Gyn	3	1.4
Surgery subspecialty	27	12.6
Internal medicine subspecialty	24	11.2
Other	62	29.0
*N = 214		

(72.5% of those returned) were suitable for data analysis (see Table 1).

Data were then subdivided into two categories: survey instruments on which respondents indicated that drug cost was considered when making a prescription decision (n = 182) and those on which respondents indicated that drug cost was not considered when making a prescription decision (n = 32). Among participants in the latter group, 47% were in a surgery subspecialty and 50% were employed within the inpatient setting. These participants were told to stop the survey, and they were not included in further analyses.

**Knowledge of drug costs** Overall, 40% of those who returned acceptable surveys correctly identified the actual cost range of a 1-month supply of the drugs listed on the survey instrument (see Figure 1, page 48). PAs practicing in medical specialties and surgery comprised 33% to 40%, while all other PA specialties comprised more than 40%.

**Efforts to keep drug costs down** PAs were asked whether they actively try to keep drug costs down. Most respondents (88%) indicated that they ask about their patient's ability to pay for medications before choosing a drug. Whether respondents were concerned about the cost of medications differed depending on the type of insurance held by the patient. If the patient's insurance was Medicaid, 71% indicated concern; for Medicare, 89%; for self-pay, 96%; and for HMO, 60% (see Figure 2, page 49). These responses suggest that PAs do, indeed, make a conscious effort to keep costs down.

**Attitudes about prescribing drugs** Most respondents (73%) indicated that the affordability of a given drug can affect their prescribing decisions more than the efficacy of the chosen drug (see Figure 3, page 49). Most of the respondents (86%) stated that the patient's type of prescription drug insurance influenced their prescriptive choices. The responses clearly indicate that PAs are concerned about making prescribing decisions based upon the patient's ability to pay and that the patient's insurance does influence their prescriptive choice. Fewer than half of the respondents (47%) expressed a tendency to prescribe generic drugs more than brands.

**Differences by practice specialty** A series of one-way analyses of variance were used to determine whether there were significant differences by practice specialty in survey question responses. There was such a difference in whether respondents asked patients about their ability to pay for the medications before making prescription decisions ( $F = 4.914$ ,  $df = 6$ , 175;  $P < .001$ ). Post hoc analysis revealed that the significant difference was between the general internal medicine and surgery subspecialty groups (Tukey HSD,  $P = .006$ ).

There was a significant difference by practice specialty regarding whether prescribing decisions are based on the patient's ability to afford the drug rather than on

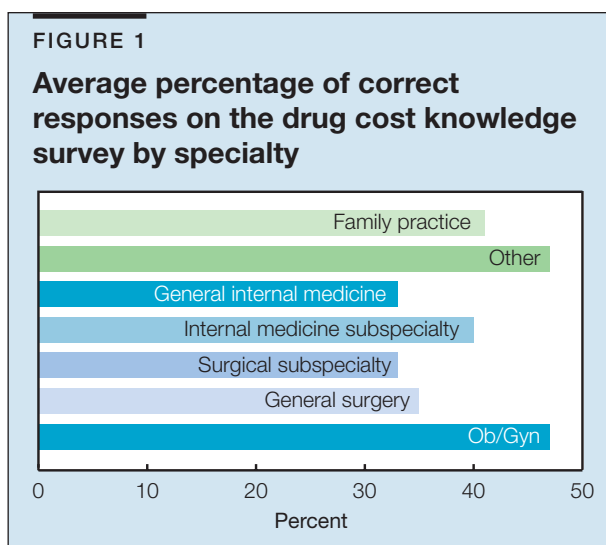
its efficacy ( $F = 2.616$ ,  $df = 6$ ,  $175$ ;  $P = .019$ ). Post hoc analysis demonstrated that the significant difference was between the surgery subspecialty group and the general family practice ( $P = .011$ ), internal medicine subspecialty ( $P = .040$ ), and other ( $P = .024$ ) specialty groups. This suggests that PAs employed in surgical subspecialties are not as concerned about drug costs.

There was also a significant difference by practice specialty regarding whether the patient's type of prescription drug insurance influenced prescription choices ( $F = 2.749$ ,  $df = 6$ ,  $175$ ;  $P = .014$ ). Post hoc analysis demonstrated that the difference was between the general family practice and surgery subspecialty groups ( $P = .031$ ). PAs employed in family practice consider their patients' insurance when prescribing medications.

**Differences by practice setting** A series of independent *t*-tests determined if responses differed by practice setting (inpatient versus outpatient). There was a significant difference by practice setting in responses to the question regarding whether the patient's ability to pay for the medications was considered before a drug was chosen ( $t = 2.515$ ,  $df = 171$ ,  $P = .013$ ). This suggests that PAs who are employed in inpatient settings are less likely to consider their patients' ability to pay for the medications.

There was a significant difference by practice setting concerning whether the prescription drug insurance of the patient was considered when choosing a drug ( $t = -2.947$ ,  $df = 171$ ,  $P = .004$ ). This suggests that PAs who work in the inpatient setting are not as concerned about insurance coverage.

There was also a significant difference by practice setting regarding whether brand name drugs were prescribed more often than generic drugs ( $t = 2.406$ ,  $df = 71$ ,  $P = .017$ ). This suggests that PAs working in the inpatient setting prescribe more brand name drugs than do PAs who work in the outpatient setting.



## Discussion and conclusion

The findings of this study are similar to those of studies done on physicians during the past 30 years.<sup>15-23</sup> While both physicians and PAs consider drug costs to be an important consideration, knowledge of those costs is lacking. Findings from this study are similar to those of physician studies regarding overestimation and underestimation of drug costs.<sup>16,19</sup> The results of this study indicate that 60% of the time surveyed PAs do not know the actual cost of their patients' drugs, but these results vary according to medical specialty and practice setting. PAs practicing in surgery subspecialties who responded to this survey were less likely to consider a patient's ability to pay for medications and less concerned about drug costs. By comparison, PAs practicing in general internal medicine were more likely to ask about a patient's ability to pay for medication and more likely to consider a patient's insurance when making prescriptive decisions. The differences may result from the particular therapeutics used in surgical practices, which may limit drug selection and availability. This may lead PAs to select drugs that most often lack competition and therefore tend to be more expensive (ie, brand name instead of generic drugs).

**Role of practice setting** It was also noteworthy that practice setting played a significant role. Respondents who worked in inpatient settings were less likely to consider their patients' ability to pay for the medications, less concerned about insurance coverage, and more likely to prescribe brand name drugs than were PAs not working in an inpatient setting. PAs in inpatient settings may feel less restricted when ordering medications for their patients, whereas those in outpatient settings can be constrained by what their patients can afford.

**More education needed** Findings from previous physician studies have indicated the need for better education regarding drug costs as well as access to information about drug costs.<sup>21,22,24,34</sup> Studies have shown that an educational program on drug therapeutics and costs increases physician knowledge and decreases patients' expenses and that the number of educational sessions increases the amount of knowledge.<sup>26,35,36</sup>

The results of the present study are similar to the findings of research on physicians and suggest that PAs would benefit from more education about drug costs both while they are in PA school and later on through continuing education. PA programs should continue to emphasize the importance of drug costs and the impact that these particular expenses have on all patient populations, especially the Medicare population. Medicare Part D may provide some relief to older patients, but PAs will still have to be educated about drug costs and make a conscious effort to keep medical costs down.

**Limitations and implications for future research** The current study was subject to all of the limitations that

FIGURE 2

Responses to the prompt: "The cost of medication is a concern to me when my patient's insurance is...."

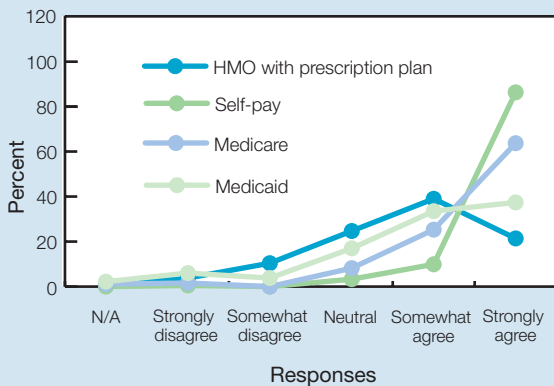
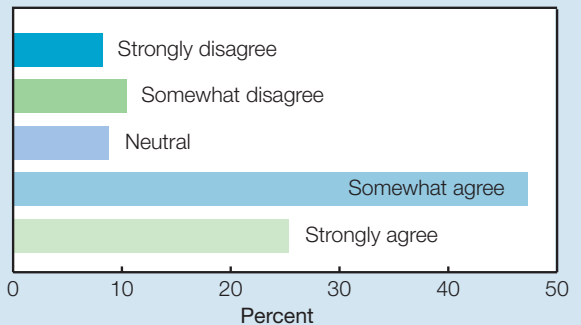


FIGURE 3

Responses to the prompt: "In my practice, I sometimes make prescribing decisions based on whether the patient can afford the prescription rather than efficacy of the chosen drug"



apply to mail surveys, such as low response rate, limited depth of information, and no way to explain instructions. Although the survey did not achieve the desired response rate of 30%, the data are still meaningful and can serve as the basis for future studies. Other limitations include the sample population. The survey instrument was sent only to PAs who reside within Michigan; future studies should include participants from more states, or possibly the entire United States, to make generalizations more meaningful. This investigation could be considered a pilot for such research. Finally, the sample was limited by the need to exclude participants who incorrectly filled out the survey and those who were employed in pediatrics and occupational medicine. It would be helpful to know practice specialty before mailing a survey instrument to respondents, as this would cut down on the number of unusable surveys later. □

#### REFERENCES

1. Out-of-Bounds: Rising Prescription Drug Prices for Seniors. Families USA, 2003. Available at: [http://www.familiesusa.org/assets/pdfs/Out\\_of\\_Boundsab79.pdf](http://www.familiesusa.org/assets/pdfs/Out_of_Boundsab79.pdf). Accessed September 22, 2006.
2. Prescription Drug Coverage and Seniors: Findings from a 2003 National Survey. Kaiser Family Foundation Commonwealth Fund. Available at: <http://www.kff.org/medicare/med041905pkg.cfm>. Accessed September 22, 2006.
3. Rogowski J, Lillard LA, Kington R. The financial burden of prescription drug use among elderly persons. *Gerontologist*. 1997;37(4):475-482.
4. Sambamoorthi U, Shea D, Crystal S. Total and out-of-pocket expenditures for prescription drugs among older persons. *Gerontologist*. 2003;42(3):345-349.
5. Safran D, Neuman P, Schoen C, et al. Prescription drug coverage and seniors: How well are states closing the gap? *Health Aff (Millwood)*. Jul-Dec 2002 (suppl). Web exclusives: W253-68. Available at: <http://www.healthaffairs.org>. Accessed September 22, 2006.
6. Center on an Aging Society, 2002. Prescription drugs: A vital component of health care. Available at: <http://hcrp.georgetown.edu/agingsociety/profiles.html#disabling>. Accessed September 22, 2006.
7. Stuart B, Grana J. Ability to pay and the decision to medicate. *Med Care*. 1998;36(2):202-211.
8. Tamblyn R, Laprise R, Hanley JA, et al. Adverse events associated with prescription drug cost-sharing among poor and elderly persons. *JAMA*. 2001;285(4):421-429.
9. Blustein J. Drug coverage and drug purchases by Medicare beneficiaries with hypertension. *Health Aff (Millwood)*. 2000;19(2):219-230.
10. Shulman NB, Martinez B, Brogan D, et al. Financial cost as an obstacle to hypertension therapy. *Am J Public Health*. 1986;76(9):1105-1108.

11. Soumerai SB, Ross-Degnan D, Avorn J, et al. Effects of Medicaid drug-payment limits on admission to hospitals and nursing homes. *N Engl J Med*. 1991;325(15):1072-1077.
12. Bodenheimer TS. Affordable prescriptions for the elderly. *JAMA*. 2001;286(14):1762-1763.
13. Glickman L, Bruce EA, Caro FG, Avorn J. Physicians' knowledge of drug costs for the elderly. *J Am Geriatr Soc*. 1994;42(9):992-996.
14. Bower AD, Burkett GL. Family physicians and generic drugs: a study of recognition, information sources, prescribing attitudes, and practices. *J Fam Pract*. 1987;24(6):612-616.
15. Walzak D, Swindells S, Bhardwaj A. Primary care physicians and the cost of drugs: a study of prescribing practices based on recognition and information sources. *J Clin Pharmacol*. 1994;34(12):1159-1163.
16. Miller LG, Blum A. Physician awareness of prescription drug costs: a missing element of drug advertising and promotion. *J Fam Pract*. 1993;36(1):33-36.
17. Lowy DR, Lowy L, Warner RS. A survey of physicians' awareness of drug costs. *J Med Educ*. 1972;47(5):349-351.
18. Hoffman J, Barefield FA, Ramamurthy S. A survey of physician knowledge of drug costs. *J Pain Symptom Manage*. 1995;10(6):432-435.
19. Oppenheim GL, Erickson SH, Ashworth C. The family physician's knowledge of the cost of prescribed drugs. *J Fam Pract*. 1981;12(6):1027-1030.
20. Rowe J, MacVicar S. Doctors' knowledge of the cost of common medications. *J Clin Hosp Pharm*. 1986;11(5):365-368.
21. Reichert S, Simon T, Halm EA. Physicians' attitudes about prescribing and knowledge of the costs of common medications. *Arch Intern Med*. 2000;160(18):2799-2803.
22. Ernst ME, Kelly MW, Hoehns JD, et al. Prescription medication costs: a study of physician familiarity. *Arch Fam Med*. 2000;9(10):1002-1007.
23. Fink JL, Kerrigan DJ. Physicians' knowledge of drug prices. *Contemp Pharm Pract*. 1978;1(1):18-21.
24. Dresnick SJ, Roth WI, Linn BS, et al. The physician's role in the cost-containment problem. *JAMA*. 1979;241(15):1606-1609.
25. Skipper JK Jr, Mulligan JL, Garg ML. Use of peer group review in a community and family medicine clerkship. *J Med Educ*. 1974;49(10):991-993.
26. Sumpton JE, Frewen TC, Rieder MJ. The effect of physician education on knowledge of drug therapeutics and costs. *Ann Pharmacother*. 1992;26(5):692-697.
27. Beringer GB, Biel M, Ziegler DK. Neurologists' knowledge of medication costs. *Neurology*. 1984;34(1):121-122.
28. Mittman D, Mirotnik J. PA prescribing behavior and attitudes: a profile. *Physician Assist*. 1984;8(3):15-16, 21-24.
29. Where physician assistants are authorized to prescribe. American Academy of Physician Assistants. Available at: <http://www.aapa.org/gandp/rxchart.html>. Accessed September 22, 2006.
30. Information update: Number of patient visits made to physician assistants and number of medications prescribed or recommended by physician assistants in 2004. American Academy of Physician Assistants. Available at: [www.aapa.org/research/04-visits-rx.pdf](http://www.aapa.org/research/04-visits-rx.pdf). Accessed September 22, 2006.
31. AAPA. 2004 Census Report. American Academy of Physician Assistants. Available at: [www.aapa.org/research/04census-intro.html](http://www.aapa.org/research/04census-intro.html). Accessed September 22, 2006.
32. Portney LG, Watkins MP. *Foundations of Clinical Research: Applications to Practice*. Upper Saddle River, NJ: Prentice-Hall; 2000.
33. Bailey DM. *Research for the Health Professional: A Practical Guide*. 2nd ed. Philadelphia, Pa: FA Davis; 1997.
34. Barclay LP, Hatton RC, Doering PL, Shands JW Jr. Physicians' perceptions and knowledge of drug costs: results of a survey. *Formulary*. 1995;30(5):268-279.
35. Avorn J, Soumerai SB. Improving drug-therapy decisions through educational outreach: a randomized controlled trial of academically based "detailing." *N Engl J Med*. 1983;308(24):1457-1463.
36. Frazier LM, Brown JT, Divine GW, et al. Can physician education lower the cost of prescription drugs? A prospective, controlled trial. *Ann Intern Med*. 1991;115(2):116-121.