Physicians' Opinions About Responsibility for Patient Out-of-Pocket Costs and Formulary Prescribing in Two Midwestern States

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ABSTRACT

BACKGROUND: Multi-tier copayment designs in pharmacy benefit plans are intended to steer patients and prescribers to preferred drug therapies that have lower out-of-pocket costs for patients.

OBJECTIVE: To describe and assess physicians' prescribing experiences and opinions in a multi-tier, primarily 3-tier formulary environment in 2 Midwestern states.

METHODS: This was a cross-sectional survey of physicians practicing in either Minnesota or North Dakota. A packet consisting of a survey instrument, a cover letter, and a postage-paid return envelope was mailed to a random sample of 690 physician members of the Minnesota Medical Association (n=460, 5.1% of members) or the North Dakota Medical Association (n=230, 25.6% of members). Surveys were mailed between March and May 2006. Nonresponders were mailed up to 2 additional surveys. Survey items included practice specialty, sources used to obtain drug information, perceived importance of cost containment actions (e.g., prescribing drug with lowest total cost, prescribing drug that minimizes patient out-of-pocket cost), and how often the physician was personally aware of the following when writing a prescription: identity of the patient's insurer, patient's pharmacy benefit structure, preferred medications on the insurer's formulary, patient's copayment (out-of-pocket cost) responsibility, and list price of the medication.

RESULTS: The survey response rate was 49.8% (296 of 594). The results were as follows: 93.5% of respondents agreed that it was important to prescribe the drug that would minimize the patient's out-of-pocket costs, 73.2% agreed that it was important to discuss out-of-pocket medication costs with patients, 81.8% of respondents agreed that it was important to prescribe the drug with the lowest total costs, and 33.3% of respondents believed that it was their responsibility to prescribe a preferred (formulary) medication. According to the survey, 61.6% of respondents were rarely or never aware of their patient's copayment amounts, and 42.4% were rarely or never aware of the list price of the medication. Physician specialty was associated with the awareness of the identity of the patient's insurer (generalists, 41.1% vs. specialists, 19.2%; $P=0.001$) and use of personal digital assistant (PDA) when prescribing (generalists, 38.9% vs. specialists, 21.1%; $P=0.005$).

CONCLUSION: Physicians who responded to this survey believed that it was important to prescribe drugs that would minimize patients' prescription copayments, but they were often unaware of the preferred medications on the formulary, the patients' copayment amounts, or the price of the drugs prescribed.

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What is already known about this subject

- Surveys of California physicians document that, in 3-tier formulary benefit plans, patients' potential out-of-pocket cost savings may often go unrealized because a majority of physicians (62%-70%) reported never or seldom having knowledge of a patient's out-of-pocket expenses.
- Physicians tend to depend on pharmacists either to communicate patients' medication preferences or to help patients manage out-of-pocket medication costs. In a survey of physician leaders in California, 68% of respondents agreed that it was the pharmacist's responsibility to identify nonpreferred medications.
- In a survey of California Medical Association members, 53% and 33% of respondents reported being familiar most or all of the time with patients' insurers and preferred formulary options, respectively.

What this study adds

- A vast majority (82%) of the physicians in this study believed that it was important to prescribe the drug that would lower total costs, and 94% believed that it was important to prescribe a medication that would reduce patients' copayments. However, only 33% of the physicians believed that it was their responsibility to prescribe preferred medications.
- Physician knowledge of a patient's prescription copayment varies from region to region; 53% of California physicians reported being always or often aware of a patient's insurer, compared with only 35% of physicians in Minnesota and North Dakota.
- Physician specialty was associated with awareness of the identity of the patient's insurer (generalists, 41.1% vs. specialists, 19.2%, $P=0.001$) and use of a personal digital assistant (PDA) when prescribing (generalists, 38.9% vs. specialists, 21.1%, $P<0.001$).

The percentage of the health care budget spent on medications is a growing concern in the United States.¹ To constrain prescription drug costs, health plans have instituted incentive-based, tiered copayment pharmacy benefit plans.²⁻⁴ The Medicare Modernization Act (MMA) calls for the implementation of tiered pharmacy benefit plans that lower

TABLE 1 Health Care Expenditures and Utilization Characteristics for North Dakota and Minnesota^a

	Health Care Expenditure in 2004 (in Millions)	Average Annual Growth in Health Care Expenditures (1991-2004)	Health Care Expenditures per Capita in 2004	Total Number of Community Pharmacy Prescriptions in 2006	Annual Per Capita Community Pharmacy Prescriptions in 2006	Number of HMOs in 2006
MN	\$29,524	8%	\$5,795	51,717,784	10	14
ND	\$3,693	6%	\$5,808	6,586,945	10	1
U.S.	\$1,551,255	7%	\$5,283	3,309,155,973	11	539

^aSource: The Henry Kaiser Family Foundation. *Managed Care and Health Insurance*.²³

HMO = health maintenance organization; MN = Minnesota; ND = North Dakota; U.S. = United States.

patient payments for prescriptions filled with preferred drugs.³ In recent years, both the percentage of Americans enrolled in multi-tier copayment plans and the financial incentives in these pharmacy benefit plans have increased considerably.^{5,6} As of 2005, 70% of covered workers were enrolled in 3-tier copayment plans, compared with only 8% in 1998. Copayments or out-of-pocket costs for nonpreferred drugs have increased substantially in the last few years from averages of \$25 in 2002 to \$35 in 2005.^{5,6}

Studies of 3-tier formulary benefit plans suggest that patients' out-of-pocket cost savings often go unrealized because many physicians lack the knowledge to help patients minimize their prescription copayments.²⁻⁴ Researchers also have evaluated the impact of higher prescription drug costs on medication compliance. Higher copayments and lack of prescription drug coverage have been associated with decreased patient medication compliance in some studies, and research suggests that physicians often lack the time to address issues related to copayment and subsequent medication noncompliance at the time of prescribing.⁷⁻¹⁵ For example, using a statistical model based on a cross-sectional analysis of claims data for patients who initiated cholesterol-lowering therapy, Goldman et al. reported that, for each \$10 increase in copayment, average compliance in a plan year was predicted to drop 5 percentage points.¹³ Zhang et al. reported the results of a cross-sectional study of angiotensin system blockers, finding that each dollar of additional out-of-pocket cost for a 30-day supply of the initial prescription was associated with a 1.9% increase in the total number of days without therapy.¹⁴ However, some studies have indicated that compliance is unrelated to copayment increases.¹⁵⁻¹⁹ Specifically, studies using stronger quasi-experimental designs found no relationship between chronic medication adherence and modest (\$5-\$13) copayment increases.¹⁵⁻¹⁹

Numerous barriers exist to decreasing prescription copayments by increasing the use of preferred medications on multi-tier drug formularies. Most notable include the complexities of dealing with multiple drug plans and the time required of physicians and pharmacists to change a prescription to a plan's preferred drug.^{7,11,20}

Little is known about the challenges that physicians face when prescribing in regions where numerous prescription benefit plans provide coverage with multi-tier copayments. Recent studies conducted in California indicate that physicians lack the knowledge to help patients manage their prescription copayments and often depend on pharmacists to serve as the patient's financial advocate.^{2,3} However, these studies may not represent physician prescribing experience in other states because of differences in the prescribing environment. For example, a study of physicians practicing in California may understate the challenges of prescribing in a multi-tier formulary environment because staff-model health maintenance organizations (HMOs) comprise a substantial market share in California, and these physicians are subject to only 1 drug formulary.⁴ Also, the concentration of market share in a few HMOs may limit the number of competing formularies. Shrank et al. reported that 40% of responding physicians in California indicated that they prescribe from 0 to 1 formularies.³ Additionally, Shrank et al. (2005 and 2006) documented that, in 3-tier formulary benefit plans, patients' potential out-of-pocket cost savings may often go unrealized because many physicians (62%-70%) reported never or seldom having knowledge of a patient's out-of-pocket expenses.^{2,3}

The present study was conducted to describe and assess physician prescribing experiences in a prescribing environment different than in California. Physicians in 2 Midwestern states with patients enrolled in numerous multi-tier copayment formulary plans were surveyed. The survey also included questions about Medicare Part D, because the MMA promoted tiered pharmacy benefit plans³ in which patient copayments are lower for preferred than for nonpreferred drugs.

Minnesota and North Dakota are upper Midwestern states. In 2006, the majority (72%) of the population in Minnesota resided in urban areas, whereas in North Dakota, a majority (53%) resided in rural areas.^{21,22} Other pertinent information about Minnesota and North Dakota is included in Table 1.²³ To achieve the objective of this study, we collected information about physicians' beliefs or opinions on prescribing and drug costs, the challenges that physicians face when prescribing in a multi-tier formulary environment, and their use of information technology.

FIGURE 1 Sample of Practicing Physicians in Minnesota and North Dakota

MN=Minnesota; ND=North Dakota.

Methods

Study Sample

A packet consisting of a survey instrument, a cover letter, and a postage-paid return envelope was mailed to a random sample of 690 physician members of the Minnesota Medical Association (n=460) or the North Dakota Medical Association (n=230). According to the Minnesota Medical Association, there are 12,350 licensed physicians practicing in Minnesota, and 9,000 (72.9%) are members of the state medical association. The Minnesota Board of Medical Practice acknowledges that an undetermined number of licensed physicians do not directly care for patients. According to the North Dakota Medical Association, there are 1,357 licensed physicians practicing in North Dakota, and 898 (66.2%) are members of the state medical association (Figure 1).

Surveys were mailed out between March and May 2006. Nonresponders received up to 2 additional mailed surveys. Follow-up post card reminders were mailed approximately 2 weeks after the first and second survey mailings. Approximately 2 weeks after the last survey mailing, nonresponders were contacted by phone, and we sent an additional survey if requested. Phone surveys were conducted for physicians who indicated this preference. The study was approved by the North Dakota State University Institutional Review Board.

Survey Design

The survey was adapted from an instrument developed by Shrank et al.^{2,3} This modified instrument was pilot tested on 7 practicing physicians in Minnesota and North Dakota, and the survey was refined based on their responses. Major differences between this modified instrument and the instrument used by Shrank et al.³ included the addition of open-ended comment items and questions about (a) Medicare Part D, (b) knowledge of the national average price of the top 10 selling drugs, and (c) exposure to cost-effective prescribing in medical school and residency training. The final survey consisted of 43 items dealing with physicians' opinions (beliefs) about prescribing and drug costs. Other questions included practice specialty, sources used for drug information, perceived importance of cost containment actions (e.g., prescribing drug with lowest total cost, prescribing drug that minimizes patient out-of-pocket cost), and how often the physician was personally aware of the following when writing a prescription: identity of the patient's insurer, patient's pharmacy benefit structure, preferred medications on the patient's formulary, patient copayment responsibility, and list price of the medication. Survey responses specific to Medicare Part D have been published as a separate manuscript and are not included in this article.²⁴ The survey included open-ended, multiple-choice, and 5-point Likert scale questions. A complete copy of the survey is available upon request to the corresponding author.

Data Analysis

Descriptive statistics were used to present the characteristics of the respondents and the primary variables of interest. Physicians whose medical specialties were emergency medicine, family practice (including geriatric), general practice, gynecology, internal medicine (including geriatric), obstetrics and gynecology, obstetrics, and pediatrics were considered to be generalists. Physicians reporting any other medical specialties were considered to be specialists.

The primary variables of interest were physicians' beliefs or opinions about prescribing and drug costs, awareness of patients' prescription copayments at the time of prescribing, awareness of the determinants of those costs (e.g., insurers, formularies, pharmacy benefit structures) and use of information technology. Pearson chi-square analyses were performed to assess associations between outcome measures and independent variables using SAS version 9.1 (SAS Institute Inc., Cary, NC). Statistical significance was set at $P < 0.05$. We also ascertained the internal consistency (reliability) of the survey instrument for all the questions that included a Likert scale response, using Cronbach's alpha.

Of note, the study sample was a stratified random sample in that 5.1% of the Minnesota and 25.6% of the North Dakota medical association members were selected for study. This design was used to ensure adequate representation from both states.

FIGURE 2 Survey Response Rate

MN=Minnesota; ND=North Dakota.

To ascertain the possible effect of this sampling design on study results, we performed a comparison of Minnesota and North Dakota physicians on key outcome variables. These key outcome variables were (a) importance of prescribing the drug that will minimize patients' out-of-pocket cost, (b) importance of prescribing the drug with the lowest total cost, (c) perceived responsibility to prescribe preferred medications, (d) awareness of the preferred medications on the insurer's formulary, (e) identity or name of the patient's insurer, and (f) use of personal digital assistant (PDA) or computer order entry at the time of prescribing.

Results

Survey Response

Of 690 total surveys mailed, 1 was returned from a nonphysician and 42 others were determined to have wrong addresses. Additionally, 36 addresses from nonresponding physicians were deleted because phone numbers were not available and the physicians could not be contacted. A total of 17 respondents were deleted from the denominator because these physicians either did not make any decisions about prescription drugs ($n=11$) or no longer practiced medicine ($n=6$). The final sampling frame included 594 physicians (Figure 2). The overall response rate, including 2 phone surveys, was 49.8% (296 of 594), including

172 of 384 (44.8%) physicians from Minnesota, 123 of 210 (58.6%) physicians from North Dakota, and 1 physician who did not indicate the state in which he or she practiced medicine.

Characteristics of respondents are shown in Table 2. The age and sex of responding physicians in this sample were similar to national averages.²⁵ Of 284 respondents who reported the number of formularies from which they prescribe, 34 (12.0%) reported prescribing from 0 to 1 formularies, 56 (19.7%) from 2 to 5 formularies, 74 (26.1%) from 6 or more formularies, and 120 (42.3%) from an unknown number of formularies.

Physicians' Opinions About Prescribing, Drug Costs, and Prescribing Challenges

According to the survey, 82% of the responding physicians agreed that it was important to prescribe the drug with the lowest total cost (Table 3). Although an overwhelming majority (93.5%) of physicians believed that it was their responsibility to prescribe drugs that would minimize their patients' copayments, only 33.3% believed that it was their responsibility to prescribe preferred formulary medications.

More than one-third (35.4%) of the physicians indicated that they were often or always aware of the identity of their patient's insurer. However, fewer physicians indicated awareness of list

TABLE 2 Physician and Practice Characteristics

Characteristic (n) ^a	
Mean (SD) age in years (n = 283)	48 (9)
Mean (SD) prescriptions per day (n = 291)	21.96 (17.8)
	% (n)
Male gender (n = 288)	68.1% (196)
Physician Specialty (n = 294)	
Generalist	73.1% (215)
Specialist	26.9% (79)
Practice Location (n = 271)	
Urban	71.3% (194)
Minnesota	70.0% (112)
North Dakota	73.9% (82)
Rural	28.3% (77)
Minnesota	30.0% (48)
North Dakota	26.1% (29)
Practice Size (n = 283)	
Small (1-4 physicians)	15.2% (43)
Medium (5-150 physicians)	60.8% (172)
Large or very large (more than 150 physicians)	24.0% (68)
Information Technology and Formularies	
Use of computer order entry ^b (n = 290)	39.3% (114)
Use of PDA for prescribing ^b (n = 289)	33.9% (98)
Use of Internet when prescribing ^c (n = 295)	22.4% (66)
Use of no information technologies ^d	31.1% (88)
Uses any information technology (n = 286)	69.2% (198)
Number of formularies prescribed from (n = 284)	
0-1	12.0% (34)
2-5	19.7% (56)
6 or more	26.1% (74)
Unknown	42.3% (120)

^aNumber of responses to the item of interest (n) varies because of missing data or nonresponse. Percentages do not always sum to 100% because of rounding.

^bPercentages of respondents answering "yes" (binary item, yes/no) when asked, respectively, "Do you use computer order entry when prescribing?" and "Do you use PDA when prescribing?"

^cPercentage of respondents answering 4 (often) or 5 (always) when asked "When writing prescriptions, how often do you use the following resources for information about prescription drugs?"

^dRepresents the percentage of respondents who did not use any information technology. Defined as responses of "no" for use of PDA and use of computer order entry, and Likert scale response of "never," "rarely," or "sometimes" for use of Internet services.

PDA = personal digital assistant.

price for the medication (25.8%), the preferred medications on the insurer's formulary (11.9%), the patient's pharmacy benefit structure (9.9%), or the required prescription copayments (12.2%). When asked how often they used various technologies when prescribing, 29.3% of respondents reported using a handheld device or PDA, 22.4% reported using the Internet, and 35.9% reported using handbooks or printed materials often or always (Table 3). When asked in binary fashion (yes/no) whether

they use a PDA or computer order entry when prescribing, 33.9% of respondents reported using a PDA and 39.3% reported using computer order entry (Table 2). Internal consistency (reliability) among all Likert scale-type responses was considered good (Cronbach's alpha = 0.82).

The mean number of prescriptions written per day among surveyed physicians was 22 (SD 17.8, data not shown). According to the survey, 89% of physicians reported being contacted in a typical day of practice to change a prescription from a non-formulary or nonpreferred drug to a formulary or preferred drug. Furthermore, physicians reported receiving, on average, 2.7 contacts per day (an estimated 12.2% of daily prescriptions) from a pharmacist or patient to change the prescription from a nonpreferred to a preferred drug. Two-thirds of physicians reported that prescriptions were changed to the preferred drugs in these instances. Only 16.7% of the physicians (n = 48) provided comments about formulary compliance. Reported challenges included time spent by physicians taking calls from patients or pharmacists (n = 5), lack of reimbursement for this time spent (n = 4), difficulty in retrieving up-to-date formulary information (n = 11), lack of formulary information (n = 16), and formulary organization not by diagnosis (n = 1).

Physicians' Opinions About Prescribing, Demographics, and Information Technology Use

Table 4 contains descriptive information for key outcome variables (opinions about responsibility to minimize patient out-of-pocket cost and total cost, awareness of formulary medications, and perceived responsibility to prescribe formulary medications) and predictor variables, including demographics and use of information technology. Female physicians were more often aware (17.4%) of the preferred medication on a patient's insurer's formulary than were male physicians (9.3%, $P = 0.048$). Physicians not using a PDA when prescribing were more likely to agree that it was important to prescribe the drug with the lowest total cost than were physicians who used a PDA (85.5% vs. 74.5%, $P = 0.023$). With that exception, use of information technology, including PDA, Internet, and computer order entry, was not significantly related to any of the key outcome measures. The percentages of physicians reporting awareness of the medications on a patient's formulary were 13.3% and 11.6% for those who answered "yes" when asked whether they use a PDA or computer order entry, respectively; 13.6% for those who reported using the Internet often or always; and 13.6% for those not using any information technology (comparison of those using ≥ 1 vs. 0 technologies $P = 0.477$). Physician specialty (generalist vs. specialist) also was not related significantly to any of the key outcome measures.

Physician Specialty

Statistically significant differences between physician specialty and other variables are reported in Table 5. Generalists were

TABLE 3 Distribution of Physician Responses to Survey Items

Survey Item	Strongly Disagree or Disagree ^a % (n)	Neutral ^a % (n)	Agree or Strongly Agree ^a % (n)
The following statements refer to out-of-pocket costs (what the patient pays) or to the total costs of prescription drugs. To what extent do you agree or disagree with each of the following statements? (1 = strongly disagree to 5 = strongly agree)			
When choosing among equally effective and safe medications, it is important for me to prescribe the drug that will minimize my patient's out-of-pocket costs. (n = 292) ^b	3.1% (9)	3.4% (10)	93.5% (273)
It is important for me to discuss out-of-pocket medication costs with my patients. (n = 291)	8.2% (24)	18.6% (54)	73.2% (213)
It is important for me to discuss total costs of medications (not just out-of-pocket costs) with my patients. (n = 291)	12.7% (37)	33.7% (98)	53.6% (156)
When choosing among equally effective and safe medications, it is important for me to prescribe the drug that has the lowest total costs. (n = 291)	4.8% (14)	13.4% (39)	81.8% (238)
When choosing among equally effective and safe medications, I am more concerned with choosing the drug requiring the lowest out-of-pocket cost, than choosing the drug with the lowest total cost. (n = 289)	12.5% (36)	32.2% (93)	55.4% (160)
It is my responsibility to prescribe "preferred" (formulary) medications. (n = 288)	32.3% (93)	34.4% (99)	33.3% (96)
Please indicate how often you are personally aware of the following when you are writing a prescription: (1 = never to 5 = always)	Never or Rarely^c % (n)	Sometimes^c % (n)	Often or Always^c % (n)
The identity or name of your patient's insurer (n = 294)	37.8% (111)	26.9% (79)	35.4% (104)
The "preferred" medications on your patient's insurer's formulary (n = 294)	60.5% (178)	27.6% (81)	11.9% (35)
Your patient's pharmacy benefit structure (i.e., 3-tier, coinsurance) (n = 294)	71.1% (209)	19.0% (56)	9.9% (29)
Your patient's required prescription copayments (n = 294)	61.6% (181)	26.2% (77)	12.2% (36)
The list price of the medication (n = 295)	42.4% (125)	31.9% (94)	25.8% (76)
When writing prescriptions, how often do you use the following resources for information about prescription drugs? (1 = never to 5 = always)			
A handheld device or PDA (e.g., a Palm Pilot) (n = 294)	60.9% (179)	9.9% (29)	29.3% (86)
The Internet (n = 295)	57.6% (170)	20.0% (59)	22.4% (66)
Handbooks or printed materials (n = 295)	32.9% (97)	31.2% (92)	35.9% (106)

^a The response scale for these items ranged from strongly disagree (1) to strongly agree (5). Agreement is defined as a score of 4 or 5.

^b Number of responses to the item of interest (n) varies because of missing data or nonresponse.

^c The response scale for these items ranged from never (1) to always (5). Often or always is defined as a score of 4 or 5.

PDA = personal digital assistant.

more often aware of the patient's insurer than were specialists (41.1% vs. 19.2%, $P < 0.001$), more often used a PDA when writing a prescription (38.9% vs. 21.1%, $P = 0.005$) and more frequently reported being introduced to cost-effective prescribing during residency training (49.8% vs. 33.8%, $P = 0.018$). Conversely, when writing prescriptions specialists were more likely than generalists to report using the Internet or handbooks often or always (Internet: 33.3% vs. 18.1%, respectively, $P = 0.006$; handbooks: 45.6% vs. 32.2%, respectively, $P = 0.035$).

Of the comparisons between Minnesota physicians versus North Dakota physicians on key outcome variables, only 1 was statistically significant. Use of computerized order entry at the time of prescribing was more common in Minnesota (47.3%) than in North Dakota (28.3%, $P = 0.001$).

Discussion

Our findings have implications for patients, physicians, and health plans. A vast majority of the physicians in this study

believed that it was important to prescribe the drug that would lower total costs as well as patients' copayments. However, only a minority of physicians believed that it was their responsibility to prescribe preferred medications.

Physicians' opinions about prescribing and drug costs as reported in our study were similar to results of previous studies conducted with physicians in California.²⁻⁴ However, compared with the California studies, a higher percentage of physicians in our study were generally unaware of determinants of a patient's prescription copayments. This lack of awareness might make prescribing in 3-tier formulary environments even more challenging.²⁻⁴ In our study, 35% and 12% of physicians reported being often or always aware of a patient's insurer and preferred formulary options, respectively. In the California study, 53% and 33% of physicians reported being familiar most or all of the time with the patient's insurer and preferred formulary options, respectively.³ Several factors could contribute to this finding. First, physicians in our study prescribed from more formularies.

TABLE 4 Key Opinion Measures by Demographic Characteristics and Use of Information Technologies^a

	When choosing among equally effective and safe medications, it is important for me to prescribe the drug that will minimize my patient's out-of-pocket costs ^b % (n)	When choosing among equally effective and safe medications, it is important for me to prescribe the drug that has the lowest total costs ^b % (n)	I am personally aware of the "preferred" medications on the patient's insurer's formulary ^c % (n)	It is my responsibility to prescribe "preferred" formulary medications ^b % (n)
Age Group (Years)				
Younger than 35	89.7% (26)	93.1% (27)	10.3% (3)	37.9% (11)
35-50	94.1% (128)	77.9% (106)	12.4% (17)	26.7% (36)
Older than 50	93.0% (107)	81.6% (93)	12.2% (14)	38.9% (44)
P values	0.683	0.164	0.953	0.101
Sex				
Male	93.8% (182)	81.9% (158)	9.3% (18)	30.5% (58)
Female	92.3% (84)	80.2% (73)	17.4% (16)	37.4% (34)
P values	0.635	0.740	0.048	0.253
Physician Specialty				
Generalist	94.0% (202)	83.2% (178)	12.6% (27)	35.9% (76)
Specialist	92.0% (69)	77.3% (58)	10.3% (8)	25.7% (19)
P values	0.556	0.260	0.583	0.110
Use of Technology When Prescribing				
Uses PDA ^d	90.8% (89)	74.5% (73)	13.3% (13)	29.9% (29)
Does not use PDA ^d	94.6% (177)	85.5% (159)	11.1% (21)	34.8% (64)
P values	0.218	0.023	0.592	0.408
Uses Internet ^e	90.6% (58)	78.1% (50)	13.6% (9)	28.1% (18)
Does not use Internet ^e	94.3% (214)	82.7% (187)	11.5% (26)	35.0% (78)
P values	0.297	0.399	0.630	0.306
Uses computer order entry ^f	93.7% (104)	82.9% (92)	11.6% (13)	27.5% (30)
Does not use computer order entry ^f	93.1% (163)	82.2% (143)	11.4% (20)	37.0% (64)
P values	0.855	0.880	0.950	0.100
Uses at least 1 information technology ^g	93.3% (182)	80.5% (157)	10.7% (21)	30.6% (59)
Does not use any information technology ^g	93.1% (81)	86.1% (74)	13.6% (12)	40.0% (34)
P values	0.943	0.264	0.477	0.125

^aStatistical significance assessed using Pearson chi-square test. P values represent comparisons between groups shown in rows. Number of responses to the item of interest (n) varies because of missing data or nonresponse.

^bThe response scale for these items ranged from strongly disagree (1) to strongly agree (5). Agreement is defined as a rating of 4 or 5.

^cThe response scale for this item ranged from never (1) to always (5). A positive answer is defined as a rating of 4 or 5.

^dRespondents answering "yes" or "no" (binary item, yes/no) when asked "Do you use PDA when prescribing?"

^eThe response scale for this item ranged from never (1) to always (5). A positive answer (i.e., uses Internet) is defined as a rating of 4 or 5.

^fRespondents answering "yes" or "no" (binary item, yes/no) when asked "Do you use computer order entry when prescribing?"

^g"Uses at least 1 information technology" was defined as a response of "yes" for use of PDA or use of computer order entry or Likert scale response of often (4) or always (5) for use of Internet services. "Does not use any information technology" was defined as responses of "no" for use of PDA and computer order entry, and Likert scale response of "never," "rarely," or "sometimes" for use of Internet services.

PDA=personal digital assistant.

TABLE 5 Physician Specialty and Awareness of Pharmacy Benefit Plan and Use of Prescription Drug Information

	Generalist % (n) ^a	Specialist % (n) ^a	P Value ^b
The identity or name of your patient's insurer	41.1% (88)	19.2% (15)	0.001
The "preferred" medications on your patient's insurer's formulary	12.6% (27)	10.3% (8)	0.583
Being introduced to cost-effective prescribing in residency training	49.8% (103)	33.8% (25)	0.018
Used the Internet when writing a prescription ^c	18.1% (39)	33.3% (26)	0.006
Used handbooks when writing a prescription ^c	32.2% (69)	45.6% (36)	0.035
Used a PDA when writing a prescription ^d	38.9% (82)	21.1% (16)	0.005

^aNumber of responses to item of interest (n) varies because of missing data or lack of response.

^bStatistical significance assessed using Pearson chi-square test.

^cPercentage of respondents answering 4 (often) or 5 (always) when asked "When writing prescriptions, how often do you use the following resources for information about prescription drugs?"

^dPercentage of respondents answering "yes" (binary item, yes/no) when asked "Do you use PDA when prescribing?"

PDA = personal digital assistant.

Only 12% of physicians in the present study reported prescribing from 0 to 1 formularies, 19% reported prescribing from 2 to 5 formularies, and 26% reported prescribing from 6 or more formularies (Figure 3).³ In California, where staff-model HMOs comprise a substantial market share, a larger percentage of physicians (40%) reported prescribing from 0 to 1 formularies; 14% of the California study physicians reported prescribing from 2 to 5 formularies, and 19% reported prescribing from 6 or more formularies.⁴ Second, it is possible that variables not measured in previous research²⁻⁴ or in the present study (e.g., frequency of insurance provider changes or formulary updates) may have influenced awareness of patients' insurers and preferred formulary options.

Our survey data are consistent with Shrank et al.'s data in several respects.^{2,3} Specifically, in the present study, generalists were more aware of a patient's formulary than were specialists. Shrank et al. reported that generalists were twice as likely as specialists to report familiarity with patients' formularies.² Similarly, we found that generalists were more likely than specialists to report that they were aware of the identity of the patient's insurer. Additionally, 60%-70% of physicians in both surveys reported that they never or rarely are aware of a patient's required prescription copayment despite a majority (91% in Shrank et al., 94% in the present study) agreeing that it was important to prescribe drugs that would minimize copayments. It appears that more effective strategies to close the gap between prescribers' stated desire to minimize patient copayments and the ability to do so are needed.

Prescribing from multiple formularies will likely make it more challenging for physicians to be aware of patient prescription copayments because of differences among drug plans. Our findings support the premise that physicians practicing in different parts of the country face a variety of challenges while prescribing in a multi-tier formulary environment. Consequently, a larger, more representative nationwide study to determine the challenges

physicians may face when prescribing in environments with multi-tiered drug benefit plans would be useful.

Eighty-nine percent of the physicians reported being contacted in a typical day of practice to change a prescription from a non-formulary or nonpreferred drug to a formulary or preferred drug. Pharmacists play a key role in lowering prescription copayments for patients with multi-tier copayment plans.^{2,3,26-28} However, a pharmacist's role in this process needs to be reevaluated in terms of the nationwide pharmacist shortage, which is more severe in rural areas.²⁹⁻³² Paying pharmacists for time spent calling physicians to request a change in prescription to a more cost-effective drug has been proposed. Whether this strategy significantly increases the use of more cost-effective medication requires further study.^{33,34}

Limitations

Our study has several limitations. First, this study reflects the perceptions of members of the Minnesota Medical Association and the North Dakota Medical Association, who may not represent physicians who practice elsewhere. Second, we do not know the opinions of about half of the recipients of the survey who did not respond, and we have no information about these nonrespondents. However, we note that a study conducted by Shrank et al.³ using a similar survey instrument had a nearly identical response rate (49.6%), and a telephone follow-up of nonresponders determined that the nonresponders and responders were similar.

Third, as with any survey, our findings may be subject to a nonresponse and social desirability response bias. In particular, the wording of both the survey introduction ("challenges you may be facing with Medicare Part D") and the heading of the survey section that was the source of most of the items reported here ("prescribing challenges") may have encouraged responses from physicians experiencing prescribing difficulties, especially with Medicare Part D.

FIGURE 3 Percentage of Physicians and Number of Formularies Used: Minnesota and North Dakota vs. California

^aStaff-model HMOs (with 1 drug formulary for the prescriber) comprise a substantial market share in California.

Sources: Shrank WH, Asch SM, Joseph GJ, et al. Physicians' perceived knowledge of and responsibility for managing patients' out-of-pocket costs for prescription drugs.³; Shrank WH, Joseph GJ, Choudry NK, et al. Physicians' perceptions of relevant prescription drug costs: Do costs to the individual patient or to the population matter most?⁴

Conclusion

Although surveyed physicians believed that it was important to prescribe drugs that would minimize patients' prescription copayments and total drug costs, they were often unaware of the details needed to enable them to do so. Making this information more available to physicians has the potential to increase prescribing of medications with lower copayments and to increase patient access to needed medications.

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