RESEARCH

Pharmacy Participation and Claim Characteristics in the Wisconsin Medicaid Pharmaceutical Care Program from 1996 to 2007

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ABSTRACT

BACKGROUND: Under the 1995 Wisconsin Act 27, the biennial budget, Wisconsin Medicaid was required to develop an incentive-based pharmacy payment system for pharmaceutical care (PC) services. Started on July 1, 1996, the Wisconsin Medicaid Pharmaceutical Care Program (WMPCP) is the longest currently ongoing Medicaid program to compensate pharmacists for nondispensing services. The program reimburses pharmacies for providing PC services that increase patient compliance or prevent potential adverse drug problems by paying an enhanced PC dispensing fee. Pharmacists can bill for PC services provided to Wisconsin Medicaid fee-for-service and SeniorCare (i.e., state prescription drug assistance program for low-income seniors) beneficiaries.

OBJECTIVES: To examine trends in (a) the number of pharmacies participating in the WMPCP and the intensity of participation among participating pharmacies; and (b) frequencies of reason, action, result, and level-of-service (time) codes associated with PC service claims from July 1, 1996, through June 30, 2007, which represents Wisconsin state fiscal years (SFYs) 1997 through 2007.

METHODS: A retrospective, longitudinal, and descriptive research design was used to analyze all paid claims for PC services provided to Wisconsin Medicaid fee-for-service and SeniorCare recipients during SFYs 1997 through 2007. The total number of paid PC claims and the average number of claims paid per pharmacy were examined to determine trends in pharmacy participation. Mean annual reimbursement amounts for PC per claim and per pharmacy were calculated. Reason, action, result, and level-of-service (time) codes that appeared in the claims were grouped into categories and analyzed to characterize the total number of claims paid overall and per SFY.

RESULTS: During the study period, one-half (n = 601) of the approximately 1,200 licensed pharmacies in the state of Wisconsin were paid for a claim through the WMPCP. However, intensity of participation in the WMPCP was low, with 57% of all participating pharmacies being paid for 10 or fewer PC claims and 19% paid for only 1 PC claim over the 11-year study period. The growth in claims per year coupled with smaller growth in the number of participating pharmacies resulted in a trend of growth in the mean number of claims per participating pharmacy in the program. The proportion of total WMPCP claims accounted for by the top 10 pharmacies with the highest volume of PC claims varied from 46.6% to 80.2% per year. Patient behaviors (e.g., early or late refills) and drug use issues/problems (e.g., patient complaints or symptoms) were the most common reasons for pharmacists to provide PC services (62% of all PC claims), although drug choice reasons (e.g., product selection opportunity) were more common after 2004. The majority (55.1%) of PC services took 15 minutes or less of pharmacists' time. The total dollar amount paid to pharmacies for PC services was $876,822 between SFYs 1997 and 2007, with an overall mean of $1,459 paid per participating pharmacy.

CONCLUSIONS: Trends in pharmacy participation and claims volume showed growth, albeit limited, in PC program participation with a majority of paid claims dealing with patient behaviors and drug use issues or problems that consumed a small amount of pharmacists' time (15 minutes or less). The intensity of participation (claims per pharmacy) increased over time, suggesting that some pharmacies may have developed effective systems for participating and successfully submitting claims to WMPCP for enhanced dispensing fees. Further evaluation of the impact and implications of this program for patients, pharmacists, and the state is needed to gauge overall program success and provide evidence or guidance for continued or expanded PC initiatives.

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What is already known about this subject

- As part of evolutionary changes in pharmacy practice, programs and initiatives have been developed to allow pharmacists to intervene in drug therapy and patient care beyond standard dispensing and counseling services.
- Christensen et al. (2000) found that the average amount of time spent providing a PC service to Medicaid beneficiaries patronizing community pharmacies was 7.5 minutes, with 94% of PC interventions taking less than 20 minutes.
- No previous studies have performed longitudinal examinations of pharmacy participation and characteristics of claims for publicly funded pharmaceutical care programs.
- The Wisconsin Medicaid Pharmaceutical Care Program (WMPCP) reimburses pharmacies for providing PC services that increase patient compliance or prevent potential adverse drug problems by paying an enhanced PC dispensing fee.

What this study adds

- The WMPCP is one of the earliest and longest-established publicly funded programs that pay pharmacists for nondispensing services.
- From state fiscal years (SFYs) 1997 through 2007, one-half (n = 601) of the approximately 1,200 licensed pharmacies in the state of Wisconsin were paid for a claim through the WMPCP. Active pharmacy participation in the WMPCP was low, with 57% of all participating pharmacies paid for 10 or fewer PC claims and 19% paid for only 1 PC claim over the duration of the study period.
- Patient behaviors and drug use issues or problems were the most common reasons for pharmacists to provide PC services (62% of all claims). More than one-half (55.1%) of PC services consumed 15 minutes or less of pharmacists' time.

As part of evolutionary changes in pharmacy practice, programs and initiatives have been developed to allow pharmacists to intervene in drug therapy and patient care beyond standard dispensing and counseling services, commonly referred to as "pharmaceutical care" (PC). Previous studies have described pharmacy participation and outcomes of publicly funded programs that pay pharmacists for non-dispensing services, although these evaluations assessed 2 or fewer years of data.[1-3] Barnett et al. (2009) studied PC interventions provided by community pharmacists in a multistate, multipayer medication therapy management (MTM) program over the 7-year period from 2000 through 2006.[4] In another longitudinal analysis, Ramalho de Oliveira et al. (2010) reported outcomes including pharmacist-estimated cost savings from MTM services provided by pharmacists in an integrated health system for a 10-year period ending with September 2008.[5] However, no previous studies have performed longitudinal examinations of pharmacy participation and outcomes for publicly funded PC programs. In the present study, we describe the experience from one of the earliest and longest ongoing programs, the Wisconsin Medicaid Pharmaceutical Care Program (WMPCP).

Description of the WMPCP

On July 1, 1996, the state of Wisconsin began an innovative, incentive-based pharmacy payment system for patient care services provided by pharmacists.[6,7] WMPCP established payments to pharmacies for PC services provided to Wisconsin Medicaid fee-for-service recipients. WMPCP was the first fully implemented state-funded program to encourage PC by providing financial incentives to pharmacists for providing cognitive services. To comply with existing federal policies (that did not include pharmacists as reimbursable providers), the payments were implemented as enhanced dispensing fees, whereby a claim submitted for a drug that had an associated PC service contained a single dollar amount that reimbursed for the drug cost, the dispensing fee, and the PC service. To help ensure budget neutrality required for the program's federal waiver, every prescription claim paid by Wisconsin Medicaid was reduced by 50 cents, which was deducted from the drug cost reimbursement component; the $4.69 dispensing fee was not affected.[6]

A modified version of the National Council for Prescription Drug Programs (NCPDP) Professional Pharmacy Service codes is used in billing for services in the WMPCP. The billing codes include an 8-digit string, with 2 digits each representing the reason, action, result (outcome), and level of service (time) associated with the PC service provided by the pharmacist. Reason codes describe the prescription, drug, or patient-related problem being addressed, such as early or late refills, drug-drug interactions, and patient complaints. Action codes reflect what was done by the pharmacist to intervene and correct the problem, including contacting the patient or the prescriber. Result codes describe the outcome that resulted from the PC intervention, such as providing information to the patient or changing the drug dispensed. Descriptions of the various codes and payable combinations of reason, action, and result codes are available for pharmacists to reference.[8]

Level-of-service codes define the amount of time spent providing the PC service, with levels 1 through 5 reflecting 0-5 minutes, 6-15 minutes, 16-30 minutes, 31-60 minutes, and 61 or more minutes, respectively. The current maximum allowable reimbursement amount for billable PC codes (as of January 5, 2012) associated with levels 1 through 4 are $9.45, $14.68, $22.16, and $40.11, respectively.[8] Pharmacies submit claims for PC services at their usual and customary charge for each service and are paid those charges up to the maximum allowable reimbursement amounts. The reimbursement amounts for PC services have remained essentially unchanged since the inception of the program. The level 5 enhanced dispensing fee was planned as a per-minute amount with a cap (i.e., a maximum reimbursement level) but was never implemented; therefore, level 5 claims are paid at the same amount as level 4 claims.

There are various limits for billing in the WMPCP for PC services. Only 1 PC service fee is allowed per member per pharmacy provider per day. Additionally, some PC services have maximum yearly billing frequencies and maximum allowable reimbursement amounts payable regardless of the level of service (time) billed.[8] For example, a common limit on enhanced fees is a cap on payment for some services at the level 3 (16-30 minutes) enhanced dispensing fee ($22.16), such as contacting a physician to change a drug dose or to address patient side effects; thus, reimbursement does not increase even if more time is spent performing the service.

Pharmacies are required to establish and maintain a "PC profile" documentation system to hold information related to the medications and services provided for each patient. This information must be retrievable and provided if requested by Wisconsin Medicaid; failure to provide documentation may result in reversal of the PC-enhanced dispensing fee.[8]

Pharmacist Training

Prior to the start of the WMPCP in 1996, multiple full-day training sessions were offered to pharmacists throughout the state. Staff from the Wisconsin Pharmacy Association (now Pharmacy Society of Wisconsin) teamed with Medicaid program staff to provide these sessions. Information was provided on legislative efforts taken to secure the project, federal and state payment standards, and hands-on instruction for claim submission. Additional training sessions were offered after the start of the program and after major changes to the program.[7] Special presentations for long-term care pharmacists and for special services such as asthma management also were provided.

TABLE 1 Estimated Number of Individuals Eligible for WMPCP Services by State Fiscal Year[a]

SFY	Total Wisconsin Medicaid Beneficiaries	Estimated Wisconsin SeniorCare Beneficiaries[b]	Ineligible Medicare/ Medicaid Dual-Eligibles	Wisconsin Medicaid Managed Care (%)	Total Estimated WMPCP-Eligible Enrollees
1997	422,870[c]	n/a	n/a	48.6[c]	217,355
1998	397,295[c]	n/a	n/a	49.1[c]	202,223
1999	563,104	n/a	n/a	51.9	270,853
2000	619,128	n/a	n/a	54.8	279,846
2001	673,537	n/a	n/a	55.4	300,398
2002	776,638	n/a	n/a	55.0	349,487
2003	903,902	90,000	n/a	51.5	482,042
2004	971,210	90,000	n/a	50.3	527,421
2005	1,016,071	90,000	n/a	50.4	548,611
2006	1,042,340	90,000	78,665	52.1	504,710
2007	1,040,471	90,000	77,718	53.8	486,372

[a]For each year, the total estimated number of WMPCP-eligible enrollees was calculated as follows: (total Wisconsin Medicaid beneficiaries + number of SeniorCare beneficiaries − ineligible Medicare/Medicaid dual-eligibles) x (1 − % managed care). For all SFYs except 1997 and 1998, Medicaid data were obtained from the Centers for Medicare and Medicaid Services MSIS tables.[9]

[b]SeniorCare beneficiaries became eligible to receive WMPCP services beginning in SFY 2003. Medicare/Medicaid dual-eligibles became ineligible to receive WMPCP services beginning in SFY 2006. An estimate of 90,000 SeniorCare beneficiaries was used for all SFYs beginning in 2003 because annual enrollment data were unavailable.

[c]Source: The National Pharmaceutical Council. Pharmaceutical Benefits Under State Medical Assistance Programs. 1998-1999.[10-11]

MSIS = Medicaid Statistical Information System; n/a = not applicable; SFY = state fiscal year; WMPCP=Wisconsin Medicaid Pharmaceutical Care Program.

Individuals Served by WMPCP

The estimated number of individuals eligible to receive services under the WMPCP program by Wisconsin state fiscal year (SFY) is presented in Table 1. (Wisconsin SFYs begin on July 1 and end on June 30.) The WMPCP program is available to Wisconsin Medicaid recipients receiving care under the fee-for-service system. PC services provided to patients enrolled in Medicaid managed care plans are not eligible for WMPCP reimbursement unless the managed care plan agrees to the WMPCP provisions. Claims for services provided through managed care programs are not available via the Medicaid database and are therefore outside the scope of this study. Over the study period, the percentage of Wisconsin Medicaid patients enrolled in managed care plans increased from 48.6% in SFY 1997 to 53.8% in SFY 2007.[9-11]

Starting September 2002 (SFY 2003), approximately 90,000 seniors enrolled in the Wisconsin SeniorCare program became eligible to receive PC services.[12] SeniorCare is a prescription drug assistance program for low-income residents aged 65 years or older who do not meet Medicaid eligibility criteria.[13] A federal waiver established SeniorCare as a source of prescription drug coverage in lieu of Medicare Part D.

Beginning January 1, 2006 (SFY 2006), elderly beneficiaries covered under both Medicare and Medicaid (i.e., dual-eligible beneficiaries) obtained prescription drug coverage and MTM services from their Medicare Part D plans; thus, any claims for PC services would fall under their Part D plans and not Medicaid. The coverage of dual-eligibles by Part D plans affected approximately 78,000 beneficiaries in Wisconsin. Because slightly more than 50% of Medicaid beneficiaries were enrolled in managed care plans, approximately 40,000 Medicaid fee-for-service beneficiaries became ineligible for WMPCP services.[9]

Changes to the Program

Since its inception, there have been several changes to the WMPCP (Table 2). Initially, in 1996, pharmacists were required to submit paper claims for reimbursement. In September 1999 (SFY 2000), a point-of-service (POS) system was adopted for claims submission. The POS system allowed all service claims to be billed electronically, online, in real-time using the NCPDP billing code structure.

In February 2001 (SFY 2001), a prospective drug utilization review (PDUR) system was instituted, independent of the WMPCP, to provide feedback to pharmacists about potential problems with patients' drug therapies during the electronic drug claims submission and adjudication process. The goal of the PDUR system is to screen *select* drug categories for clinically significant drug therapy problems and alert the pharmacist before a prescription is dispensed. Because the PDUR system screens only select drug categories and drug issues, this system is not a replacement for pharmacist medication verification and profile review that are performed for all prescriptions. In the event of a PDUR alert, the pharmacist must either override the alert or take action to solve the problem identified in the PDUR alert in order to process the pharmacy claim. Based on the action taken in response to the PDUR alert, a pharmacist may bill Medicaid for a PC service. However, according to WMPCP program guidelines, the action taken in response to a specific PDUR alert may not always be reimburseable.[8] Since the PDUR system screens only select drug categories, the PDUR alerts may help pharmacists identify similar drug therapy problems in other drug categories for which PC services can be reimbursed.

TABLE 2 Timeline of Changes to the WMPCP Program

July 1996 (SFY 1997)	WMPCP initiated as an incentive-based pharmacy payment system for pharmaceutical care services.		
September 1999 (SFY 2000)	Point-of-service system adopted, allowing pharmacy claims to be billed electronically, online, in real-time.		
July 1, 2000 (SFY 2001)	Enhanced dispensing fees for pharmaceutical care services increased.		
	Time	**Originally Implemented Maximum Allowable Reimbursement Rate ($) 1996-2000**	**Revised Maximum Allowable Reimbursement Rate ($) 2000 to present**
	Level 1: 0-5 minutes	9.08	9.45
	Level 2: 6-15 minutes	14.11	14.68
	Level 3: 16-30 minutes	21.30	22.16
	Level 4: 31-60 minutes	38.55	40.11[a]
	Level 5: More than 60 minutes	Manual pricing	40.11[a]
February 2001 (SFY 2001)	Prospective drug utilization review (DUR) system instituted to provide feedback about potential problems with patients' drug therapies.		
September 2002 (SFY 2003)	Wisconsin SeniorCare initiated, increasing the number of beneficiaries eligible to receive services by approximately 90,000.[12]		
January 2006 (SFY 2006)	Medicare Part D initiated, reducing the number of Medicaid fee-for-service beneficiaries eligible for services by approximately 40,000.[9]		

[a]*Maximum allowable reimbursement levels for some services are limited at the level 3 rate ($22.16).*
SFY = state fiscal year; WMPCP = Wisconsin Medicaid Pharmaceutical Care Program.

Objectives

The goal of the present study was to examine trends in paid WMPCP service claims between 1996 and 2007. The first objective was to examine the number of pharmacies participating in the WMPCP and the intensity of participation among participating pharmacies. The second objective was to examine the characteristics of service claims and the frequencies of reason, action, result, and level-of-service (time) codes appearing in claims.

Methods

Design

A retrospective, longitudinal, and descriptive research design was used for collecting and analyzing data. The time period studied was July 1, 1996, through June 30, 2007, which represents Wisconsin SFYs 1997 through 2007.

Data

Data were obtained from the Wisconsin Department of Health and Family Services (DHFS) for every PC service claim paid by Wisconsin Medicaid through WMPCP to pharmacies between SFYs 1997 and 2007. Each claim included the pharmacy name and Medicaid provider identification number; date of service; the NCPDP codes describing the reason, action, result, and level of service (time) for the PC service provided; and the actual dollar amount paid by Medicaid to the submitting pharmacy. Based on the date of service, the SFY was assigned to each claim. Separate pharmacy provider identification files were obtained from the DHFS and the Wisconsin Department of Regulation and Licensing to link pharmacy names, addresses, and provider identification numbers to the claims data. Some pharmacies had multiple Medicaid provider identification numbers due to changes in ownership and other reasons. Provider address information was used in these cases to create a "site" variable based on location to remove pharmacy site duplication and to designate provider pharmacies that participated in the program.

Data Analysis

To examine participation in the WMPCP, a summary file was created by aggregating the number of PC claims paid to each pharmacy over the duration of the study period. The summary file was organized with pharmacies as rows and with claim characteristics as columns. The total number of paid claims, participating pharmacy providers, and the average number of claims paid per pharmacy were determined for each SFY. Patterns in annual pharmacy participation were examined by creating indicator variables for participation in each year. Participation was defined as being paid for at least 1 claim in a year. Claims volume and participation rates for each year also were plotted to examine trends in participation. The participation indicator variable allowed determination of consecutive participation patterns among pharmacies and drop-out rates (pharmacies discontinuing participation) during the study years.

To examine characteristics of paid claims, we analyzed the data file to determine the total number of claims paid overall and for each SFY. The reason, action, result, and level-of-service (time) codes that appeared in the claims data were grouped into categories that were created by the authors (Table 3). Next, the numbers and proportions of claims in each category per SFY were determined. We plotted the proportions of reason, action, result, and time codes within categories to examine trends within the program.

Reason Code Categories. The 2-digit reason codes that

TABLE 3 *WMPCP Reason, Action, Result, and Time Code Categories*[a]

Reason Code Category	Descriptions of the Codes
Patient behaviors	Late refill; in-home medication management; suboptimal compliance; early refill; possible drug misuse
Drug choice	Product selection opportunity; therapeutic duplication; drug-drug interaction; suboptimal regimen; high dose; drug allergy; suboptimal dosage form; low dose; additive toxicity; unnecessary drug; excessive duration; excessive quantity; insufficient quantity; insufficient duration; IV drug incompatibility; missing information on prescription[b]
Drug use issues/problems	Patient complaint/symptom; side-effect precaution; chronic disease management—asthma; additional drug recommended; adverse drug reaction; new drug; medication therapeutic management—diabetes; patient request; drug reaction; physician requested information; iatrogenic[b]
Other	Forgery possible; laboratory test needed; lock-in recipient; new patient; ingredient duplication; drug-food precaution; drug-lab precaution; drug-tobacco precaution[b]
Action Code Category	
Patient contacted	Patient education; patient assessment; patient education (with early refills)[b]
Prescriber contacted	Physician contacted (prescriber consulted)
Therapeutic interchange	Therapeutic product interchange "requires prescriber authorization"[c]
Pharmacist alone	Medication review; coordination of care; recommend laboratory test; payer/processor contacted; pharmacist consult with other contact; medical literature search[b]
Result Code Category	
Patient information	Instructions understood; patient information supplied; patient information accepted[b]
Adjusted fill	Filled, different drug; filled, different directions; filled, different dose; filled, dose form changed; filled, different quantity; compliance aid developed (distribution system); not filled; physician changed medication; changed regimen[b]
Other[b]	Not specified; accepted by physician; filled; physician ok; not accepted laboratory request; unadjusted fill; filled, insignificant problem; recommendation to patient accepted; recommendation to physician not accepted; recommendation to patient not accepted; schedule changed by patients; drug therapy uncharged; follow-up report; compliance aid developed (patient recordkeeping); filled, insignificant problem; recommendation to patient accepted[b]
Time Code Category	
Level 1	0-5 minutes
Level 2	6-15 minutes
Level 3	16-30 minutes
Level 4	31-60 minutes
Level 5	More than 60 minutes

[a]*Reason, action, and result code categories created by authors.*

[b]*Codes in shaded text were deleted by the Wisconsin Department of Health and Family Services in 2001 (SFY 2002).*[14]

[c]*Requirement for prescriber authorization was added in 2001 (SFY 2002). Prior to this change, generic for brand substitution (e.g., atenolol for Tenormin) was not excluded.*

IV = intravenous; SFY = state fiscal year; WMPCP = Wisconsin Medicaid Pharmaceutical Care Program.

appeared in the claims were grouped into 4 general categories (Table 3). The first category was labeled "patient behaviors," which included reason codes for suboptimal compliance, early and late medication refills, and in-home medication management. The second category, "drug choice," consisted of reason codes for product selection opportunities, therapeutic duplications, and drug interactions. The third category was "drug use issues/problems," which included reasons related to patient complaints or symptoms. The last category was labeled "other" reasons, which included possible forged prescriptions and referrals for laboratory testing.

Action Code Categories. Action codes that appeared in the claims also were grouped into 4 general categories. "Patient contacted" included action codes for patient assessment and education. "Prescriber contacted" comprised the second category. The third category, "therapeutic interchange," represented pharmacist-initiated therapeutic product interchanges or substitutions that required prescriber authorization. Initial documentation included generic substitution, but beginning in 2001 (SFY 2002), "requires prescriber authorization" was added,[14] thereby restricting this category to therapeutic interchanges (e.g., generic simvastatin for brand atorvastatin). The fourth category, labeled "pharmacist alone," was composed of actions taken by the pharmacist including medication review, medical literature search, coordination of care, recommending laboratory testing, and contacting payers or processors (e.g., to investigate patient drug problems or claims rejections).

Result Code Categories. Result codes were grouped into 3 categories. The first category, "patient information," included codes for instructions understood by patients and patient information supplied. The second category was labeled "adjusted fill," which included dispensing a different drug or the same drug with different directions for use. The "other" category included a variety of result codes, such as not filling a prescription, dispensing an unadjusted prescription, nonspecified results, insignificant problem, acceptance or refusal of

TABLE 4 Pharmacy Participation and Reimbursement in the WMPCP by State Fiscal Year[a]

State Fiscal Year	Number of Pharmacy Providers Paid at Least 1 Claim	Number of Paid Claims	Mean [SD] Number of Claims Per Pharmacy	Mean [SD] WMPCP Payment Per Pharmacy ($)	Mean [SD] Payment Per Pharmaceutical Care Claim ($)
1997	155	1,439	9.3 [19.2]	138.06 [292.09]	14.87 [8.38]
1998	123	1,452	11.8 [23.9]	201.67 [458.51]	17.08 [9.90]
1999	73	806	11.0 [18.5]	206.68 [378.62]	18.72 [10.99]
2000	73	1,309	17.9 [57.7]	472.02 [2,138.87]	26.32 [12.89]
2001	169	3,233	19.1 [49.7]	391.27 [1,248.47]	20.45 [11.05]
2002	117	3,654	31.2 [95.5]	629.73 [2,105.50]	20.16 [10.18]
2003	108	7,600	70.4 [244.8]	1,495.43 [5,598.00]	21.25 [11.83]
2004	205	9,539	46.5 [202.0]	1,053.94 [5,778.09]	22.65 [12.85]
2005	209	9,742	46.6 [169.6]	1,028.58 [4,689.96]	22.07 [12.91]
2006	242	7,536	31.1 [98.3]	689.64 [3,250.58]	22.15 [12.98]
2007	185	5,233	28.3 [63.4]	523.31 [2,012.20]	18.50 [13.28]

[a]*The total dollar amount paid to pharmacies for PC services was $876,822 between SFYs 1997 and 2007, with an overall mean of $1,459 paid per participating pharmacy (n = 601 pharmacies).*

PC = pharmaceutical care; SD = standard deviation; SFY = state fiscal year; WMPCP = Wisconsin Medicaid Pharmaceutical Care Program.

TABLE 5 Distribution of WMPCP Claims by Pharmacy Providers: State Fiscal Years 1997-2007

Number of Paid Claims Per Pharmacy	Number of Pharmacies Paid for a Claim	Percentage of All Participating Pharmacies Paid for a Claim	Number of Paid Claims	Percentage of Paid Claims
1	114	19.0	114	0.2
2 to 5	150	25.0	453	0.9
6 to 10	77	12.8	598	1.2
11 to 20	85	14.1	1,283	2.5
21 to 50	70	11.6	2,354	4.6
51 to 100	34	5.7	2,455	4.8
More than 100	71	11.8	44,286	85.9
Total	**601**	**100.0**	**51,543**	**100.0**

WMPCP = Wisconsin Medicaid Pharmaceutical Care Program.

recommendations by the prescriber or patient, scheduling changed by patients, and follow-up report. By SFY 2001, the number of unique result codes that appeared in the claims data file each year decreased from 29 to 8. The reduction in result codes was caused by revisions made by the Medicaid program to definitions of results and codes for pharmacists to use when billing.[14]

WMPCP Reimbursement

We calculated the mean dollar amount paid per claim in each SFY using the dollar amount paid to the submitting pharmacy for each claim. We also determined the mean dollar amount paid to each participating pharmacy in each SFY by summing paid dollar amounts per claim within each pharmacy. Additionally, we determined the mean dollar amounts paid for the top 10 pharmacies submitting claims in each SFY. Data analysis was performed using SPSS for Windows version 17.0 (IBM SPSS, Armonk, NY).

Results

Trends in Pharmacy Participation and Claims

Table 4 summarizes the trends in the number of participating pharmacy providers and claims paid for SFYs 1997 through 2007. The number of pharmacies participating in the WMPCP in 2007 (n = 185) was larger than when the program started (n = 155), and a fitted line (not shown) shows a slight upward trend in the number of participating pharmacies. However, considerable fluctuations occurred in the annual numbers of participating pharmacies. Cumulatively, a total of 601 unique pharmacy sites (of the approximately 1,200 licensed pharmacies in Wisconsin) were paid for at least 1 PC claim during the study period.

Somewhat more consistency was seen in the trend of total number of claims paid per year. Substantial growth in the number of claims occurred between 1999 (806 paid claims) and the peak in 2005 (9,742 paid claims). After 2005, the number of paid claims decreased by 22.6% in 2006 and by another 30.6% in 2007.

The more consistent, strong growth trend in claims per year coupled with the irregular, lower growth in the number of participating pharmacies resulted in an increasing mean number of claims per participating pharmacy in the program to a peak of 70.4 in 2003 (Table 4). From 2004 through 2007, the number of claims per participating pharmacy decreased but remained higher than in the first 5 years of the program.

The total dollar amount paid to pharmacies for PC services was $876,822 between SFYs 1997 and 2007, with an overall

TABLE 6 Pattern of Pharmacy Participation in WMPCP by State Fiscal Year

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Pharmacies paid for claims	155	123	73	73	169	117	108	205	209	242	185
Paid for first claim	155	34	8	24	83	27	34	67	56	85	28
Paid for claim previous year	-	89	59	36	54	84	63	83	122	127	140
Paid for claim previous 2 years		-	45	32	28	38	53	51	63	90	77
Paid for claim previous 3 years			-	27	27	22	29	44	40	51	61
Paid for claim previous 4 years				-	22	21	18	26	34	35	34
Paid for claim previous 5 years					-	17	17	16	22	30	24
Paid for claim previous 6 years						-	15	15	14	19	21
Paid for claim previous 7 years							-	13	13	12	12
Paid for claim previous 8 years								-	12	11	10
Paid for claim previous 9 years									-	11	9
Paid for claim previous 10 years										-	9
Paid for claim previous 11 years											-
Paid for at least 1 claim this year and no subsequent years	32	31	16	12	46	22	17	64	74	102	-
General dropout rate (%)[a]	20.6	25.2	21.9	16.4	27.2	18.8	15.7	31.2	35.4	42.1	-
Paid for first claim this year and no subsequent years	32	10	3	7	30	10	8	32	31	37	-
Same year dropout rate (%)[b]	20.6	29.4	37.5	29.2	36.1	37.0	23.5	47.8	55.4	43.5	-

[a]*General dropout rate was calculated as the percentage of all pharmacies that participated in a given year with no claims in subsequent years.*
[b]*Same year dropout rate was calculated as the percentage of pharmacies paid for their first claim that year and with no claims in subsequent years.*
WMPCP = Wisconsin Medicaid Pharmaceutical Care Program.

mean of $1,459 paid per participating pharmacy (n = 601 pharmacies). The total amount paid to all pharmacies was lowest in SFY 1999 ($15,087) and highest in SFY 2004 ($216,058). The mean dollar amount paid per pharmacy grew from $138 in SFY 1997 to a maximum of $1,495 in SFY 2003 and then declined to $523 in SFY 2007 (Table 4).

The distribution of paid claims per participating pharmacy is highly skewed. Overall, more than 70% of all participating pharmacy sites were paid for 20 or fewer claims for the entire duration of the program, and 19.0% were paid for only 1 claim (Table 5). Conversely, 85.9% of paid claims were associated with a relatively small number of pharmacies (n = 71) that were paid for 100 or more PC claims. The top 2 pharmacy providers were paid for 9,389 and 4,098 PC claims, respectively. This pattern of a large number of claims paid to a small number of pharmacies was seen in each fiscal year.

Table 6 shows the patterns of pharmacy participation in WMPCP between 1997 and 2007. Only 9 pharmacy providers were paid for a claim in each SFY from 1997 through 2007. It was common for pharmacy providers to participate in the program for 1 year, receiving payment for an initial claim and being paid for no claims in subsequent years. Overall, of the 601 participating pharmacies, 37.9% participated in only a single year (inclusive of pharmacies new to the program in SFY 2007). The "same year dropout rate," calculated as the percentage of newly participating pharmacies paid for their *first* claim that year with no claims in subsequent years, peaked in 2005. In that year, 55.4% of pharmacies paid for their first claim did not participate in 2006 or thereafter. The "general dropout rate," calculated as the percentage of all pharmacies that participated in a given year with no claims in any subsequent year, had an increasing trend at the end of the study period, with 42.1% of the participating pharmacies in 2006 not continuing in 2007.

Table 7 summarizes the participation of the top 10 pharmacies based on the number of paid claims by SFY. The concentration of claims among the top 10 pharmacies fluctuated in the early years of the program and ultimately grew to a peak of 80.2% of all claims in SFY 2003 and declining thereafter. The mean number of claims submitted by each of the top 10 pharmacies had an increasing trend from 1997 to 2003, decreasing thereafter. The mean dollar amounts paid to the top 10 pharmacies increased steadily in each year between SFYs 1999 and 2004. In SFY 2004, more than 77% of the dollar amount paid to all pharmacies in WMPCP was paid to the top 11 pharmacies ($167,085 of $216,058 total reimbursement in SFY 2004; data not shown).

Trends in Reason, Action, Result, and Level-of-Service (Time) Codes

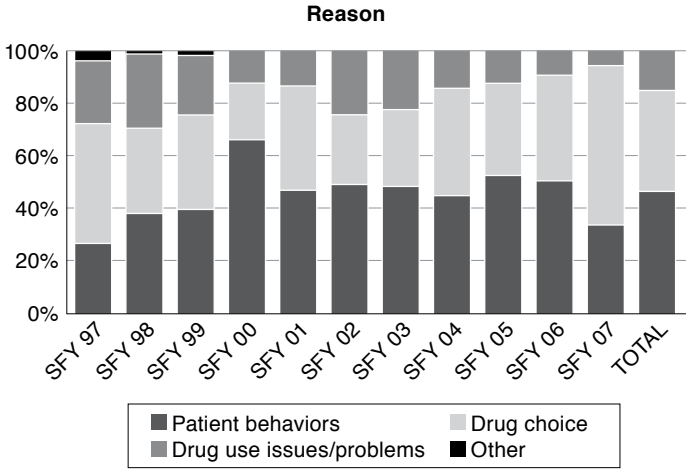
Figures 1a through 1d show trends in the proportions of reason, action, result, and time code categories by SFY. Patient behaviors and drug use issues/problems were the most common reasons for pharmacists to provide PC services (61.6% of

TABLE 7 Summary of the Top 10 Pharmacies Based on the Number of Paid Pharmaceutical Care Claims by State Fiscal Year

State Fiscal Year	Claims	Percentage of Total Claims[a] (%)	Mean [SD] Claims Per Pharmacy	Mean [SD] Payment ($) Per Pharmacy	Mean [SD] Payment ($) Per Pharmaceutical Care Claim
1997	670	46.6	67.0 [42.9]	968.00 [701.62]	14.45 [8.94]
1998	772	53.2	77.2 [45.4]	1,332.89 [1,014.74]	17.27 [9.60]
1999[b]	478	59.3	45.6 [30.9]	841.84 [673.69]	19.37 [11.35]
2000[b]	1,036	79.1	94.2 [127.6]	2,671.69 [5,159.24]	28.37 [12.72]
2001[b]	1,866	57.7	169.6 [112.5]	3,867.83 [3,330.64]	22.80 [11.60]
2002	2,514	68.8	251.4 [236.2]	5,361.89 [5,278.11]	21.33 [9.84]
2003	6,092	80.2	609.2 [592.9]	13,501.19 [13,609.24]	22.08 [11.94]
2004[b]	6,341	66.5	576.5 [702.9]	15,096.70 [21,045.10]	26.35 [12.69]
2005	5,887	60.4	588.7 [543.6]	14,767.32 [16,508.15]	25.07 [12.54]
2006	4,128	54.8	412.8 [274.5]	11,416.13 [11,726.17]	26.59 [12.89]
2007	2,525	48.3	252.5 [121.2]	6,245.24 [6,294.97]	23.59 [14.25]

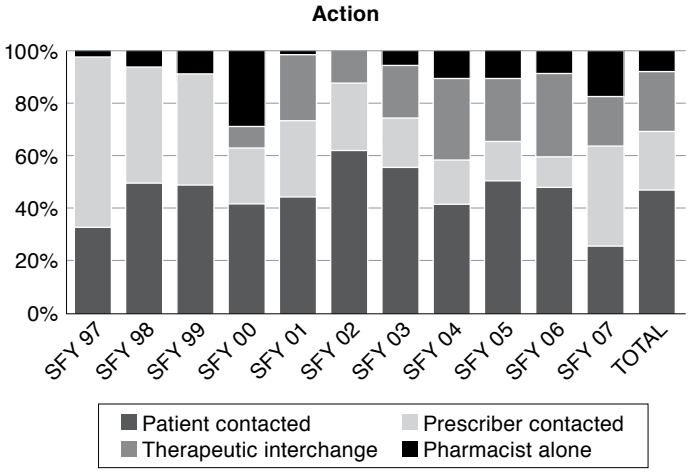
[a]*For each year, represents the proportion of total WMPCP claims that were attributable to the top 10 pharmacies by volume of PC claims in that year.*
[b]*Top 11 pharmacies included due to ties in the number of paid PC claims.*
PC = pharmaceutical care; SD = standard deviation; WMPCP = Wisconsin Medicaid Pharmaceutical Care Program.

FIGURE 1a Trends in Reason Code Categories Paid by the WMPCP by State Fiscal Year



SFY = state fiscal year; WMPCP = Wisconsin Medicaid Pharmaceutical Care Program.

FIGURE 1b Trends in Action Code Categories Paid by the WMPCP by State Fiscal Year

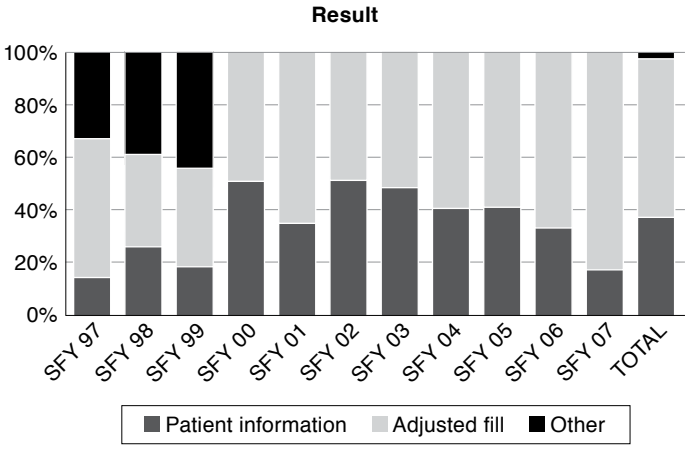


SFY = state fiscal year; WMPCP = Wisconsin Medicaid Pharmaceutical Care Program.

all claims). Patient behaviors were the most common reason code categories in all but 2 of the SFYs studied (1997 and 2007) and remained relatively consistent except for a spike in SFY 2000 (Figure 1a). Over the study period, in-home medication management (8,975 claims) and late refills (7,756 claims) were the most commonly billed reason codes within this category. Patient complaint/symptoms (3,320 claims) was the most common reason code in the "drug use issues/problems" category. In general, the proportion of reason codes in the "drug choice" category increased over time, while the proportion of reason codes in the "drug problems" category declined over time. The most common reason code billed in the "drug choice" category and for the program overall was product selection opportunity (i.e., therapeutic interchange or formulary adherence issues), accounting for 11,472 claims (22.3% of all WMPCP claims). Less than 200 total claims were seen in the "other" category, and these occurred mostly in the first 3 years of the program.

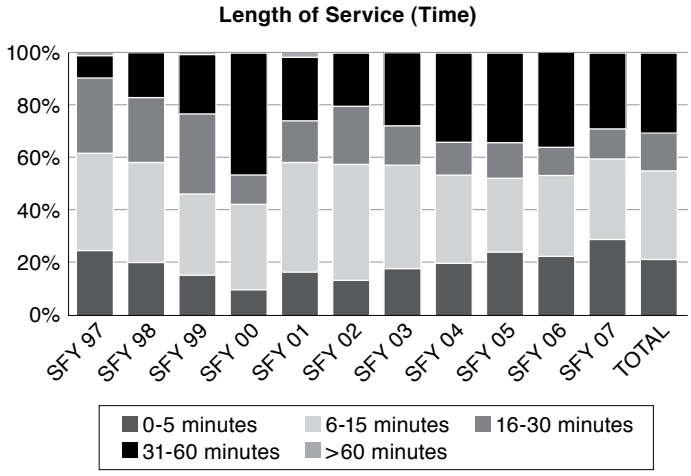
The proportion of action codes in the "prescriber contacted" category generally declined over time until increasing sharply in 2007 (Figure 1b). Overall, 11,723 claims (22.7%) were paid

FIGURE 1c Trends in Result Code Categories Paid by the WMPCP by State Fiscal Year



SFY = state fiscal year; WMPCP = Wisconsin Medicaid Pharmaceutical Care Program.

FIGURE 1d Trends in Time (Level-of-Service) Codes Paid by the WMPCP by State Fiscal Year



SFY = state fiscal year; WMPCP = Wisconsin Medicaid Pharmaceutical Care Program.

under this category. The proportion of claims in the "patient contacted" category remained relatively stable until peaking in SFY 2002 and decreasing thereafter. The 2 most common specific action codes in the "patient contacted" category were patient education (13,895 claims) and patient assessment (9,627 claims). Claims for the "therapeutic interchange" category (n = 11,467) fluctuated over time, with the highest rates in SFYs 2001, 2004, and 2006. Claims for the "pharmacist alone" category also fluctuated over time, with the highest rates in 2000 and 2007. Of the 4,323 claims in the "pharmacist alone" category, 3,543 (82%) were for coordination of care with prescribers, and 554 (12.8%) were for medication review.

The proportion of claims in the "patient information" result code category increased over time until peaking in SFY 2000 and again in SFY 2002, then decreasing thereafter (Figure 1c). "Patient instruction understood" was the most commonly billed result code, accounting for 19,458 (37.8%) of all claims. The proportion of results in the "adjusted fill" category had a markedly upward trend (Figure 1c). This category contains codes for developing compliance aids (9,270 claims), as well as for dispensing prescriptions with a different drug (14,021 claims), different directions (2,174 claims), different quantity (1,926 claims), different dose (1,180 claims), or different dosage form (253 claims). Paid claims in the "adjusted fill" category were associated primarily with the "drug choice" reason code and with action codes in the "prescriber contacted" and "therapeutic interchange" categories. Claims in the "other" category appeared only in the first 3 years of the program, until revisions to the allowable result codes eliminated them.[8]

Overall, level 2 (6 to 15 minutes) was the most common level-of-service (time) code, with 17,508 claims (34.0%) having this payment level (Figure 1d). In all but 2 SFYs, 1999 and 2000, more than one-half of the paid PC claims were for a level of service consuming 15 minutes or less. The level of service consuming 0 to 5 minutes (level 1) showed a downward trend for the first 4 years of the program and then began to increase annually starting in 2000, peaking at 29.3% of all paid claims in 2007. Paid claims with level 1 and level 2 service codes were primarily associated with the specific reason codes of product selection opportunity, therapeutic duplication, and suboptimal regimen.

The level 3 service code (16 to 30 minutes) had an overall downward trend, beginning with 28% of the claims in SFY 1997 and dropping to slightly more than 10% of paid claims in SFY 2007. This code primarily corresponded with the "drug use issues/problems" reason category. The level 4 service code (31 to 60 minutes) showed a strong upward trend beginning with a low of 8.1% of claims in SFY 1997 and ending with 30.4% of paid PC claims in 2007. This level-of-service category was primarily associated with patient behaviors; specific reason codes included in-home medication management, suboptimal compliance, and possible drug misuse. Only 376 claims (0.7%) were submitted for the level 5 service code (greater than 60 minutes), and these also were primarily associated with patient behaviors.

The amount of time pharmacists spent performing PC services varied by reason code (data not shown). Nearly 80% of interventions focusing on drug choice took 15 minutes or

less. In contrast, 90.2% of drug use issues/problems required between 6 and 30 minutes to resolve. PC services with the patient behavior reason codes were more time intensive than other services, accounting for nearly 90% of all services requiring 31-60 minutes.

Discussion

Pharmacy Participation

The WMPCP is the longest ongoing, publicly funded program paying pharmacies for nondispensing patient care services, and one-half (601) of the approximately 1,200 licensed pharmacies in the state of Wisconsin have been paid for a claim through the WMPCP. Pharmacy participation typically has been limited and short lived; more than one-half of all participating pharmacies (56.7%) were paid for 10 or fewer claims, and 19% were paid for only 1 claim from 1996 to 2007. One explanation for this finding is that pharmacies may have participated on a trial basis to "get a feel" for the program, but barriers or costs associated with participating or implementing the program outweighed the apparent benefits for these pharmacies. To the contrary, our results also suggest that some pharmacies were able to overcome these barriers and participated for longer periods of time and at higher rates.

Program changes appear to have facilitated participation. The numbers of paid claims and participating pharmacies more than doubled after the POS system was implemented in late (February) SFY 2001. Additional growth in claims occurred after PDUR implementation, with another doubling of claims paid in SFY 2003, along with the highest number of claims per pharmacy and the highest concentration of claims among the top 10 pharmacies. One possible explanation for increased participation and increased mean number of claims per pharmacy is that these program changes reduced burdens for pharmacists. Electronic claims submission reduced the burden of completing paper claims, and PDUR may have assisted pharmacists in identifying additional billable opportunities to provide PC services.

Changes in the Medicaid program to add SeniorCare and the implementation of Medicare Part D also affected pharmacy participation and claims submission. The number of participating pharmacies nearly doubled after 2003 when the SeniorCare program started but then decreased after Medicare Part D coverage began in 2006, as dual-eligible beneficiaries were no longer eligible to receive WMPCP services. This relationship highlights the sensitivity of pharmacy participation in programs such as the WMPCP to the number of patients eligible to receive services. Pharmacies may not participate if the number of patients eligible is not large enough to warrant the time and energy to identify needed services and bill for them.

Some program characteristics may have negatively influenced pharmacy participation. In spite of possible desires by pharmacists to provide services and expand their practices, the initial paper claim submission process likely impeded the uptake of the program in pharmacies. In 1996, electronic claims submission was the standard dispensing process protocol in pharmacies, and paper claims required extra effort and energy. Anecdotal reports from pharmacists suggest that the billing procedure (paper and electronic) continued to be complex even under the POS system, requiring special codes and requiring WMPCP service claims to be associated with a drug claim. To accommodate the unique billing process, dispensing system software often needed to be modified to allow pharmacists to bill using the POS system. It is likely that the billing process could have been simplified for pharmacists if another billing mechanism, such as the use of dummy National Drug Codes (NDCs), had been adopted, allowing separate, independent billing for PC services as if they were drug claims. However, such a system would have separated the service claim from the corresponding drug claim and likely could have necessitated an extensive list of dummy NDC numbers that corresponded to the various combinations of reason, action, result, and time codes.

Another program limitation that was identified as a barrier to pharmacy participation is the low reimbursement amount for each level of service.[15] Although pharmacist wages in Wisconsin increased by nearly 80% from 1997 to 2007,[16] WMPCP reimbursement for PC services has increased only 1 time, by just 4%, since the program began in 1996 (e.g., the maximum allowable reimbursement for a level 1 service increased from $9.08 to $9.45; Table 2).[8] Since pharmacist time and labor costs are major expenses in providing a PC service, the disparity between costs and reimbursement amounts may have made participation financially impossible for some pharmacists and pharmacies.

Over time, there was considerable concentration of claims among a small number of participating pharmacies, suggesting that some incorporated the WMPCP program into their pharmacies' normal workflow or developed systems to identify and maximize opportunities to provide and bill for services. The 10 pharmacies with the highest claims volume by year consistently accounted for a majority of the paid WMPCP claims, accounting for up to 80% of total claims in each year. This pattern of a few pharmacies participating at high rates is similar to those observed in other studies examining programs that pay pharmacies for services and raises some questions.[2,17-19] Do these pharmacies serve a larger proportion of Medicaid patients, making the benefits of program participation worth the costs of participating?[2] Are the organizational cultures of these pharmacies more focused on providing nondispensing services? Are the work systems, in terms of technology use; performance of tasks; and the number, skills, and knowledge of staff (i.e., use of technicians, pharmacy students, or interns) different from those of other pharmacies? Further research is needed to examine characteristics of these high-volume

participants compared with low-volume participants and nonparticipants in order to identify best practices for participation. Preliminary analysis of the data used in the present study shows that independent pharmacies and pharmacies located in rural areas tended to have higher rates of participation in the WMPCP.[20] Further investigation into the characteristics of participating pharmacies will be performed in a future analysis.

Characteristics of Claims

Our results reveal that patient behaviors and drug use issues/problems were the most common reasons for pharmacists to provide PC services, which is consistent with the findings of other studies.[4,5,17,18] Trends in the number of claims paid by the different reason code categories showed an increase in the proportion of interventions targeting drug choice, with corresponding increasing trends of contacting physicians as an action and adjusting fills as a result. One explanation for the shift to more emphasis on drug choice issues is the creation of other programs that pay pharmacists for nondispensing services by private payers. Analyses of these programs show that drug choice issues are common reasons that pharmacists are paid for services.[17,21] In addition, formulary restrictions may require drug changes, and drug choice services are relatively easy to provide and can be identified and implemented by trained technical staff in a pharmacy, thus reducing the cost of providing the service. Given that the enhanced dispensing fees have not increased over the program duration, developing systems to involve lower-cost technical personnel in the provision of PC services is a potential strategy to make participation economically sensible.

An important area for future research is examining the economic benefit of the WMPCP to the state and taxpayers. Reason code categories, such as "patient behaviors," could be analyzed to examine whether and how drug use and costs were affected for patients receiving the services. Certain reason code categories, such as "drug choice," lend themselves to economic evaluation by comparing the cost of the drug that was ultimately dispensed with the drug originally prescribed. A recent study found considerable cost savings to payers and patients as a result of pharmacist-reimbursed drug therapy modification.[21] However, the financial impact of providing these services (i.e., cost to the pharmacies) has not been determined for pharmacies. Because drug therapy modification is associated with increased time and labor costs for pharmacists,[22] it is important that financial incentives for this type of program adequately compensate pharmacists to motivate participation. Economic evaluations of these services provided by pharmacists are important for the future development of such programs.

The majority of services consumed a small amount of pharmacists' time (less than 15 minutes). A similar study by Christensen et al. (2000) found that the average amount of time spent providing a PC service to Medicaid beneficiaries patronizing community pharmacies was 7.5 minutes, with 94% of PC interventions taking less than 20 minutes.[17] Our results show that over the duration of the study period, there was an increase in the number of claims submitted for the 0 to 5 minute level, consistent with the increase in the proportion of "drug choice" reason codes. Pharmacists appear to focus on tasks requiring a small amount of time but are also involved in more complex medication therapy management activities. Future research will examine the diversity of claims submitted by pharmacies that have participated the longest and/or the most (i.e., highest number of paid claims). For example, do pharmacies specialize in one type of service or are they more diversified? Initial evidence suggests that some pharmacies submit claims for a variety of PC services, whereas others tend to submit claims for only a few service types. What are the differences in terms of work systems within and between pharmacies that participate in different ways?

Overall, some problems took longer to resolve than others. Patient-focused problems associated with the patient behavior reason codes were more time intensive than other services. The majority of drug use issues/problems took between 6 and 30 minutes, and drug choice issues took 15 minutes or less to resolve. The multitiered system of reimbursement by time spent used by WMPCP enabled more equitable compensation for different actions and the corresponding length of time required to solve patient problems. This system provides an incentive for pharmacists to intervene in more difficult or time-consuming problems and is consistent with resource-based relative value scale (RBRVS) systems in use by physicians.[23] Therefore, paying pharmacists using RBRVS systems or Current Procedural Terminology (CPT) codes based on the level of intensity may be appropriate for some PC services.

One concern for sustainability of the WMPCP program is the decline in traditional Medicaid fee-for-service enrollment and the increasing penetration of managed care programs.[9-11] As of July 1, 2010, the percentage of Medicaid beneficiaries enrolled in managed care plans in Wisconsin was 62.4%.[24] Although Wisconsin has a lower statewide rate of managed care penetration among Medicaid recipients compared with the national average, a decrease in fee-for-service enrollment means fewer opportunities for pharmacists to receive reimbursement for PC services provided to Medicaid patients through the WMPCP.

Limitations

First, the dataset obtained from the Wisconsin Department of Health and Family Services contained only paid claims through the WMPCP. Since it did not include failed or rejected billing attempts, we are unable to estimate the frequency with which claims were unsuccessfully billed. Second, the dataset contained paid claims only for beneficiaries receiving care under the fee-for-service system and did not include paid claims for patients eligible for such services through approved

managed care programs. It is unknown how many managed care programs offered these services or how many patients received them. In general, Medicaid managed care enrollees in Wisconsin are young, relatively healthy persons, typically with low prescription drug use.[25,26] The frail elderly and chronically mentally ill are recipients who remain in the fee-for-service system and are high users of prescription drugs and likely can benefit the most from services provided through the WMPCP. Thus, our findings may not be representative of claims for services provided to a managed care population. A comparison of results for managed care and fee-for-service beneficiaries is an important area for future research to address this concern.

A third potential limitation is related to how consistently pharmacists billed activities over the duration of the WMPCP. Pharmacist interpretations of the billable intervention codes may have changed over time, which could have influenced trends in reason, action, and result categories. Additionally, changes in payer interpretations of acceptable codes and coding combinations are evident in the number of defined billable service codes over time—the number of billable reason codes decreased from 42 to 28; the number of action codes decreased from 11 to 9; and the number of result codes decreased from 29 to 8. We attempted to control for these changes in payer interpretation by using the aggregate categories to encompass similar groups of reason, action, and result codes.

A final limitation is limited financial information available in the data. The claims data we obtained for the study did not contain complete information about the dollar amount each pharmacy submitted for each claim. For more than 86% of paid claims, the actual dollar amount paid per claim to the pharmacy was paid at the maximum allowable reimbursement amount.

Conclusions

The WMPCP was the first fully implemented, state-funded program to encourage PC by providing financial incentives to pharmacists for providing cognitive services, and it remains the longest ongoing Medicaid program to compensate pharmacists for these services. Trends in pharmacy participation and claims volume show growth, albeit limited, in program participation with a majority of paid claims dealing with patient behaviors and drug use issues or problems that consumed a small amount of pharmacists' time (15 minutes or less). Program changes to reduce burdens for pharmacists appear to have facilitated participation. Although not studied specifically in this research, low reimbursement rates and the complex billing procedure may have negatively influenced pharmacy participation. However, it appears that some pharmacies in Wisconsin have developed effective systems for participating and successfully submitting PC service claims to WMPCP for enhanced dispensing fees. Further evaluation of the impact and implications of this program for patients, pharmacists, and the state is needed to gauge overall program success and provide evidence or guidance for continued or expanded PC initiatives.

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