COMMONWEALTH of VIRGINIA

Department of Medical Assistance Services

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November 1, 2005

MEMORANDUM

TO: The Honorable Mark R. Warner
Governor, Commonwealth of Virginia

The Honorable John H. Chichester
Chairman, Senate Finance Committee

The Honorable Vincent F. Callahan, Jr.
Chairman, House Appropriations Committee

The Honorable Harvey B. Morgan
Chairman, Joint Commission on Health Care

The Honorable H. Russell Potts, Jr.
Chairman, Education and Health

The Honorable Phillip A. Hamilton
Chairman, Health, Welfare and Institutions

FROM: Patrick W. Finnerty

SUBJECT: Virginia's Preferred Drug List: Program Implementation Outcomes and Recipient Health Effects

Pursuant to Chapter 951, Section 326 BB8, of the 2005 Appropriations Act, the Department of Medical Assistance Services (DMAS) is directed to report on the status of the Preferred Drug List (PDL) program.

I am pleased to submit this report to the General Assembly, which summarizes the outcomes of PDL program implementation, the estimated savings of the PDL program, and the health effects on recipients. This report is intended to fulfill the requirement under the 2005 Appropriations Act.

I have enclosed for your review the report. Should you have any questions or need additional information, please feel free to contact me at (804) 786-8099.

Enclosure

cc: The Honorable Jane H. Woods

Virginia's Preferred Drug List: Program Implementation Outcomes and Recipient Health Effects

Virginia Department of Medical Assistance Services

November 1, 2005

Virginia's Preferred Drug List: Program Implementation Outcomes And Recipient Health Effects

At the recommendation of the Secretary of Health and Human Resources, the Governor proposed in his 2003 budget that the Department of Medical Assistance Services (DMAS) develop and use a Preferred Drug List (PDL) for the Medicaid prescription drug program. During the 2003 session of the Virginia General Assembly, legislators granted DMAS the authority to implement this program. The major goal of the PDL is to reduce the use of more expensive drugs to treat patient illnesses when alternative medications are available that provide the same therapeutic benefit but at a lower price. Recognizing the potential impact a successfully implemented PDL program could have on Medicaid expenditures for prescription drugs, the 2003 General Assembly directed DMAS to generate PDL savings of $18 million in FY 2004 and $36 million in FY 2005.

The general findings of this study are as follows:

- DMAS has successfully designed and implemented a PDL program that has produced a high compliance rate without denying recipients access to drugs.

- Nearly seven of ten prescriptions that were written for non-preferred drugs prior to the implementation of the PDL were switched to preferred drugs once the program started.

- When persons who were switched to drugs on the PDL are considered along with others whose initial prescriptions were written for drugs on the PDL, the overall program compliance rate is 93 percent. This exceeds the 85 percent rate needed by DMAS to meet the legislatively established savings target for the program.

- The vendor for the PDL program has operated an efficient call center, handling more than 61,400 requests without denying any patients access to drugs.

- Since the PDL program was implemented in January 2004, the estimated savings in the overall Medicaid pharmacy program total more than $35 million.

- Though more research is needed, this study found no adverse health impacts for persons who were switched to drugs on the PDL compared to those who were allowed to remain on non-preferred drugs.

Introduction

The impetus for DMAS' PDL proposal was the growing cost of the Medicaid prescription drug program. From the period of 1997 to 2003, Virginia's expenditure rate for prescription drugs substantially outstripped spending on other components of the Medicaid program (Figure 1). More important, additional analysis work found that these higher expenditures could not be explained by a growth in the number of Medicaid recipients who were receiving prescription drugs or by comparable growth in the number of drug claims.

At the time DMAS considered proposing a PDL, there was strong opposition to these programs because they involve the use of more restrictive formularies than have been traditionally been used in Virginia's Medicaid program. Among the staunchest critics of PDLs are pharmaceutical manufacturers, patient advocacy groups, physicians, and to a lesser degree, representatives for pharmacists. At varying levels, each of these groups expressed opposition to Virginia's program during its development.

Chief among the concerns of patient advocates and physicians was whether Virginia's PDL program would emphasize saving money at the expense of patient access to medications. Although representatives for these groups were aware that safeguards had been built into the system to ensure that patient access would not suffer, they contended that in other states, the process for triggering these protections were unnecessarily cumbersome for patients, physicians, and pharmacists.

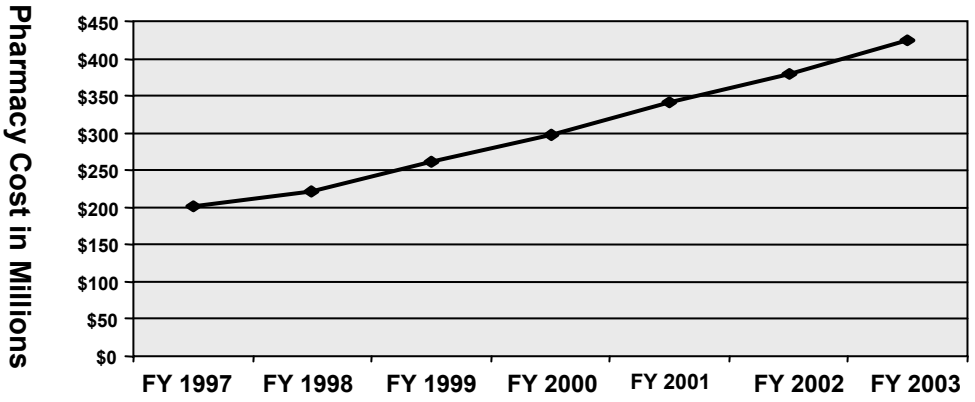
Even if patients are moved from high-cost drugs to less expensive medications without breaks in service, opponents of the PDL believe that shifting so many patients from the drugs to which they are accustomed will create adverse health effects, resulting in much higher utilization of various healthcare services. Primarily for these reasons, critics of the program argued that Virginia's PDL should have been voluntary with physicians having the option of gradually changing their prescribing patterns towards the use of less expensive drugs.

DMAS officials were aware of these concerns and noted that several steps were taken to minimize the anticipated problems. First, as required by federal regulations, any Medicaid-covered drug for which no therapeutic equivalent exists was automatically included on the State's PDL. Second, physicians would be allowed to seek approval for prescribed drugs that are not on the PDL through a federally required prior authorization process.

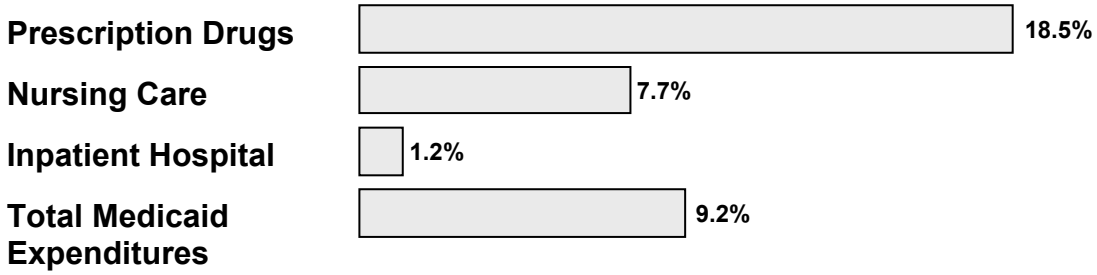
Third, because of the inherent problems associated with establishing an effective drug regimen for persons who are on psychotropic medications, DMAS excluded anti-psychotic medications from the PDL. Fourth, unlike the experience of a few other states, the committee of physicians responsible for establishing the

Figure 1

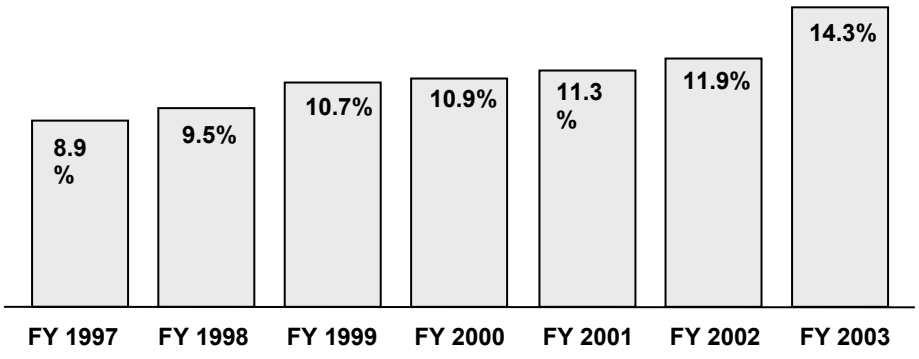
Trend in Virginia's Medicaid Fee-For-Service Pharmacy Costs (FY 1997-2003)



Average Annual Growth in Medicaid Expenditures for Selected Services (FY 1997-2003)



Fee-For-Service Pharmacy Cost as a Percent of Total Medicaid Costs (FY 1997-2003)



Source: DMAS Policy and Research staff analysis of data from The Statistical Record of the Virginia Medicaid Program, 2003.

PDL in Virginia would not be asked to move a large number of drug classes onto the PDL in a short time period. By gradually bringing drug classes onto the PDL, the number of patients who are initially affected by the new program was minimized, allowing for a smoother transition period for the new system. The skill and expertise of the Pharmacy and Therapeutics Committee members were critically important in the successful implementation of the program. In addition, DMAS created a new PDL implementation Advisory Group, which was comprised of pharmaceutical manufacturers, advocates, providers, and other stakeholders to provide input to the education process.

Finally, in the event that a physician decides to appeal an unfavorable decision following a request for prior authorization of a non-preferred drug, DMAS established a policy to ensure that the patient receives the prescribed drug until the case is resolved.

Notwithstanding these actions, the agency director and the General Assembly required DMAS' Policy and Research staff to conduct an ongoing evaluation of Virginia's PDL program. This evaluation must focus not only on the savings generated by the program, but the impact of the PDL on both Medicaid patients and providers.

This report provides an analysis of DMAS' implementation of the PDL program using data on all of the drug claims that were submitted for payment by pharmacists participating in the Medicaid program. In addition, the report provides a separate review of the prior authorization process, an analysis of the savings in DMAS' overall pharmacy program, and an assessment of whether the PDL program has adversely impacted the health of Medicaid recipients. The next section of this report describes the PDL program design.

Virginia's PDL Program Design

In its simplest form, the PDL program establishes a formulary for select therapeutic drug classes with prescription drugs that have the same clinical effectiveness, but whose manufacturers have agreed to sell their products to the State's Medicaid program at lower price. This allows DMAS to generate savings in its prescription drug program while ensuring that Medicaid patients have continued access to drugs, which have a proven efficacy.

The PDL Program Model

The process for building a PDL in Virginia begins with the State's Pharmacy and Therapeutics (P&T) Committee. This committee of physicians and pharmacists first reviews certain classes of drugs (e.g. cardiac medications) and determines whether they are candidates for the PDL. Once a class of drugs is selected for the PDL, the committee assesses the clinical efficacy of each drug in the class and recommends whether it should be considered for the PDL. Manufacturers of those drugs in the selected class must then negotiate with the vendor for the program to determine what

discounts they will provide to Medicaid. The final selection of "preferred" drugs is based first and foremost on clinical efficacy, and, then price. In every instance, the P&T Committee makes these decisions.

How the Program Works. Once the PDL is in place, physicians must first decide whether to prescribe drugs that are on the PDL. If the doctor chooses a drug on the PDL for his patient, the process is straightforward. The pharmacist receives the prescription from the patient and electronically submits the claim to First Health Services Corporation (FHSC), which is the vendor for the program. Because the prescription is for a PDL drug, this claim is approved at point-of-sale and the pharmacist subsequently dispenses the medication to the patient.

In some cases, physicians will unknowingly write a prescription for a non-preferred drug. In this case, once the patient submits this prescription at the pharmacy, the claim will be rejected at point-of-sale and the pharmacist will contact the prescribing physician to request that the prescription be changed to a preferred drug. If the physician requests the non-preferred drug, the pharmacist will instruct the doctor to contact FHSC and provide a medical justification for the non-preferred drug.

This step in the process effectively allows the physician the opportunity to make a case for the drug that is not on the PDL with FHSC staff. If that effort fails, the dispute will be escalated to a FHSC pharmacist. If at any point during this process the physician's request is granted, the pharmacist is notified and the prescription is dispensed. Further, while this process is unfolding, the pharmacist, may at his professional discretion, contact FHSC and request a 72-hour emergency supply of the prescribed drug for the patient if he believes such a supply is warranted. This is done to ensure the patient does not leave the drug store without the necessary medication.

At other times, physicians will be aware that the drug that they would like to prescribe is not on the PDL. In these cases, the State must give the doctors an opportunity to request prior authorization to prescribe the non-preferred drug. This request is made directly to FHSC. The process that subsequently unfolds mirrors the previously discussed steps.

The Appeals Process. If FHSC ultimately denies the physician's request to prescribe a drug that is not on the PDL, DMAS policy requires FHSC to notify the doctor of the decision and inform him of the appeals process. Also, at the point of the denial, the lead pharmacist is required to enter a prior authorization into the system permitting any pharmacy the authority to dispense a 34-day supply of the originally prescribed drug.

Upon notice of denial and the opportunity for appeal, the physician and or recipient will have 30 days to file an appeal. DMAS' appeals division will review the case and issue an opinion within 21 days. If, for some reason, the appeal is not resolved in 34 days, FHSC is required to re-authorize the prescribed drug for another 34 days.

The next section in this report presents DMAS findings from its review of the implementation of the program.

PDL Program Design and Implementation Outcomes

The issue of whether the PDL has been successfully implemented turns on the following questions:

- Are persons who were on drugs that were not on the PDL prior to the start date for the program, switched to drugs on the PDL without creating access problems?

- Is the overall compliance rate for the program sufficient to meet the savings targets established by the General Assembly for the state's pharmacy program?

- Are the prior authorization requests for drugs not on the PDL which are made to the Call Center handled efficiently and effectively without creating problems of access for Medicaid recipients?

The findings of this study indicate that the implementation of the PDL over the first 18 months of the program has been an unqualified success. The program has achieved an exceptionally high compliance rate (93 percent), the vendor for the program is operating the call center effectively and efficiently, and patients are not being denied drugs.

DMAS Has Successfully Implemented the PDL Program during the First 18 Months

As noted earlier, DMAS management made the decision to gradually phase-in the PDL program to ensure a smooth transition of this new policy. As shown in Table 1, 13 classes of drugs were placed on the PDL in January 2004. Over the next year, 18 additional classes were added to the program. Together, these classes accounted for only three of every 10 drug claims that were submitted for payment to the Medicaid pharmacy program over this 18-month time period. This phase-in process allowed DMAS pharmacy staff to better manage the provider education and outreach activities that were conducted prior to establishing each new class of drugs on the PDL.

Table 1

Phase-In Schedule For Virginia's Preferred Drug List (PDL) Program

Date Classes Were Added To The PDL	Number of Classes Added
January 2004	13
April 2004	6
August 2004	11
January 2005	1
Total Drug Classes On PDL	31

Note: The 31 drug classes on the PDL account for 31 percent of the drug claims submitted to the Medicaid pharmacy program.

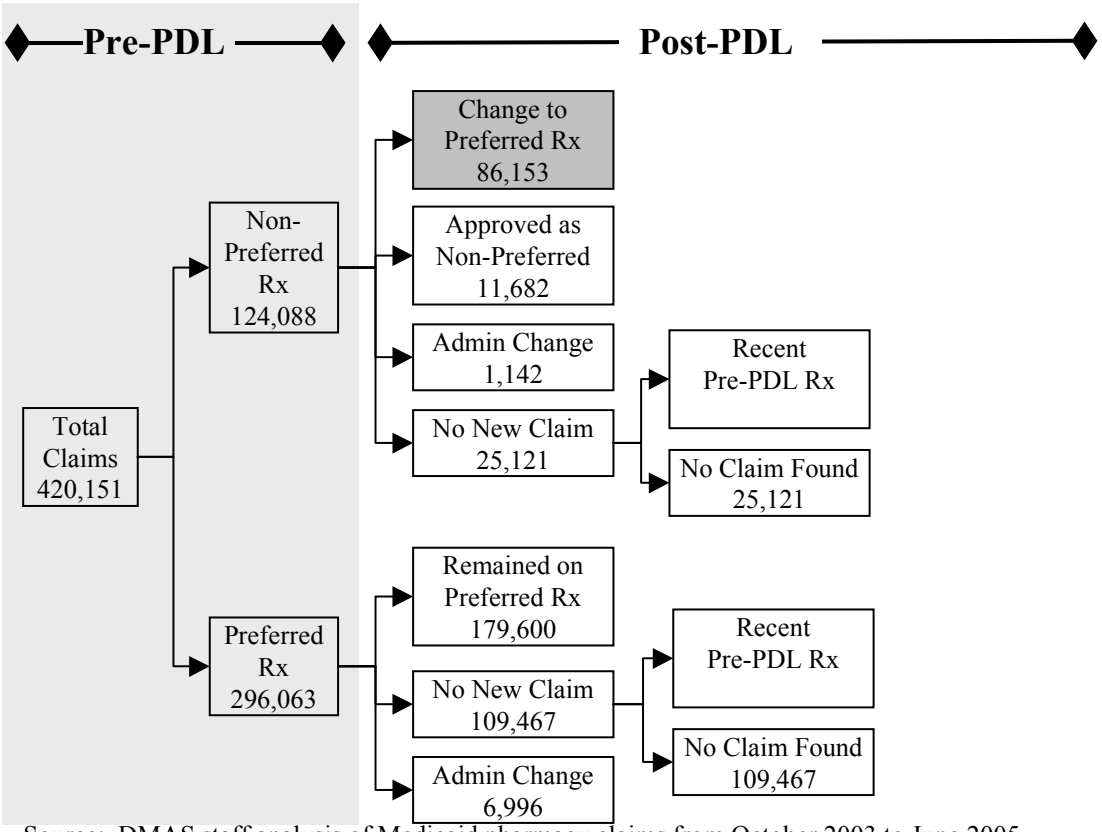
From an evaluation perspective, however, the degree to which the program was successfully implemented involves much more than the manner in which the program was phased in. The implementation issues examined in this report centered on the following:

- The degree to which the status of prescriptions changed as drug claims are moved through the PDL system;
- The degree to which physicians comply with the program by writing prescription for drugs on the PDL;
- The volume and processing of prior authorization requests made of Call Center.

Tracking Prescription Status Changes. To track the movement of prescriptions through the system, all recipient drug claims that were submitted for payment in the three-month period before the PDL program started were identified by drug. Thus when subsequent recipient prescriptions for the same drugs were submitted after the start date for the program, DMAS staff could determine the rate at which drugs were switched from non-preferred to preferred status. In addition, it was also possible to assess the degree to which recipients may have refused to fill prescriptions possibly because their drugs were switched from non-preferred to preferred status.

Figure 2 summarizes the results of this analysis. As shown, DMAS staff identified more than 420,000 paid prescriptions for drugs that were submitted in the three-month period prior to the start of the PDL. Of that number, roughly 29 percent of the prescriptions -- 124,088 -- were for drugs that would have not been on the PDL had the program been in place at that time.

Figure 2
Tracking The Status Change For Prescriptions Following Implementation Of The PDL Program



Source: DMAS staff analysis of Medicaid pharmacy claims from October 2003 to June 2005.

Figure 2 further reveals that 69 percent of the prescriptions that were not on the PDL in the pre-PDL period -- 86,153 -- where switched to prescriptions on the PDL when subsequent prescriptions were presented by the same recipients for the same drugs. Of the remaining prescriptions from the pre-PDL period, nine percent -- 11,682 -- were approved as non-PDL drugs when subsequent claims were received in the post-PDL period.

A smaller number of claims -- 1,142 -- were submitted for drugs that were actually removed from the PDL by the P&T Committee because of health problems that were traced to the use of those medications. These claims are labeled as "Admin Change" in Figure 2.

For 20 percent of the non-PDL drug claims submitted during the pre-PDL period, DMAS staff could not locate a subsequent claim in the post-PDL period. However, there is no evidence to indicate that this reflects a patient access problem or

the degree to which recipients have "walked away" from their prescriptions because of the switch in drugs. In fact, data presented in the bottom half of Figure 2 indicates that the proportion of claims that could not be found in cases where the patients' initial drugs were already on the PDL and therefore not switched upon the start of the program was 36 percent. This is 80 percent higher than the rate observed for prescriptions that were written for drugs that were not on the PDL in the pre-PDL period. Thus, the absence of subsequent claims in both of these categories likely reflects the fact that these prescriptions were written in the pre-PDL period to address non-recurring health problems; hence no additional prescriptions were needed.

Measuring the Program's Overall Compliance Rate. The analysis of post-PDL drug claims thus far has focused on tracking subsequent prescriptions for those that were initially written and paid before the PDL program went into effect. A second method for examining the implementation success of the program is to calculate a compliance rate for all paid PDL-eligible prescriptions regardless of whether they originated in the period before the program went into effect. With this approach, the compliance rate is defined as the number of paid prescriptions written for medications on the PDL, divided by the number of all paid PDL-eligible prescriptions. During the planning phase for the program, it was determined if DMAS were to meet its savings target, 85 percent of all paid prescriptions for PDL-eligible drugs needed to be written for drugs actually on the PDL.

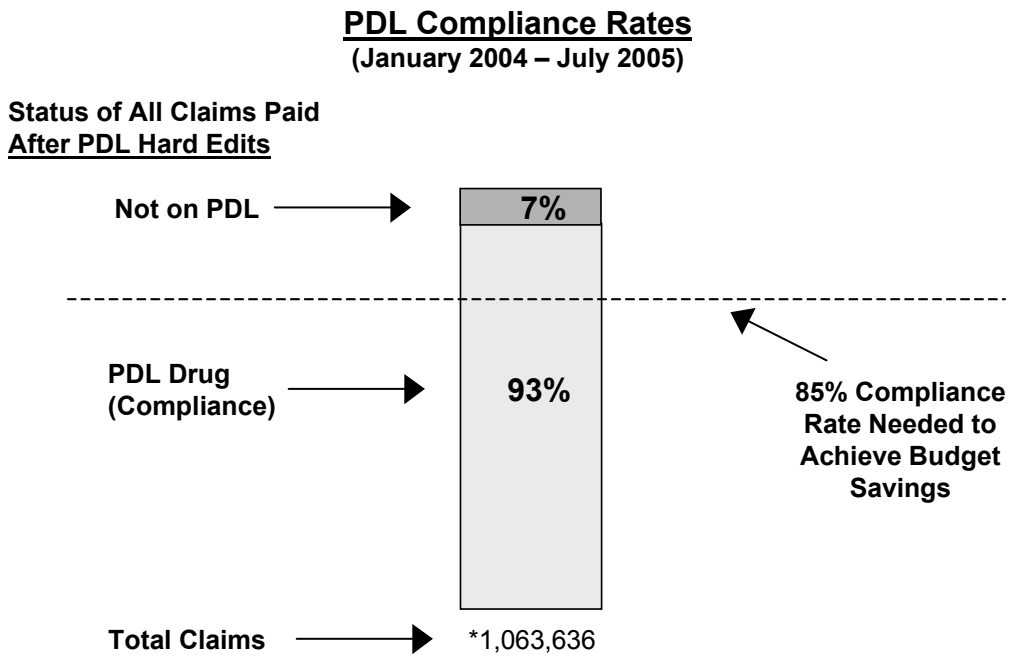
Figure 3 reports the compliance rate and shows that on average, 93 percent of all paid claims for PDL-eligible drugs were written for drugs on the PDL. In other words, slightly more than nine of every 10 prescriptions that could have been written for drugs on the PDL were actually paid from the PDL.

One concern expressed by many during the planning phase for the program was the issue of selective compliance. That is, it was believed that physicians would have no problem prescribing off of the PDL for drugs that treat less serious health problems but would be reluctant to do so for more complicated medical conditions. Accordingly, DMAS staff examined the compliance levels within selected drug classes to determine if the rates varied significantly.

As shown below, no significant differences were observed in the compliance rates across drug classes.

- Cardiac Medications (96 percent);
- Gastrointestinal Medications (93 percent)
- Asthma and Allergy Medications (91 percent)
- Anti-Biotics (94 percent)

Figure 3
PDL Compliance Rate For All Drug Claims Paid In The First 18 Months Of The Program



Source: DMAS staff analysis of Medicaid pharmacy claims data from January 2004 to August 2005.

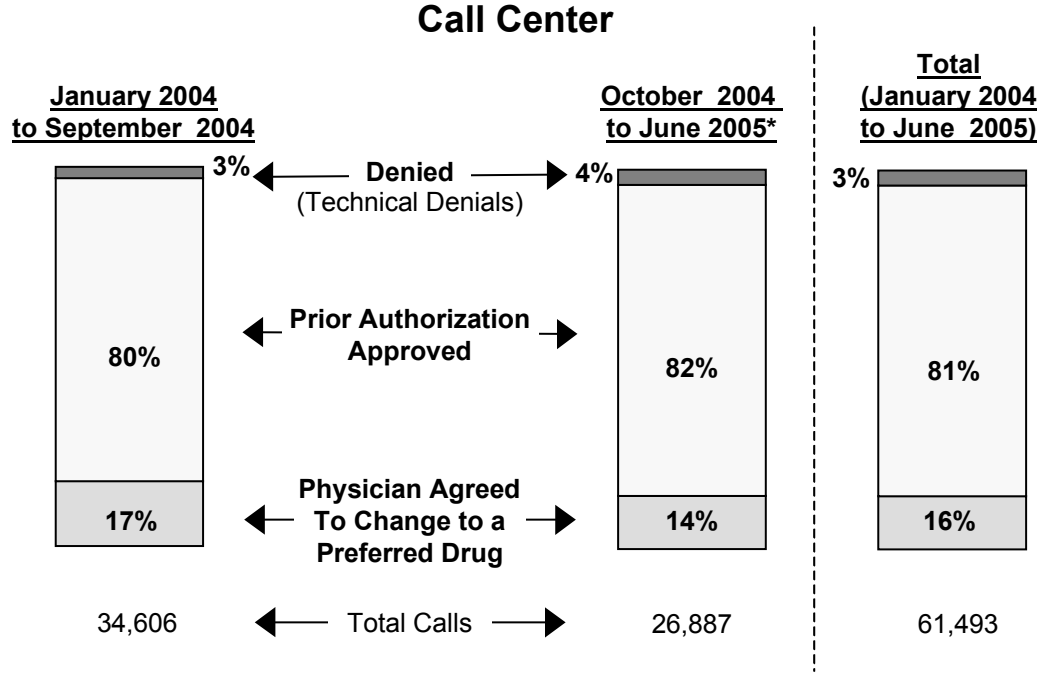
- Analgesics (89 percent)
- Diabetes Medications (98 percent).

Call Center Activity. The final aspect of the DMAS' assessment of PDL implementation focused on FHSC management of its call center. In conducting this analysis, DMAS relied upon comprehensive reports that FHSC produces on its call center operations. These reports identify the total requests made to the center, the source and reason for the request, the length of the calls to the center, and the outcome of the request.

This information is useful in determining how the vendor for the program handles prior authorization requests by doctors for drugs that are not on the PDL. More important, the data can be used to determine whether recipients are being denied access to drugs if their physicians elect not to switch their prescriptions to drugs on the PDL.

Figure 4 summarizes some of the activity of the call center. As shown, since January 2004, FHSC has processed a total of 61,493 requests for drugs that were not on the PDL. In 81 percent of the cases -- four of every five requests

Figure 4
How Requests For Prior Authorization Are Processed At The Call Center



Notes: *There were also 5 reconsiderations (< 1 percent) in the October 2004 to June 2005 time period. Call data indicates that FH staff are answering phone calls within 28 seconds on average, the call lengths average two minutes and 27 seconds and they have average call abandonment rate of nearly zero .

-- the prior authorization requests for drugs that were not on the PDL was approved. For 16 percent of the requests, the physician agreed to change the prescription to drug on the PDL.

Approximately three percent of all prior authorization requests for drugs that were not on the PDL were denied. However, it is important to note that these were technical denials meaning that the patients were not actually denied their medications. These cases involve nursing homes that distribute medication in unit doses and then retrospectively request prior authorization for the drugs that they have already dispensed but which were not on the PDL. Because FHSC staff could find no justifiable reason for these requests, this permission was not granted. Subsequently, nursing homes were informed by DMAS that effective August 1 2005, the agency would no longer pay drug claims for medications not on the PDL, that are submitted retroactively, and not approved by the vendor.

In terms of call processing, DMAS determined that FHSC staff answered phone calls in an average of 28 seconds. Moreover, the call abandonment rate -- when the caller hangs up before the call is answered -- was practically zero.

Estimated Savings In The Medicaid Pharmacy Program

When the General Assembly passed the language authorizing DMAS to operate a PDL, specific savings for the program were assumed in the agency's budget. Overall, the General Assembly required DMAS to generate savings of $25.7 million in its pharmacy program with the expectation that the PDL program would produce $18 million of these savings.

Data comparing forecasted to actual pharmacy expenditures during the 18-months in which the PDL program has been implemented reveal that DMAS is spending $35.2 million less in its pharmacy program than the agency was predicted to expend without the PDL and other initiatives in place. Because DMAS implemented a number of pharmacy initiatives simultaneously, the precise amount of the savings occurring in the program that is due to the PDL could not be determined. However, as the agency's linchpin pharmacy initiative, the PDL is undoubtedly responsible for producing the majority of these savings.

Since Implementing The PDL DMAS Has Generated $35.2 Million In Savings For Its Pharmacy Program

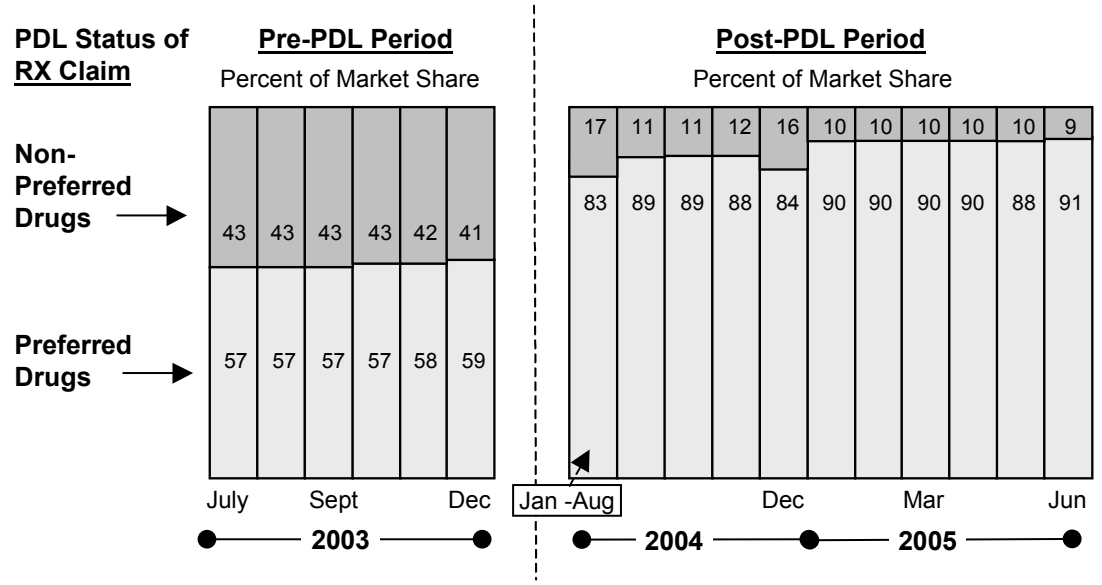
To determine the magnitude of the savings in the pharmacy program, DMAS staff conducted two separate but related analyses. Before estimating actual savings, DMAS staff determined if and how much of a shift has occurred in the share of the Medicaid drug market for preferred versus non-preferred drugs. Next, using the results from earlier forecast models, a comparison was made of the amount the agency was projected to spend on prescription drugs before the PDL initiative was established to the amount actually spent following the implementation of this program.

PDL-Generated Market Shift. In the year prior to the implementation of the PDL, approximately six of ten drugs paid for through the Medicaid pharmacy program were for drugs that would not have been on the PDL had the PDL been in place at that time. Thus, if the program were to have the desired fiscal impact, the share of the Medicaid market owned by manufacturers of drugs on the PDL would have to substantially increase.

DMAS staff examined changes in the trend by tracking market share from one year prior to PDL implementation through the 18-month period over which the program has been gradually phased in. As revealed in Figure 5, there has been a dramatic shift in market share brought about by the PDL program. Specifically, while the monthly market share for drugs on the PDL was around 57 percent in the year prior to the implementation of the program, following the start of the program, this figure steadily increased each month. By the end of June 2005, 91 percent of all PDL-eligible drugs paid for by the Medicaid program were for those on the PDL.

Figure 5

Trend In Market Share For Drugs On Virginia's PDL



Source: DMAS staff analysis of Medicaid pharmacy claims data

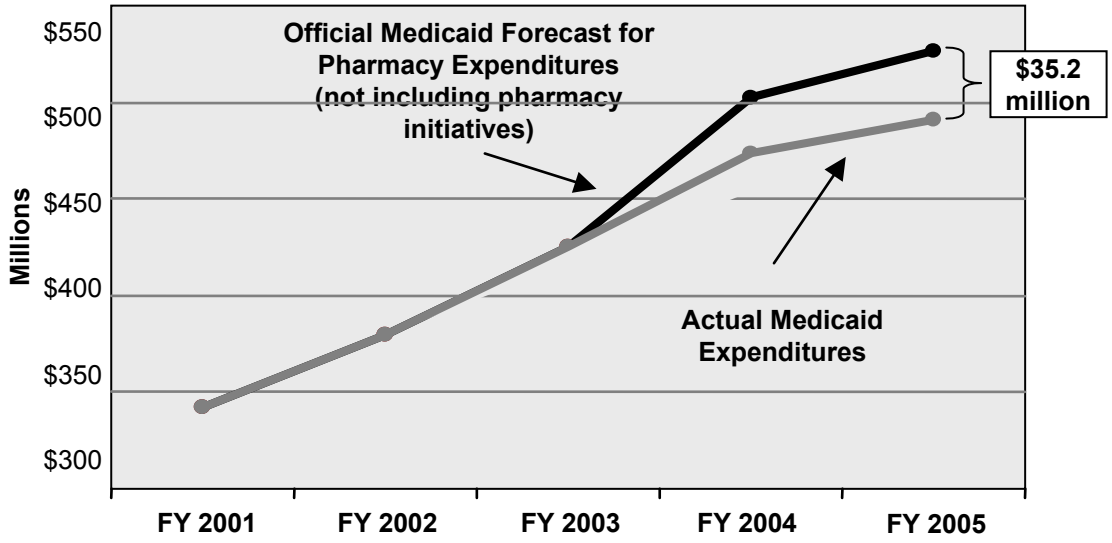
Estimated Medicaid Pharmacy Savings. To quantify the impact of this market shift in savings to the pharmacy program, DMAS staff compared the official Medicaid forecast for pharmacy expenditures to actual Medicaid expenditures at the end of FY 2005. The official forecast is produced using a time series forecasting technique called exponential smoothing. This statistical technique is a weighted moving average applied, in this case, to time series pharmacy expenditure data organized on a monthly basis. The moving average predicts the next monthly value in the time series using the average from previous observations. With moving averages, observations get less weight as the data points are predicted farther in the future.

Figure 6 illustrates the results from this comparison. As shown, in FY 2005, the official Medicaid forecast projected that DMAS would spend $526 million for pharmacy services without the PDL program and other pharmacy initiatives in place. This amount is net of the manufacturers' rebates that are collected by the federal government and passed along to the State.

It is important to note that the $35 million savings amount illustrated in Figure 6 cannot be attributed solely to the PDL. During the 18-month period over which these savings have been calculated, DMAS implemented other pharmacy initiatives that were designed to reduce expenditures on prescription drugs. In some cases, these initiatives and the PDL program have impacted the same drug claim. Attempts to decompose the savings into amounts due to the PDL and other pharmacy initiatives were not

Figure 6

Estimated Savings in the Pharmacy Program Since Implementation of the PDL And Other Initiaitves



Source: DMAS staff analysis of monthly Medicaid pharmacy claims data

successful. Accordingly, the savings reported here are total savings for the pharmacy program.

The Health Impacts Associated With Use of Preferred Drug List

The principal criticism leveled at PDL programs is that changing patients from non-preferred to preferred drugs destabilizes their medical conditions causing a number of adverse reactions. Proponents of this view contend that this destabilization can be seen in greater utilization of health care services and, in the case of Medicaid recipients, higher program cost. Under this scenario, it is argued that states that employ PDLs are pursuing short-term savings in their Medicaid drug programs at the expense of the health of its Medicaid recipients.

DMAS staff examined this issue by comparing Medicaid spending and healthcare utilization patterns for Medicaid recipients who were switched from non-preferred to preferred drugs with a control group of persons who were allowed to remain on their non-preferred drugs. Based on the results observed in this study, there is no evidence to support the view that Virginia's PDL program causes adverse health outcomes. Specifically, no differences could be found between these groups in total Medicaid spending, the degree and cost of inpatient hospitalizations, and the frequency of emergency room visits.

Virginia's PDL Program Does Not Produce Adverse Health Outcomes

Four research questions shaped DMAS' effort to assess the health impacts of the PDL program.

- Are there meaningful differences observed in the total amount of Medicaid spending for PDL members and the control group?
- Do differences exist in the Medicaid spending levels for hospital care for persons in the PDL and control groups?
- What, if any, differences are observed in the utilization of inpatient hospital care for PDL and control group members?
- Do PDL recipients utilize emergency departments for care at a higher rate than their counterparts in the control group?

To address these questions, DMAS staff had to identify a PDL and control group of Medicaid recipients, establish the follow-up period that would be used to evaluate post-PDL Medicaid utilization patterns, and analyze the outcomes to determine if meaningful differences exist between the two study groups.

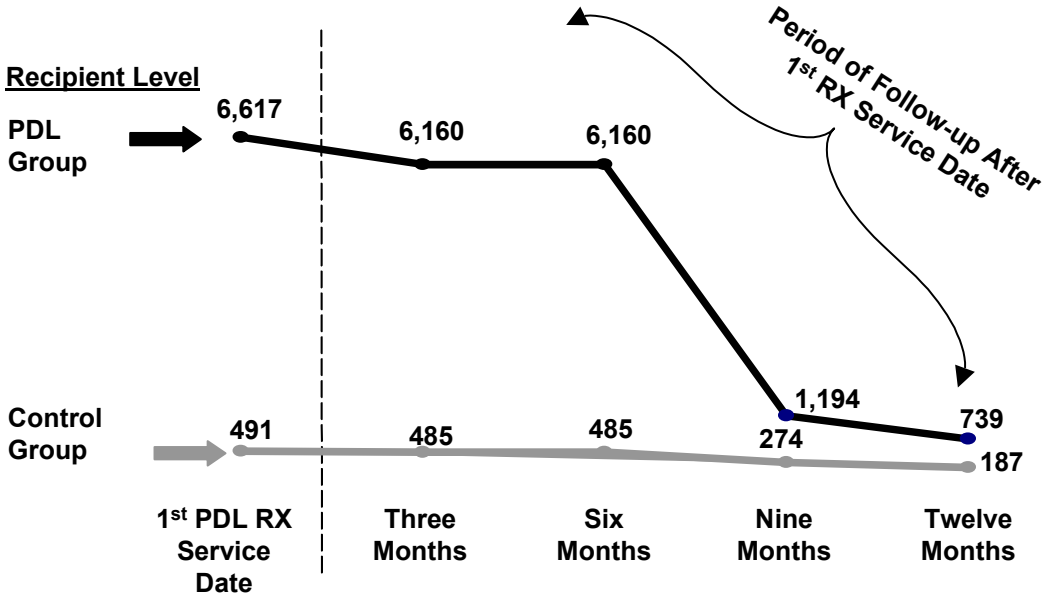
Identifying Study Groups. The first step in this analysis was the selection of the study groups. This was accomplished by identifying all recipients who could be classified into one of the following two groups:

- PDL Program Group. Medicaid recipients who were switched from non-preferred to preferred drugs after the PDL program started and who had no record of receiving any non-preferred drugs during the entire follow-up period.
- Control Group. Medicaid recipients who were allowed to remain on non-preferred drugs after the PDL program started and who had no record of receiving any drugs on the PDL during the follow-up period.

Establishing The Post-Program Follow-up Period. At the time this study was conducted, Medicaid claims were available through May 2005. Thus the post-program period for each recipient in the study began with the first date they received a PDL-eligible drug and ended in May 2005. Because there were no uniform start dates for the study, the length of the follow-up period varied considerably for some study members (Figure 7). Thus, based on these parameters, DMAS staff attempted to select the longest post-program period that could be used without losing an unacceptable

number of study members. Accordingly, for this study, a nine-month period of follow-up was chosen.

Figure 7
Change In Size Of Study Group Based On Length Of Follow-up Period



Source: DMAS staff analysis of Medicaid pharmacy claims data

Comparison of Outcomes for the Two Study Groups. Once the follow-period was selected, DMAS staff compared outcomes for the PDL and control group using the following measures:

- Total Medicaid spending (excluding waiver and long-term care maintenance costs)
- Total hospital spending
- Number of inpatient hospitalizations
- Number of emergency room visits

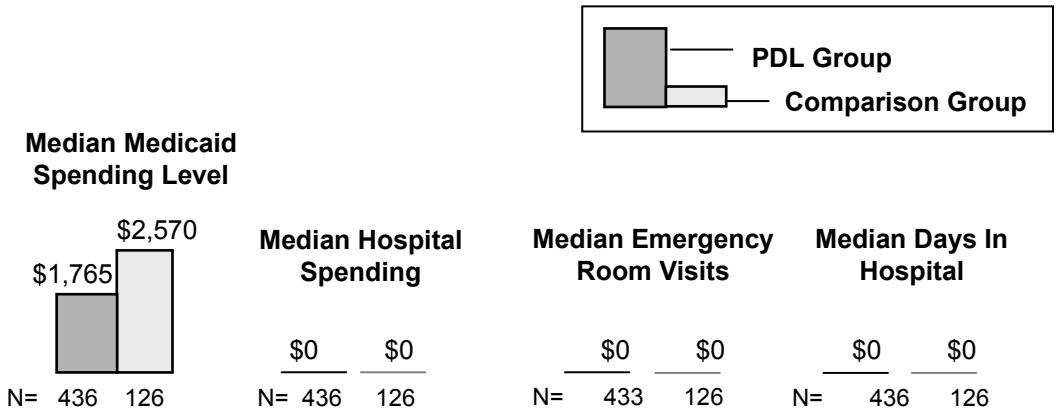
As noted earlier, opponents of Virginia's PDL believe the savings which are generated by the program will be partially, if not completely offset, by higher Medicaid spending for PDL participants. They believe this higher spending will be manifest in more frequent visits to the emergency room and longer hospital stays for patients whose medical conditions will be aggravated by the sudden switch in their medications.

To test this theory, each of the outcome measures described on page 16 were annualized based on nine months of follow-up data. Further, to account for possible differences in the time recipients actually spent on Medicaid, these outcomes were adjusted by the number of days each study member was covered by Medicaid during the post-program period.

In conducting the analysis, DMAS staff encountered recurring problems with outliers in the data for each outcome measure. Specifically, the average values were highly skewed and not representative of the distribution of the data for each outcome measure. As result, the median for each of the outcome measures was used as the basis for the analysis.

Figure 8 reports the results of this analysis. As shown, in the follow-up period, Medicaid recipients whose medications were switched from drugs that were not on the PDL to those that were on the PDL actually had a lower median amount of total Medicaid spending ($1,750) than the control group ($2,570). With regards

Figure 8
A Comparison Of Medicaid Spending And Healthcare Utilization For The PDL And Control Group



Notes: Outcome data are annualized based on 9 months of data in the post-PDL period and are adjusted by the number of days each recipient was eligible during the period. Persons with Medicare coverage were excluded from this analysis. Median (rather than mean) values are reported because outliers in the data produced average values that were highly skewed and therefore not representative of the distributions of the data. Regression models were developed for each outcome measure and they confirm the results of no differences in outcomes between the two groups which are reported in this graphic.

to the other outcomes, there was no difference in the median values across the two study groups.

For inpatient hospital use – total spending and total days spent in the hospital -- and the number of emergency room visits, the results presented in Figure 8 indicate that the median values for these measures were zero for both the PDL and control group. This means that the typical Medicaid recipient in the PDL and control groups did not visit the emergency room or hospital in the nine-month period following the date they received their prescriptions for PDL-eligible drugs. Considered together these findings indicate that the PDL program does not produce adverse health consequences for its participants.