Evaluation of State Pharmacy Assistance Programs in Illinois and Wisconsin

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EXECUTIVE SUMMARY

Overview

In 2002, the Centers for Medicare & Medicaid Services (CMS) selected Brandeis University under a competitive procurement to evaluate the portion of the State Pharmacy Assistance Programs in Illinois and Wisconsin funded through a section 1115 Medicaid waiver. Both state programs are called SeniorCare. Ohio, with its parallels to both states, served as a comparison state for several tasks in the evaluation.

The Medicaid waiver portion of the SeniorCare programs in Illinois and Wisconsin were designed to increase access to prescription drugs for their enrollees, who were elders aged 65 and older with incomes below 200% of the Federal Poverty Level but not eligible for Medicaid. Elders in this income range often have difficulties affording the prescription drugs they need.

Task 1 describes program description and process evaluation in each state, showing that the programs were implemented quickly and generally effectively in both states. Task 2 reports on the survey of beneficiaries; showing that in both states SeniorCare substantially reduced financial hardship and skimping on prescribed drugs. Task 3 presents a program descriptive analysis examining enrollment, utilization, and costs of prescription medications and other services under the program based primarily on program data, showing that both programs provided a broad range of prescription drugs with program costs of about $1,000 per enrollee per year.

As better access to prescription drugs is believed to improve health status for elders, and thus may reduce spending on other health services, Task 4 of the evaluation examines whether the increased access provided by the state pharmacy assistance programs improved health status sufficiently to reduce Medicaid costs, through keeping enrollees off of Medicaid and lowering costs for any enrollees who did enter Medicaid. Task 5 researchers whether SeniorCare enrollees had lower first year Medicare costs compared to matched Ohio beneficiaries, finding no savings in Illinois and extremely modest savings in Wisconsin.

Overall, the evaluation found that SeniorCare in both states was successfully implemented with relatively few problems despite severe time pressure. The survey found that the programs were associated important successes in use of prescription drugs. They were associated with a dramatic reduction in self-reported going without necessities and skipping prescribed drugs for financial reasons, particularly among the most vulnerable beneficiaries. In both states, among the financially most vulnerable populations (buy in members), SeniorCare enrollment was associated with reductions in Medicaid expenditures and nursing home entry about 50% compared to Ohio. In Wisconsin, Medicaid entry was also reduced. In Illinois, Medicaid entry grew apparently with low cost community members—perhaps as a byproduct of SeniorCare identifying people who may have been eligible before but did apply (the woodwork effect). The lessons from these two states should contribute to the continuing operation of SeniorCare in Wisconsin and to informing future discussions about prescription drug coverage in the elderly.

These waivers were initiated, this evaluation was designed, and most of the evaluation data were collected prior to the implementation of Medicare Part D. Since that law took effect on January 1, 2006, all seniors have the opportunity to obtain drug coverage under Medicare.

Task 1: Program Implementation

Objective

The objective of Task 1, the first step in the study, was to conduct a process evaluation, documenting program implementation in each state through the first year of the program. This was accomplished through an initial site visit in each state with follow-up phone conferences, supplemented by program data regarding design and implementation. The site visits set the stage for interactions with each state over the course of the evaluation. Specific objectives under Task 1 include the following:

- To document the development and design of the waiver programs
- To describe the process by which each program has been implemented
- To describe the organization, goals, operations, outcomes and costs of the program, and how these are being measured internally.
- To understand and describe the program officials' and stakeholders' perspectives on the Senior Care program and its relation to other state programs (Medicaid and Circuit Breaker), including its design and implementation, achieved goals to date, and key problem areas and success factors.

Brandeis evaluators conducted site visits in January and March of 2003, during the first year of each state's program. The researchers interviewed key administrative personnel from the Senior Care program in each state, as well as legislators, senior advocacy groups, pharmacists, and other stakeholders. The investigators also obtained program data to provide a comprehensive picture of implementation.

Findings about Illinois SeniorCare

Illinois SeniorCare began operation on June 1, 2002. Illinois SeniorCare is run by the Illinois Department of Public Aid (DPA) Medical Programs Division in conjunction with the Illinois Department of Revenue (IDR). It covers individuals aged 65+ whose incomes are at or below 200 percent of the federal poverty level (FPL), who are U.S. citizens or eligible noncitizens, and who are not enrolled in Medicaid. IDR conducts all intake and enrollment-related activities for SeniorCare, and DPA oversees all program activities. In the first year of SeniorCare operations, an outside entity was involved, Express-Scripts Inc. (ESI), a pharmacy benefit manager (PBM) that administered the SeniorCare benefit and processed claims. The contract with ESI ended on June 30, 2003 and was not renewed. Claims processing and drug management activities were subsequently conducted for Illinois SeniorCare through the Illinois Medicaid program.

Illinois SeniorCare was an expansion of an earlier program, Circuit Breaker (CB) Prescription Assistance Program (PAP), which provided prescription drug coverage for designated chronic diseases. When the SeniorCare demonstration program began operation, all (approximately 121,000) members of CB-PAP who were age 65 or older with incomes up to 200 FPL (and not enrolled in Medicaid) were rolled over into the SeniorCare program. CB-PAP (a state-only financed program) then covered those individuals who are aged or disabled, with incomes between 200 percent and approximately 250 percent FPL (approximately 50,000 members).

Through the end of the first full state fiscal year of operation (June 1, 2002-June 30, 2003), Illinois Senior Care implementation followed the design laid out in the operational protocol that Illinois Department of Public Aid submitted to CMS as part of its demonstration. As of December 2, 2003, it covered 172,333 seniors. By the end of the first full fiscal year of the

program (through June 30, 2003), Illinois Senior Care had 174,250 enrollees, including: 121,000 "roll over members" from Circuit Breaker PAP taking the drug benefit, 47,782 new enrollees taking the drug benefit (including some who had registered in advance so as to be eligible for benefits from the start of the program.

In addition, Illinois had 5,468 seniors receiving a $25 per month rebate for being eligible for SeniorCare and waiving its drug benefit. The Illinois program included this rebate to avoid "crowd out," in which enrollment in a publicly subsidized program would replace membership in an existing, privately funded drug program. The procedures for requesting the rebate were complex (the enrollee had to first enroll in the drug benefit and then waive it a month later) and the number of enrollees using it (3% of total enrollees) was smaller than expected. If an Illinois SeniorCare enrollee had dual coverage (which was allowed), the "coordination of benefits" in claims processing was supposed to pay first from the other policy and charge SeniorCare only for the excess. SeniorCare officials reported, however, that they rarely found dual insurance.

Illinois SeniorCare succeeded in providing outpatient prescription drug benefits to a large number of the state's low-income seniors within the cost originally anticipated. Several issues emerged during the first year of operation and some significant changes were made. These issues include: initial problems with customer assistance in enrollment related to mis-communication with the public and the dual involvement of IDR and DPA; transition issues related to the program shift from use of PBM services to internal management of the benefit through the Medicaid program after the first year of operation; and lower-than-expected re-enrollment by initial SeniorCare members, which necessitated extension of their June 2003 reenrollment deadline by three months and warranted increased outreach efforts.

With implementation of the Medicare Part D prescription drug benefit in January 2006, the Illinois SeniorCare and Circuit Breaker programs were ended and the waiver program discontinued. A new state program, Illinois Caresrx, was implemented as a "wrap-around" to supplement drug benefits provided by Medicare for this population.

Findings about Wisconsin SeniorCare

Wisconsin SeniorCare was developed and is operated by the Wisconsin Department of Health and Family Services (DHFS), the state agency that administers Wisconsin Medicaid. Wisconsin Senior Care covers residents aged 65 and older and not in Medicaid. It was implemented Sept. 1, 2002. It has two components. A federally funded demonstration under section 1115 of the Medicaid Act covers seniors with incomes up to 200% of Federal Poverty Level (FPL). Seniors between 200% and 240% of the FPL are eligible for a program with identical benefits but funded entirely through state money.

The demonstration application, CMS approval, and implementation of the program were achieved rapidly, with initial enrollment within nine months after legislation passed. This was remarkable in light of all of the preparations necessary, from designing enrollment forms and data management systems, to educating the public about the new program. Successful and rapid ramp up to implementation was achieved largely due to thorough communication by program officials with consumer networks, the involvement of the senior area network benefits specialists who signed up individuals, a strong mandate from high levels within the state DHFS, and the capacity of the state Medicaid pharmacy point-of-sale (POS) claims system to be adapted to support the program.

Wisconsin SeniorCare has several levels of eligibility and benefits, depending on income, with Members at higher income levels covered by the state-only SeniorCare program. All members have an application fee ($30), and most have deductible and tiered copayments, with no maximum to the benefit. Claims are administered through the Medicaid POS claims system, rather than being carved out to a pharmacy benefits manager (PBM); SeniorCare follows the Wisconsin Medicaid formulary, and all Medicaid pharmacies participate in SeniorCare.

Implementation of Wisconsin SeniorCare went smoothly in its first year. The overall enrollment as of August 31, 2003 included 68,292 participants for the 1115 demonstration portion of the group and 93,552 overall for the demonstration and state-only portions combined. SeniorCare reported program costs (for drugs and dispensing fees, net of member cost sharing, and before manufacturer rebates) were $79.5 million for the year ending August 31, 2003 (with the Medicaid demonstration portion of the program $62.2 million before rebates). Reenrollment in the first few months of year 2 was also successful, with over 90 percent of SeniorCare enrollees who received any benefits through the program during the first membership year reenrolling in the program.

During the first year of operation, Wisconsin SeniorCare program activities generally proceeded according to the operational protocols provided to CMS and mandates set forth by state legislation and remained within its projected budget.

During the year, several challenges emerged that were addressed. First, a potential problem arose regarding pharmacist participation in SeniorCare, because pharmacists' reimbursement rates for SeniorCare are pegged to the Medicaid reimbursement rates, and these payment rates were threatened in a Medicaid budget negotiation. Perhaps in part due to the very strong public and political support of the SeniorCare program, a legislative compromise was made that was acceptable to pharmacists. Reenrollment initially presented a challenge as data systems had to be developed to support the process, and a major focus was placed on making reenrollment easily accessible to members. Also, the active involvement of, and collaboration with, the Wisconsin senior advocacy network was very important in facilitating successful enrollment and reenrollment.

With implementation of the Medicare Drug Benefit (Part D) in January 2006, Wisconsin SeniorCare continued and enrollment in WSC was deemed "creditable coverage" as an alternative to a Medicare Part D plan through June 30, 2007. On April 3, 2007, CMS notified the state that the agency would not renew the Pharmacy Plus waiver under which the SeniorCare program operates, which was scheduled to expire on June 30, 2007.

However, on May 25, 2007, President Bush signed H.R. 2206 (the U.S. Troop Readiness, Veterans' Care, Katrina Recovery, and Iraq Accountability Appropriations Act). This legislation included a provision that permitted Wisconsin to elect to continue the waiver through December 31, 2009, and, if the state so elects, requires CMS to approve the continuation of the waiver through December 31, 2009. As a result of this federal legislation, the Wisconsin DHFS plans to continue operating SeniorCare until the authority expires (currently December 31, 2009).

Task 2: Enrollee Survey

Previous research by T. Rector and colleagues and D. Safran and colleagues has documented the widespread problems in paying for prescription drugs among low income populations because they often lack prescription drug insurance at the time of implementation (2002). To our

knowledge, this is the first survey documenting the extent to which a publicly funded prescription drug program alleviated these problems. As noted above, in 2002, the states of Illinois and Wisconsin both implemented low-income State Pharmacy Assistance Programs for their seniors, called SeniorCare. Seniors between 100% and 200% of the Federal Poverty Level, and those below 100% with assets that made them ineligible for Medicaid, were eligible for SeniorCare, which received a federal subsidy under a section 1115 Medicaid waiver.

Low-income seniors needing to pay for prescribed medications and other household necessities often face a painful choice: pay for the medications but forego other necessities, or forego some medications to maintain the other necessities. The two dependent variables in this study measure each of these choices. The first variable is skimping, defined as skipping doses or not filling prescriptions for financial reasons. The second variable is the respondent's answer that he or she had to go without necessities in order to pay for prescription drugs. The study examines these two diverse outcomes for the six-month period prior to entering SeniorCare as a measure of their prescription-drug related financial stress prior to receiving this public assistance. It also analyses the two variables for the most recent six-month period (all within SeniorCare) for evaluating the impact of SeniorCare. An overall economic hardship variable is also used to evaluate the program. To determine the impacts, we surveyed a random sample of 2,227 enrollees in SeniorCare from both states.

Averaging both states, we found high rates of skimping on medications (29.4%) and going without life necessities (36.2%) before the implementation of the program. After SeniorCare the rates of skimping and of going without necessities fell to 13.1% and 17.3%, respectively. Thus, SeniorCare cut by about half these two measures of hardship. The program was particularly effective in targeting the most at-risk subpopulations; the largest reductions in skimping and going without necessities were among enrollees in the highest risk categories. These were persons with income below 160% FPL, multiple treated conditions but fewer life-threatening conditions, not married, no private health insurance, no other prescription drug insurance, non-white, and members of the roll-over group (denoting a sustained need for subsidized medications). After controlling for enrollee characteristics and risk score, the Illinois and Wisconsin programs were both highly effective in reducing economic hardship. Particularly noteworthy, the survey analysis stratified respondents into three equal-sized strata (tertiles) according to their predicted likelihood of going without necessities and of skimping. The study found that the respondents in the tertile at the highest risk of going without necessities or of skimping obtained the greatest improvement, in terms of the percentage point change in probability of going without necessities or of skimping.

Tasks 3: Program Utilization and Costs

The Illinois and Wisconsin state pharmacy assistance programs provide financing for outpatient pharmacy therapies for large numbers of elderly, low-income residents. The programs are designed to operate as extensions of the state Medicaid program, offering financing for outpatient pharmacy services to elderly beneficiaries previously not eligible for full Medicaid benefits.

Monthly program payments and enrollments were higher in the initial months in Illinois than in the initial months in Wisconsin, since most participants were "rolled over" from a pre-existing program. Illinois monthly caseloads grew by 35% over the first program year. The Wisconsin program, which had no predecessor, grew in caseload by 92% over the course of the first

program year. During year 1 (June 2002-May 2003), the Illinois program had an average monthly caseload of almost 153,000 eligibles and spent $1,394 per enrollee year. Illinois participants paid $219 in co-payments. The Illinois total annual cost per enrollee-year was $1,614. The Wisconsin program in year 1 (September 2002-August 2003) had an average monthly caseload of close to 61,000 enrollees. The Wisconsin cost per enrollee year was $1,032. Total patient copayments and deductibles averaged $461 annually. The Wisconsin total annual cost per enrollee-year was $1,493.

In both states, the profile of enrollees differed from the aged Medicare populations in their states in ways consistent with persons needing subsidized prescription drugs. Enrollees were more likely to be female, older, and more rural and using more Medicare financed durable medical equipment and home care. Enrollees were also more likely to have diagnoses for chronic diseases likely to require regular outpatient medications (e.g. diabetes, congestive heart failure, heart disease, stroke, chronic obstructive pulmonary disease, and arthritis).

Tasks 4 and 5: Impact on Medicaid and Medicare

Objectives

The SeniorCare programs in Illinois and Wisconsin were designed to increase access to prescription drugs for their enrollees, who were Medicare-enrolled elders aged 65 and older with incomes below 200% of the Federal poverty level (FPL) but not enrolled in Medicaid. Elders in this income range often have difficulties affording the prescription drugs they need. Better access to prescription drugs is believed to improve health status for elders, and thus may reduce spending on other health services.

Task 4 of the evaluation examines whether the increased access provided by SeniorCare improved health status sufficiently to reduce Medicaid costs, through keeping enrollees off of Medicaid and lowering costs for any enrollees who did enter Medicaid. Task 5 of the evaluation examines whether the increased access provided by SeniorCare reduces the use of and expenditures on health services funded by Medicare.

We developed comparison populations of similar elders in another state (Ohio) for each SeniorCare program so that outcomes could be compared with and without the SeniorCare programs. We required exact matches on demographic and disease categories, and then used propensity score to match as closely as possible on remaining characteristics, including census information as proxies for socio-economic characteristics. For examining Medicaid-related services and costs, matching precisely by income proved critical. This is because Medicaid is a means-tested program. Persons with income and assets below the threshold receive full benefits, while those above the threshold are ineligible. However, states are required to "buy in" the cost-sharing otherwise borne by Medicare beneficiaries based on certain levels of eligibility. For the purpose of this study, we limited the analysis of Medicaid entry to the buy-in population SeniorCare and matched with buy-in elders in Ohio. The buy-in programs (Qualified Medicare Beneficiary, QMB, and Special Low Income Medicare Beneficiary, SLMB) are also means tested programs with income or assets above the Medicaid ceiling, but income below about 120% of the federal poverty level. This process ensured comparability. We thus matched 7,699 Illinois and 1,798 Wisconsin buy-in beneficiaries to one-to-one to the same numbers of matched buy-in Ohio controls. They constitute 6.0% and 3.6% of all SeniorCare beneficiaries in the two states that could be matched, respectively.

We also explored whether a broader comparison of all SeniorCare enrollees and matched controls was possible, regardless of buy-in status. Our analysis showed that the SeniorCare enrollees tended to have lower income than the average in the neighborhoods (census blocks) in which they lived. Therefore, an attempt to examine potential effects Medicaid entry by all SeniorCare enrollees and matched controls could be quite biased.

The effect of the SeniorCare programs on Medicare expenditures is discussed in the final section. For this task, exact matching on income was less critical, because Medicare is not a means tested program. Also, acute care spending is very skewed, so a large sample size is highly desirable. For this reason, Medicare comparisons were done using selected matches from all SeniorCare enrollees and all Ohio Medicare enrollees as possible controls.

Findings for Medicaid

In Illinois, where a preexisting program had been in place, SeniorCare did not reduce Medicaid entry, but did reduce nursing home entry and spending. Illinois SeniorCare buy-in beneficiaries had a higher rate of Medicaid entry in the first year (33%) than the matched Ohio controls (22%). Yet the cumulative rate of nursing home entry of Illinois SeniorCare buy-in beneficiaries (2.4%) was also half the rate of the matched Ohio controls (4.4%). Medicaid spending over the first year (and standard error), averaged over Medicaid entrants only, was $1,930 for former SeniorCare Illinois members and $7,281 for matched Ohio controls. These correspond to a relative spending of 0.27 for entrants from SeniorCare compared to control nursing home entrants; the 95% confidence interval is 0.23 to 0.27. Medicaid spending over the first year (and standard error of the mean), averaged over all Illinois SeniorCare members in the buy-in, was $631 $\pm$$26 for former SeniorCare Illinois members and $1,605 $\pm$$83 for matched Ohio controls. The savings per buy-in enrollee is $974 $\pm$$87. In percentage terms, the reduction is 61%, with a 95% confidence interval of 56% to 66%. Since the cost per enrollee year in Illinois was $1,394 (excluding beneficiary co-payments), the first year savings in Medicaid among buy-in members were not quite sufficient to cover the program costs to the state.

In Wisconsin, SeniorCare offers substantial benefits around reducing Medicaid costs. SeniorCare buy-in beneficiaries had half the rate of Medicaid entry in the first year (11%) than the matched Ohio controls (22%). The cumulative rate of nursing home entry of SeniorCare buy-in beneficiaries (2.2%) was also about half the rate of the matched Ohio controls (4.5%). Finally, Medicaid spending over the first year averaged over Medicaid entrants only, was $2,563 $\pm$$314 for former SeniorCare Wisconsin members and $6,716 $\pm$$657 for matched Ohio controls. This corresponds to a reduction per enrollee of $4,153 $\pm$$728 and in spending per Medicaid entrant, $p<.0001$ and $1,190 $\pm$$163 in spending per buy in enrollee, $p<.0001$. In percentage terms, the reductions are 62% and 81%, respectively, with a 95% confidence interval on savings per enrollee of 74% to 87%. In Wisconsin, these savings were greater than the state's share of first year program costs per enrollee year ($1,032), excluding beneficiary payments.

Overall, the savings in the buy-in population were not quite enough to pay for the program costs in Illinois, but were more than sufficient in Wisconsin. Had multiple years of data been available for analysis, it is possible that cumulative Medicaid savings might have been found if successively larger proportions of enrollees were diverted from Medicaid-funded nursing home entry.

As mentioned, existing administrative data were not adequate to evaluate Medicaid entry on enrollees who were above the buy-in threshold (94.0% of matched enrollees in Illinois and

96.4% in Wisconsin). Additional data, such as a survey in which respondents reported their current Medicaid status, their income, and ideally, their assets would be needed to compare Medicaid entry on other SeniorCare enrollees. If such data were available, we would expect that they would also show savings in nursing home entry and spending, but both the absolute and relative effects would be smaller. The smaller effects would arise because enrollees would be further from the Medicaid threshold, so they would need a higher expenditure to make them eligible for Medicaid. Furthermore, these smaller effects might be offset by a "woodwork" effect in which publicity around SeniorCare might identify low-income seniors eligible for, but not previously enrolled in Medicaid.

Findings for Medicare costs

In examining Medicare costs, descriptive models (simple differences) found higher Medicare costs associated with SeniorCare. Econometric models that examined the difference in Medicare costs and inpatient utilization before and after the 2003 implementation of SeniorCare found evidence of offset effects for Medicare costs and inpatient utilization in Wisconsin (compared to Ohio) but no evidence of offset effects in Illinois. In conclusion, Medicare Savings for Wisconsin SeniorCare were positive but very modest; no Medicare savings were evident for Illinois SeniorCare.

Our ability to examine impacts on both programs was limited by the short follow-up period (about one year). In Illinois in the first year, about 70% of the Medicare beneficiaries served by the Illinois SeniorCare program were rolled over from a previous state-only pharmacy program. These beneficiaries had more chronic illness and higher Medicare expenditures than beneficiaries who joined later. These benefits were also unlikely to have experienced a substantial increase in their access to prescription drugs. Thus it is not surprising that the analysis has not found savings for Medicare among this population.

The Wisconsin SeniorCare program served beneficiaries who had not had a previous source of prescription drug coverage. Even in its first year, access to prescription drugs resulted in a modest saving in Medicare expenditures for this population, estimated to be $185 per beneficiary. It is important to recognize that the range of estimates uncovered by our analyses are truly modest – the annual savings are far less than the average cost per beneficiary of the Wisconsin SeniorCare program itself – but they represent increased wellbeing for near-poor seniors and hold promise for future savings over a time period when prescription drugs can be expected to affect health status.

TASK 1: PROGRAM DESCRIPTION AND PROCESS EVALUATION

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Note: The final reports on this task were submitted to the sponsor (CMS) on March 18, 2004 and subsequently accepted. Copies of the Illinois and Wisconsin reports are included as Appendix 7 and Appendix 8, respectively, to this final report.

TASK 2: SURVEY OF ENROLLEES

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Abstract

Previous research by Rector and colleagues and Safran and colleagues has documented that the widespread problem in paying for prescription drugs among low-income populations is often because they lack prescription drug insurance. We are not aware of previous research documenting the extent to which a publicly funded prescription drug program alleviated these problems. In 2002, the states of Illinois and Wisconsin both implemented low income State Pharmacy Assistance Programs for their seniors, called SeniorCare. Seniors between 100% and 200% of the Federal Poverty Level, and those below 100% with assets that made them ineligible for Medicaid, were eligible for SeniorCare, which received a federal subsidy under a section 1115 Medicaid waiver. We surveyed a random sample of 2,227 enrollees in SeniorCare from both states, asking about prescription drug use and hardships for two non-overlapping 6-month reference periods. We found high rates of skimping on medications (29.4%) and going without life necessities (36.2%) before the implementation of the program. SeniorCare reduced the reported rate of skimping to 13.1% and the rate of going without necessities to 17.3%. Thus, SeniorCare apparently cut by about half these two measures of hardship. The program was particularly effective in targeting the most at-risk subpopulations; the largest reductions in skimping and going without necessities were among enrollees in the highest risk categories. Although we were concerned about possible recall biases, the consistency between diagnoses mentioned on the survey with those in Medicare claims suggested the responses were generally accurate. Both the Illinois and Wisconsin programs appear to have been highly effective in reducing skimping and economic hardship.

Introduction

Background

The affordability of prescription drugs is a growing concern in the United States. It is particularly a problem for Medicare beneficiaries, whose drug expenses tend to be very high. Prescription

drugs are a vital part of health care for the great majority of senior citizens, but for many, cost is a barrier to access.

Two surveys have quantified of cost-related drug non-adherence. In 2005, Safran[1] published the results of a comprehensive, nationwide 2003 survey of low-income Medicare enrollees. The findings showed that cost-related drug non-adherence is a major problem, with 35 percent of low-income seniors reporting at least one instance of cost-related drug non-adherence in the past year. Another survey, published in 2004 by Rector[2], studied a population of 1,500 low-income, chronically ill Medicare + Choice enrollees. Almost a third of enrollees reported cost-related medication non-adherence. These surveys showed low-income people resort to skipping or lowering prescribed doses, or not filling all prescriptions. Others have to make difficult decisions between paying for lifesaving medications and paying for heating or food. This study documents this problem among low-income seniors in Illinois and Wisconsin, and, most importantly, evaluates the impact of a prescription drug program.

The specifications for cost-related drug non-adherence varied slightly in the two prior studies. In this study, the type of non-adherence used is skimping. Skimping on medications is defined as skipping doses or not filling all prescriptions for financial reasons. The other measure of economic hardship considered is going without necessities, which is forgoing life necessities (rent, food, heat, etc) to be able to pay for prescription drugs.

SeniorCare program description

Illinois and Wisconsin were among two of the states that responded to the high levels of economic hardship (skimping and going without necessities) caused by costly prescription drugs. The states implemented programs that provide low-income seniors with publicly-funded prescription drug assistance based on Medicaid waivers. Both states called their programs SeniorCare (SC). Their implementation is described in two previous reports (see Appendix 7 and 8).[3],[4]

The programs in Illinois and Wisconsin were similar in that they initially covered seniors with incomes of up to 200% of the federal poverty level (FPL) and had no asset test for eligibility. Illinois enrollees included some that had rolled over from a previous pharmacy program. The Wisconsin program was completely new. Benefit structures of the programs differed slightly,

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[1] Safran, D. G., Neuman, P. et al., "Prescription Drug Coverage and Seniors: Findings from a 2003 National Survey," Health Affairs Web Exclusive (Apr. 19, 2005):W5-152–W5-166.

[2] Rector TS, Venus PJ. Do drug benefits help Medicare beneficiaries afford prescribed drugs? Health Aff (Millwood). 2004;23:213-222.

[3] Thomas CP, Shepard DS, Bishop C. Illinois SeniorCare Program Description. Prepared for the Centers for Medicare & Medicaid Services under Contract Number CMS 500-00-0031/T.O. #2. Waltham, MA: Schneider Institutes for Health Policy, Brandeis University, 2004.

[4] Thomas CP, Shepard DS, Bishop C. Wisconsin SeniorCare Program Description. Prepared for the Centers for Medicare & Medicaid Services under Contract Number CMS 500-00-0031/T.O. #2. Waltham, MA: Schneider Institutes for Health Policy, Brandeis University, 2004.

with Illinois having no deductible, lower co-payments, over-the-counter medication coverage, and a 20% coinsurance rate after a cost of $1,750. Wisconsin had a $500 deductible for enrollees above 160% FPL, higher co-payments, no coverage for over-the-counter medications, but no coverage cap.

Illinois offered prescription benefit management for the first year while Wisconsin did not, but Illinois alone had included a "crowd out" provision to reduce the risk that subsidized public insurance would crowd out pre-existing private coverage. The provision provided an incentive payment of $25 per month to enrollees with existing private coverage, so that the enrollees would maintain private coverage and not enroll in SeniorCare. Illinois SeniorCare enrollees were also able to keep prior private coverage and use it as a coordinated benefit with SeniorCare, in which case they would not receive the $25 incentive payment. As described in the Task 1 report, few Illinois enrollees exercised either option. This suggests that few SeniorCare enrollees had prior private insurance coverage for prescription drugs, or that if they did, it was extremely limited.

With additional funding from the program on Health Care Financing and Organization (HCFO) led by Dr. Cindy Thomas, members of the investigative team compared the effects of the Illinois and Wisconsin programs. They found that the enrollees were generally similar between the two states except that the Illinois program had fewer enrollees with mental health diagnoses, a legacy of the preceding Circuit Breaker program that did not include medications for these conditions. Also, the Wisconsin program had a higher rate of generic drug use due to higher beneficiary co-payments for brand drugs and was less expensive per enrollee to the state. Further data are reported in Task 3 of this report.

Study purpose

The states hypothesized that SeniorCare would improve access to prescription drugs. The anticipated reduction in skimping would help to forestall Medicaid entry and thereby reduce Medicaid costs. It was also expected to reduce Medicare costs and improve the health and financial wellbeing of participants. Low-income seniors needing to pay for prescribed medications and other household necessities face a painful choice: pay for the medications but forego other necessities, or forego some medications to maintain the other necessities. The survey has three key goals. The first is to ascertain predictors of skimping and going without necessities before SeniorCare. The second is to measure the prevalence of skimping and going without necessities before and after SeniorCare to ascertain the overall change. The third is to examine program effects by risk groups.

Methods

Survey description

SeniorCare program data was collected in a spring 2003 phone survey. The survey was administered to a random sample of 2,227 SeniorCare enrollees from Illinois and Wisconsin. As the states had fully cleaned their enrollment data before the sample was collected, the survey included a screen to determine eligibility, followed by survey questions among those eligible.

The survey response rate was 88% among those contacted and eligible. As subcontractors to Brandeis, JEN Associates provided the survey sample and the University of Massachusetts Center for Survey Research administered the survey.

Questions included demographic data, health information, experiences with enrolling in SeniorCare, and questions about filling and using prescription medications. Answers were given both for the six-month period before SeniorCare was implemented, and for the last six months which were spent on SeniorCare. Enrollees were also asked whether their survey responses could be linked with medical claims data.

Variables

The two dependent variables in this study measure each of these choices. The first variable is skimping, defined as skipping doses or not filling prescriptions for financial reasons. The second variable is the respondent's answer that he or she had to go without necessities in order to pay for prescription drugs. The study examines these two variables for the six-month period prior to entering SeniorCare as a measure of their prescription-drug related financial stress prior to receiving this public assistance. It also analyses the two variables for the most recent six-month period (all within SeniorCare) for evaluating the impact of SeniorCare. As these questions were relevant only for persons with prescribed medications in the corresponding periods, the survey instructions led respondents to skip questions that did not apply; the denominators include only those respondents to whom the questions applied. Respondents for whom medications were prescribed were included, however, regardless of whether or not they reported filling these prescriptions.

Independent variables included demographics (age, gender, and race), diagnoses, and presence of a hospital. The survey was limited to respondents who had been enrolled in SeniorCare for at least 6 months at the time of the survey. The reference periods for the two sets of questions did not overlap. If an enrollee had been in SeniorCare longer than six months, then the there was an interim period not part of either reference period.

Recoding variables in survey data set

In order to perform statistical analysis on the survey data, many variables needed recoding. This required judgments on which responses would be recoded as missing. Answers of "Don't know" or answers that were undetermined ("Not Available") were treated as missing values. Usually, responses of "Inapplicable" were also treated as missing data, because the answer did not give any indication of the enrollee's behavior in a situation that did not apply to that enrollee. There were some exceptions if the "Inapplicable" answer indicated a clear "No" in a specific situation. Some variables that relate to the pre-Senior Care period, such as Health_Status, had to be recreated from variables that relate to the post-Senior Care period, such as Current_Health. This was done by taking into consideration the reported change in health status over the past year. The goal was to create consistency across time periods. Flags were created from some variables; a series of questions about race was turned into a binary "White race" variable. Income information was conveyed by a flag (Less_poor) indicating an income of greater than 160% FPL. The Skimp variable was calculated from logic commands that transformed several questions about prescription drug utilization habits into a binary skimping variable.

Statistical analysis

Multivariate logistic regression was used to examine the relation between independent variables and a dependent variable. Goodness of fit measures used included chi-square, Cox & Snell R

Square, and area under ROC curves. Other statistical analysis included measuring the significance of correlation between two variables with the Kendall's tau-b test.

Results

Enrollee characteristics

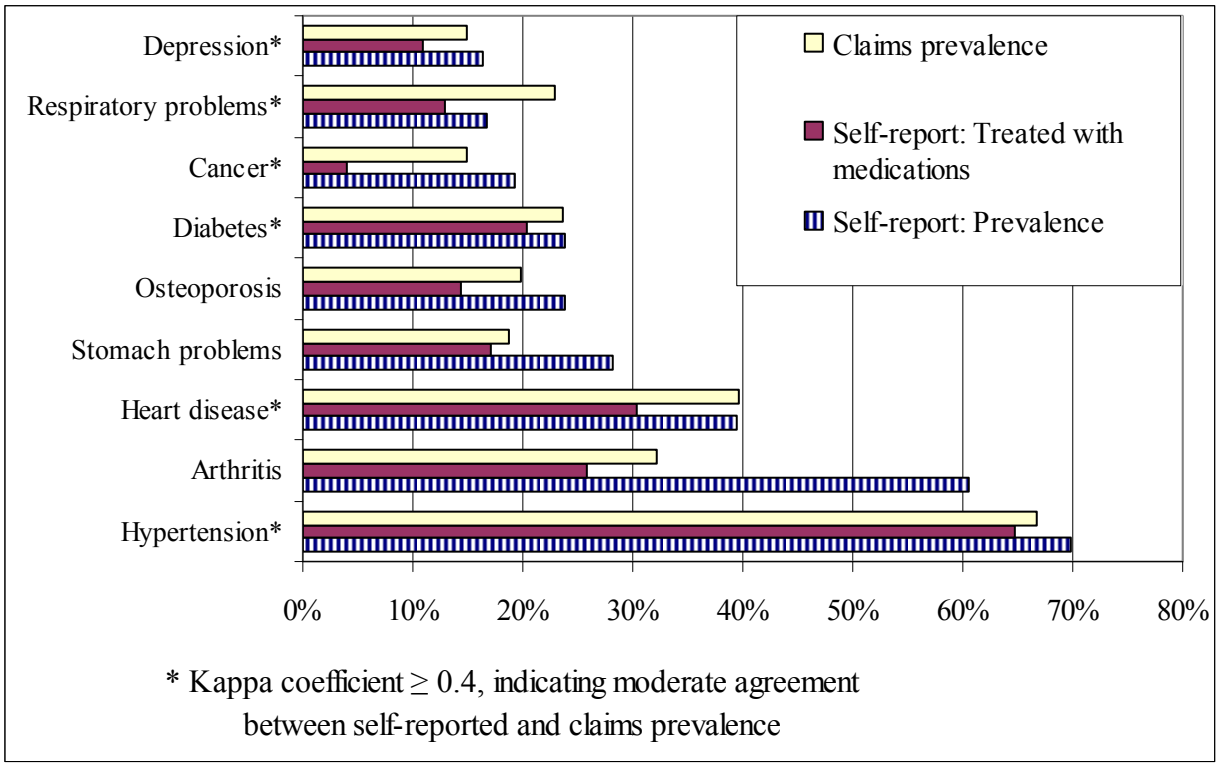
Wisconsin enrollees comprised 53.4% of the sample. New enrollees from Illinois made up 29.8% of the sample, and 16.8% were Illinois seniors who were rolled over to SeniorCare from a previous pharmacy program.

The mean age of a senior citizen in the sample was 77.4 years. 73.0% were female, 91.0% were white, and 31.5% were married. When adjusted for marital status, 33.8% of enrollees had income above 160% of the federal poverty level.

Seniors rated themselves on their general health at the time of the survey. The answers were on a scale of 1 to 5, with 1 being "excellent" health, and 5 being "poor." The mean rating was 3.31, which lies between "good" and "fair" health.

Self-reported health conditions included: High blood pressure, heart disease, breathing problems, cancer, diabetes, arthritis, osteoporosis, depression, and stomach problems. Figure 2.1 shows the self-reported prevalence of these conditions and, as discussed below, the claims prevalence. The conditions were not exclusive; the average respondent had two health self-reported conditions. A third of SeniorCare enrollees had at least one life-threatening health condition (heart disease or cancer).

Figure 2.1: Self-reported and claims prevalence of health conditions



Over half (57.2%) of enrollees had private health insurance in the six-month period before SeniorCare started. 18.6% had prescriptions through private health insurance. Having health insurance and a prescription plan was negatively correlated with high levels of economic hardship (i.e. skimping and going without necessities).

Of the respondents, 4.8% did not require any prescription drugs during the six-month period before SeniorCare was instituted. The rest had at least one prescription to fill or refill.

Data considerations

One issue that needs to be addressed in a survey is the accuracy of any self-reported data. In this case, it is possible to test the accuracy of data on the prevalence of various health conditions by comparing it to health claims data. A low level of agreement of self-reported and claims data might indicate that the survey has accuracy problems that go beyond one question.

The comparison of survey data and medical claims data (Table 2.1) revealed that there is a high level of congruence for most conditions. The few large differences that exist can be explained logically. The survey question, asked whether the patient ever had the condition, whereas the claims show treatment for that condition paid by Medicare within the past year. For some conditions, such as cancer, the condition may have been cured or be in remission and not receive treatment in the past year. Also, many people do not seek treatment for osteoarthritis from a health professional knowing that they may be unable to improve on over the counter treatment

(e.g. aspirin). This condition would therefore not show up on their claims data. Taken as a whole, self-reported data appears to be adequately accurate in this case.

Table 2.1: Rates of agreement among self-reported and claims prevalence (N=2227).

Condition	Prevalence of treatment of condition from claims	Prevalence of condition from self-report	Kappa*	p (statistical significance)**
Cancer	14.9%	19.5%	0.5079	<.0001
Diabetes	23.6%	23.9%	0.7003	0.7422
Depression	14.9%	16.7%	0.3456	0.0429
Hypertension	66.8%	70.2%	0.4044	0.0021
Heart Disease	39.6%	39.5%	0.4692	0.9314
Respiratory Disease	22.9%	17.0%	0.4766	<.0001
Ulcer	18.7%	28.5%	0.3603	<.0001
Arthritis	32.1%	60.7%	0.2508	<.0001
Osteoporosis	19.8%	24.1%	0.3944	<.0001

* The simple kappa coefficient measures the agreement between the raters beyond what would be expected by chance. A value of 0 indicates only chance agreement, and a value of 1 indicates complete agreement. Complete agreement occurs when all the off-diagonal counts are zero. A value of 0.4 indicates moderate agreement, and a value above 0.8 indicates very high agreement.

** The McNemar statistic tests the null hypothesis that there is no association. Statistical significance shows that claims and self report differ by more than chance.

Summary of economic hardship faced by seniors pre-SeniorCare

In the six month period before the start of SeniorCare 29.4% of seniors skimped on medications. This percentage varied considerably by sample. Only 25.0% of Wisconsin enrollees reported skimping, compared to 34.6% of Illinois enrollees that skimped. There were differences among Illinois seniors as well: New enrollees had much higher rates of skimping (38.3%) than did seniors who were rolled over from the previous Illinois pharmacy assistance program (28.1%).

Going without life necessities to afford medications was another common hardship. Overall, 36.2% of enrollees taking prescription drugs went without necessities in the six months before SeniorCare. Again, there were variations by sample: 34.3% of Wisconsin enrollees, 39.3% of

new Illinois enrollees, and 36.9% of Illinois rollover enrollees reported going without necessities in order to pay for prescription drugs.

Predictors of skimping in pre-SeniorCare period

Significant predictors of higher skimping in the pre-SeniorCare period included Illinois rollover status, income over 160% of federal poverty level, lower age, worse health status, greater number of health conditions treated, lower number of life-threatening health conditions (cancer or heart disease) treated, and absence of private health insurance, and absence of filling prescriptions through private insurance when adjusted for each other. The model predictors are shown in Table 2.2.

Table 2.2. Regression results: Predictors of skimping in pre-SC period:

Description, range or reference category	Variable name	B	S.E.	Sig.
Enrollee group (Reference category: Wisconsin enrollee)				
New enrollee in IL	ILnew	-0.015	0.158	0.924
Rollover enrollee in IL	Ilrollov**	0.446	0.128	0.000
Enrollee income (Reference category: income ≤160% FPL)				
Less poor enrollee (income >160% FPL)	less_poor*	-0.271	0.121	0.025
Enrollee age in nearest year when surveyed (integers, range 66 to 101)	age**	-0.060	0.009	0.000
Enrollee gender (Reference category: male enrollee)				
Female enrollee	female	-0.064	0.143	0.653
Self-reported health status over the year before SC (integers, 1 denotes poor, 7 denotes excellent)	health_status	-0.266	0.062	0.000
Number of treated health conditions (integers, range 0 to 7)	N_treated**	0.241	0.050	0.000
Number of life-threatening health conditions (integers, range 0 to 2)	N_lifethr**	-0.355	0.126	0.005
Marital status, according to program application (reference category: not married)				
Married	Strxmarriedf	0.024	0.137	0.858
Private health insurance previously (Reference category: no)				
Had private health insurance	priv_ins	-0.161	0.125	0.196
Private prescription insurance previously (Reference category: no)				
Had private prescription insurance	prescr_ins*	-0.411	0.162	0.011
Enrollee race (Reference category: non-white)				
Enrollee is white (including Hispanic)	Whiterec	-0.306	0.193	0.112
Constant	Constant	4.714	0.754	0.000

*p<.05, **p<.01

SeniorCare enrollees who were rolled over from Illinois' previous pharmacy program were much more likely to skimp on medications than enrollees in Wisconsin, while new Illinois enrollees did not have this relationship. Number of health conditions treated was also a positive predictor for skimping behavior. However, the presence of life-threatening conditions was a deterrent to skimping. Higher income, advanced age, having insurance that covers prescriptions, and better health status were other variables that were associated with less skimping.

As a whole, the regression model was highly significant ($p<.0001$). Cox & Snell R Square values are fairly low (0.094), showing that the model has only moderate ability to predict individual outcomes.

Predictors of going without necessities in pre-SeniorCare period

When adjusted for the effects of each other, age, health status, number of health conditions treated, and number of life-threatening health conditions treated were statistically significant predictors of going without necessities. Having more health conditions being treated was associated with higher rates of going without necessities. The presence of life-threatening health conditions, advanced age, and better health status were linked to a reduction in going without necessities. The regression results are presented in Table 2.3. The signs of all the variables in Table 2.3 are the same as those in Table 2.2. In most cases, the same sets of variables proved to be statistically significant. The two differences were logical consequences of the differences in the two measures. The Illinois rollover variable was significant on skimping as that population had indicated sufficient need for prescription drugs previously as to enroll, but yet were served by a limited program that excluded mental health and gastric drugs. The use of private insurance was protective against skimping, but not against going without necessities, as prescription filling was the service most directly benefited by such insurance.

Table 2.3: Regression results: Predictors of going without necessities in pre-SC period*:*

Description, range or reference category	Variable name	B	S.E.	Sig.
Enrollee group (Reference category: Wisconsin enrollee)				
New enrollee in IL	ILnew	-0.020	0.146	0.894
Rollover enrollee in IL	Ilrollov**	0.054	0.122	0.656
Enrollee income (Reference category: income ≤160% FPL)				
Less poor enrollee (income >160% FPL)	less_poor*	-0.147	0.112	0.190
Enrollee age in nearest year when surveyed (integers, range 66 to 101)	age**	-0.037	0.008	0.000
Enrollee gender (Reference category: male enrollee)				
Female enrollee	female	-0.019	0.135	0.886
Self-reported health status over the year before SC (integers, 1 denotes poor, 7 denotes excellent)	health_status	-0.305	0.058	0.000
Number of treated health conditions (integers, range 0 to 7)	N_treated**	0.244	0.047	0.000
Number of life-threatening health conditions (integers, range 0 to 2)	N_lifethr**	-0.242	0.116	0.037
Marital status, according to program application (reference category: not married)				
Married	Strxmarriedf	0.079	0.129	0.540
Private health insurance previously (Reference category: no)				
Had private health insurance	priv_ins	-0.157	0.117	0.179
Private prescription insurance previously (Reference category: no)				
Had private prescription insurance	prescr_ins*	-0.231	0.146	0.115
Enrollee race (Reference category: non-white)				
Enrollee is white (including Hispanic)	Whiterec	-0.362	0.186	0.052
Constant	Constant	3.430	0.694	0.000

*p<.05, **p<.01

The regression model is highly significant (p<.0001), though again, R Square values are modest (0.075).

Skimping risk score

It is useful to have a single variable that conveys skimping risk information for SeniorCare enrollees. Taking the predictors of skimping regression above, it is possible to create a skimping risk score variable. This score, labeled skimp_score, is the logarithm of the predicted odds of skimping. The score was calculated as the predicted value from this regression by multiplying the coefficients of the skimping predictors times the predictors and summing.

Risk score equation for skimping in pre-SC period:

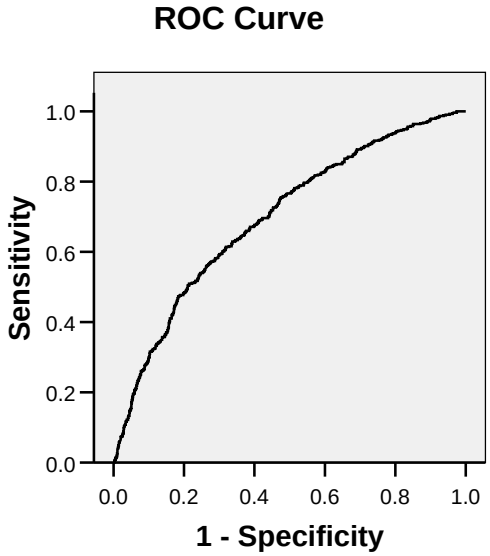
skimp_score = -.0150 * **ILnew** + .4462 * **ILrollov** + -.2713 * **less_poor** + -.0599 * **age** + -.0641 * **female** + -.2663 * **health_status** + .2413 * **N_treated** + -.3555 * **N_lifethr** + .0245 * **strxmarriedf** + -.1614 * **priv_ins** + -.4106 * **prescr_ins** + -.3064 * **whiterec** + 4.7140

The result is a continuous variable that measures skimping risk score from -3.4287 to 1.5503. A lower risk score correlates with low levels of skimping on medications, while a high-risk score correlates with high levels of skimping. It is useful to examine the contribution of skimp_score is in predicting skimping during the six months before SeniorCare. One way to answer this question is by regressing pre-SeniorCare skimping on skimp_score, and then analyzing goodness of fit measures as shown in Table 2.4 and Figure 2.2.

Table 2.4: Regression results: Predictors of skimping in pre-SC period*:*

Variable	B	S.E.	Sig.
skimp_score	1.000	0.081	0.000
Constant	0.002	0.084	0.979

Figure 2.2. Receiver Operating Characteristic (ROC) curve in estimating skimping before SeniorCare



Note: Area under the Curve = 0.696

Skimp_score is a highly significant (p<.0001) predictor of skimping. This is due to the large size of the sample. The area under the ROC curve (0.696) shows that the variable has fairly strong predictive power. The R square value (0.094) is analogous to a correlation of 0.31 (the square root of R-squared) between skimp_score and skimping on an individual basis. Overall, the skimping risk score variable is valuable, and can be used for further analysis.

Going without necessities risk score

Similarly, a risk score for going without necessities can be calculated to create a variable that will convey an enrollee's risk of going without necessities to afford prescriptions. This score, abbreviated as gwn_score, is the logarithm of the predicted odds of going without necessities.

Risk score equation for going without necessities in pre-SC period*:*

gwn_score = -.0196 * **ILnew** + .0543 * **ILrollov** + -.1474 * **less_poor** + -.0369 * **age** + -.0193 * **female** + -.3053 * **health_status** + .2444 * **N_treated** + -.2417 * **N_lifethr** + .0792 * **strxmarriedf** + -.1574 * **priv_ins** + -.2306 * **prescr_ins** + -.3618 * **whiterec** + 3.4303

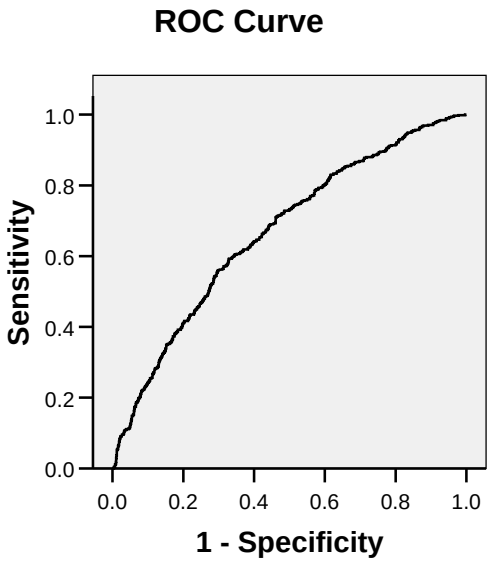
Gwn_score is a continuous variable measuring going without necessities risk score from -2.6021 to 1.53835. Low values of gwn_score are correlated with low levels of going without necessities, while high values are correlated with high levels of going without necessities.

Again, a regression of pre-SeniorCare going without necessities on gwn_score is used to evaluate the usefulness of the gwn_score variable as shown in Table 2.5 and Figure 2.3.

Table 2.5: Regression results: Predictors of going without necessities (gwn) in pre-SC period:

Variable	B	S.E.	Sig.
gwn_score	1.000	0.089	0.000
Constant	0.002	0.070	0.975

Figure 2.3. Receiver Operating Characteristic (ROC) curve in estimating going without necessities before SeniorCare



Diagonal segments are produced by ties.

Area under the Curve = 0.667

Gwn_score is a highly significant (p<.0001) predictor of going without necessities in the pre-SeniorCare period. R Square is low (0.075), due to the large size of the sample. Area under ROC curve is 0.667, signifying that gwn_score has moderate predictive power. Over all, this variable is an adequately strong predictor of going without necessities, and it is a useful measure of risk.

Economic hardship risk tertiles

Categorizing enrollees by risk scores helps to identify seniors who are most at-risk for economic hardship due to high prescription drug prices. Risk categories can guide policymakers in shaping policy decisions to target those who are most in need.

SeniorCare enrollees can be divided into tertiles (thirds) based on risk score for skimping or going without necessities. The analyses in Tables 2.6 and 2.7 indicate that in higher risk categories, there are higher rates of economic hardship. This further confirms the usefulness of the risk score variables.

Table 2.6: Percentage of enrollees skimping in pre-SC period, by skimping risk tertile*:*

Skimping risk category	% Skimping in pre-SC period
1 (lowest)	14.8%
2 (middle)	26.0%
3 (highest)	47.6%

Table 2.7: Odds ratios: Skimping by risk tertile:

Skimping risk category	Odds ratio of skimping relative to category 1	95% Lower CI	95% Upper CI
Category 1 (lowest reference)	1.00	1.00	1.00
Category 2 (middle)	2.03	1.51	2.72
Category 3 (highest)	5.24	3.95	6.95

The prevalence of skimping is only 14.8% among SeniorCare enrollees in risk category 1. Meanwhile, 47.6% of those in the highest risk category report skimping in the pre-SeniorCare period. There is a significant correlation between risk category and skimping rates (p<.0001, Kendall's tau-b test).

Going without necessities is likewise analyzed in Tables 2.8 and 2.9. Among those in the lowest category of risk, 21.7% report going without necessities to afford prescriptions in the pre-SeniorCare period. Enrollees in the highest category have a going without necessity prevalence rate of 51.3%. There is a significant correlation between risk category and going without necessity rates ($p<.0001$, Kendall's tau-b test).

Table 2.8: Percentage of enrollees going without necessities in pre-SC period, by going without necessities risk tertile*:*

Going without necessities risk category	% Going without necessities in pre-SC period
1 (lowest)	21.7%
2 (middle)	34.9%
3 (highest)	51.3%

Table 2.9: Odds ratios: Going without necessities by risk tertiles:

Going without necessities risk category	Odds ratio of GWN relative to category 1	95% Lower CI	95% Upper CI
Category 1 (lowest, reference)	1.00	1.00	1.00
Category 2 (middle)	1.93	1.49	2.50
Category 3 (highest)	3.80	2.94	4.89

Post-SeniorCare reductions in economic hardship

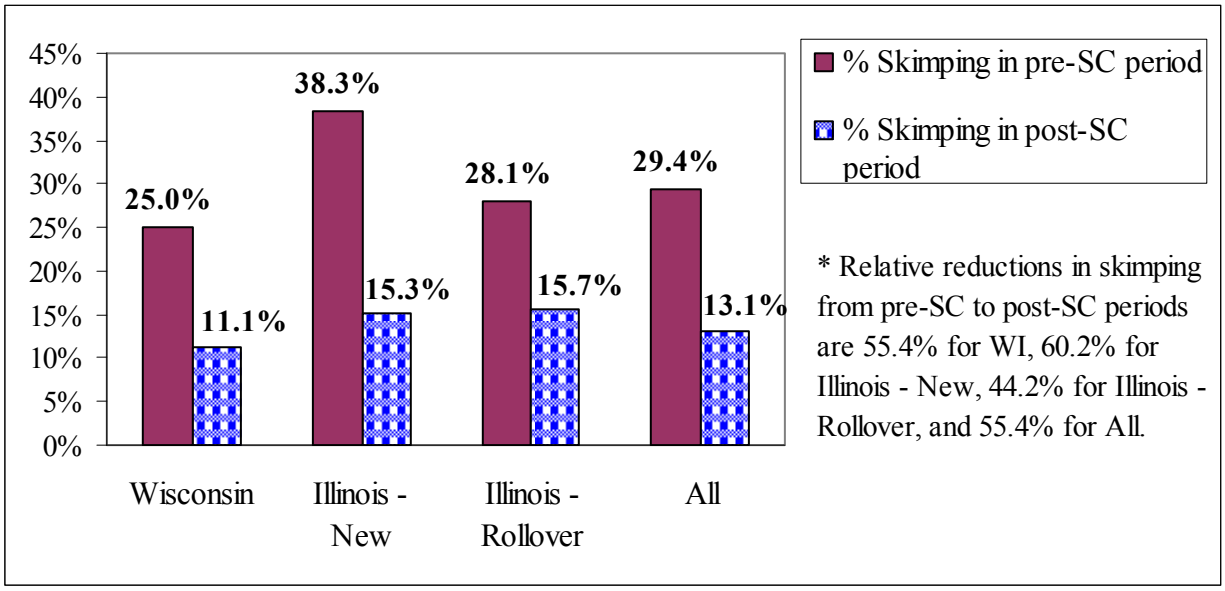
Enrollees were again surveyed about skimping and going without necessities after a minimum 6-month period on SeniorCare. There were widespread reductions in skimping and in going without necessities.

Reduction in skimping on medications

Figure 2.4 displays the dramatic reductions in skimping from SeniorCare. The rate of skimping among all SeniorCare enrollees fell from 29.4% to 13.1% after the start of SeniorCare. This comprised a 55.4% reduction in skimping. There were some variations by sample. The greatest

reduction in skimping was among new Illinois enrollees, who previously had the highest rates of skimping. In the post-SeniorCare period, they still have the highest rates of skimping at 15.7%, but that represents a 60.2% reduction from previous rates. The smallest reduction was in Illinois seniors who had been rolled over into SeniorCare. Their rates of skimping fell from 28.1% to 15.7%, a 44.3% reduction. Among Wisconsin enrollees, skimping rates dropped from 34.3% to 17.6%, a 48.9% reduction.

Figure 2.4: Changes in skimping by sample*



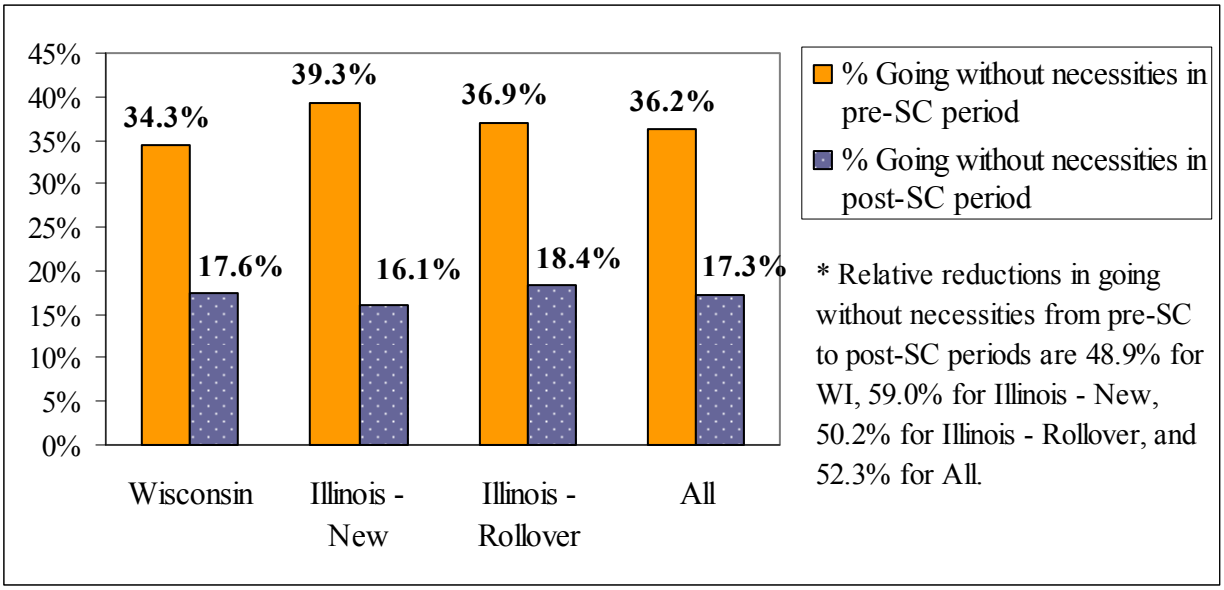
Reduction in going without necessities

Overall rates of going without necessities dropped from 36.2% to 17.3%. This is a 52.3% reduction in going without necessities that can be attributed to the SeniorCare program. As with skimping, there were variations by sample group (Figure 2.5). In Wisconsin, rates of going without necessities fell from 34.3% to 17.6%, a 48.9% reduction. For new Illinois enrollees, the rates dropped from 39.3% to 16.1%. This 59.0% again represents the largest reduction. For Illinois rollover enrollees, rates of going without necessities went from 36.9% before SeniorCare to 18.4% after SeniorCare, a 50.2% reduction.

Because these observed improvements are based on before-and-after comparisons, they constitute quasi-experimental evidence. To determine whether they are due to SeniorCare, the possibility of some competing explanation of a concurrent policy or environmental change in fall 2002 and winter 2003 in these two states must always be considered. We think competing reasons are very unlikely, however. First, neither state made any changes in prescription drug coverage besides SeniorCare. Medicare Part D, for example, had not yet been enacted, much yet implemented. Second, the results were consistent between the two states. Third, respondents received no benefit or sanction from their answers and the survey was not framed as evaluation of SeniorCare, so they had no reason to try to slant their answers. Fourth, the consistency

between diagnoses on claims and the survey suggests that respondents generally reported accurately.

Figure 2.5: Changes in going without necessities by sample*



Reduction in economic hardship by risk tertiles

A reduction in skimping occurred for all risk categories, as evidenced in Table 2.10. However, the percentage decrease in skimping differed for different risk categories. Enrollees who had the highest risk scores experienced a 62.7% reduction in skimping, while enrollees in the lowest category had a 47.3% reduction. The absolute percentage point reduction was again greatest for the highest risk category at 29.9% compared to 7.0% for the lowest risk category. The odds ratio of post-SeniorCare to pre-SeniorCare skimping indicates the relative improvement. The smaller the ratio, the more substantial is the improvement. This ratio was much lower for the highest risk category than for the others. In effect, SeniorCare was associated with the greatest reduction in skimping for those at greater risk.

Table 2.10: Reduction in skimping by risk category*

Skimping Risk Category	% Skimping in pre-SC period	% Skimping in post-SC period	Relative reduction in skimping	Absolute reduction in skimping	Odds Ratio Post/Pre SC Skimping	95% Lower CI	95% Upper CI
1 (lowest)	14.8%	7.8%	47.3%	7.0%	0.487	0.278	0.712
2 (middle)	26.0%	13.6%	47.7%	12.4%	0.448	0.302	0.608
3 (highest)	47.6%	17.7%	62.7%	29.9%	0.237	0.167	0.315

* Odds ratios derived from percentage point reduction in skimping assuming independent normal distributions for pre and post skimping.

As with skimping, a decrease in going without necessities was observed for all risk categories. The results are presented in Table 2.11. Again, the percent reduction differed somewhat by risk category. Enrollees in the highest risk category had a 49.1% reduction in going without necessities, while those in the lowest risk category had a slightly larger reduction of 57.3%. The absolute percentage point reduction indicated that those in the highest risk categories benefited most, with a reduction in going without necessities of 25.2%. The odds ratios of pre-SeniorCare to post-SeniorCare going without necessities were fairly similar across risk categories—all about 0.33. This finding shows that SeniorCare was associated with a two thirds reduction in the odds that a member would have to go without necessities to pay for prescription drugs.

Table 2.11: Reduction in going without necessities by risk category*

Going without necessities risk category	% Going without necessities in pre-SC period	% Going without necessities in post-SC period	Relative reduction in going without necessities	Absolute reduction in going without necessities	Odds Post/Pre SC going without necessities	95% Lower CI	95% Upper CI
1 (lowest)	14.8%	7.8%	47.3%	7.0%	0.370	0.217	0.536
2 (middle)	26.0%	13.6%	47.7%	12.4%	0.329	0.224	0.446
3 (highest)	47.6%	17.7%	62.7%	29.9%	0.335	0.257	0.424

* Odds ratios derived from percentage point reduction in skimping assuming independent normal distributions for pre and post skimping.

Reduction in economic hardship by risk tertiles and sample

Table 2.12 shows percentage point reduction in skimping by sample and risk tertile. Reduction in skimping was greatest in the highest skimping risk category, regardless of whether the enrollee was in Wisconsin or Illinois. Differences among enrollees in the highest risk category were minimal, ranging from 29.4 to 30.2 percent. In the lower risk categories, there was some more variance. New Illinois enrollees experienced a 10.3% drop in skimping, while in Wisconsin, the

reduction was a smaller 6.1% for the same risk category. Over all, the percentage reductions in skimping were generally consistent between different samples. The results show that the greatest benefits were observed in the highest risk patients.

Table 2.12: Reduction in skimping by sample and risk tertile

Sample	Risk Tertile	Percentage Point Reduction in Skimping
Wisconsin	1	6.1%
	2	13.5%
	3	30.2%
Illinois - New	1	10.3%
	2	15.5%
	3	29.8%
Illinois – Rollover	1	7.9%
	2	4.7%
	3	29.4%

There was less consistency in reductions in going without necessities, shown in Table 2.13. Among the highest risk category, percentage point reductions varied from 21.7% for rollover Illinois enrollees to 26.7% for Wisconsin enrollees. Altogether, however, these findings suggest that the greatest benefits were observed in the highest tertile of risk for skimping or going without necessities. Since the Illinois rollover group previously had publicly supported prescriptions for some several categories of drugs, they would not be expected to report as great improvements as new enrollees. Results for skimping (for category 2) and for going without necessities (categories 2 and 3) were consistent with this hypothesis.

Table 2.13: Reduction in going without necessities by sample and risk tertile

Sample	Risk Tertile	Absolute Reduction in Going Without Necessities
Wisconsin	1	10.0%
	2	16.8%
	3	26.7%
Illinois - New	1	15.3%
	2	26.8%
	3	25.1%
Illinois – Rollover	1	18.0%
	2	19.7%
	3	21.7%

Evaluating differences between the Illinois and Wisconsin programs

The Illinois and Wisconsin SeniorCare programs differed somewhat. An interesting question to ask is whether one was better than the other in reducing economic hardship among enrollees. A way to answer this is to regress skimping in the post-SeniorCare period on Illinois vs. Wisconsin, controlling for pre-SeniorCare skimping risk (Table 2.14). Similarly, post-SeniorCare going without necessities can be regressed on program and pre-SeniorCare going without necessities risk (Table 2.15).

Table 2.14: Regression results: Predictors of skimping in post-SC period:

Variable	B	S.E.	Sig.
skimp_score	0.499	0.100	0.000
Illinois	0.098	0.147	0.504
Constant	-1.510	0.142	0.000

Table 2.15: Regression results: Predictors of going without necessities in post-SC period*:*

Variable	B	S.E.	Sig.
gwn_score	0.878	0.106	0.000
Illinois	-0.240	0.130	0.064
Constant	-1.035	0.102	0.000

In both cases, risk score is highly significant in predicting post-SeniorCare skimping and going without necessities, while the program variable is insignificant ($p>0.05$). This shows that after controlling for risk, the Illinois and Wisconsin programs were equally effective in reducing economic hardship.

Discussion

Skimping or cost-related non-adherence on prescription drug regimens is an important and widespread problem with serious implications. It is especially prevalent among low-income seniors. This survey of SeniorCare enrollees estimates that 29.4% of seniors for whom a medication was prescribed skimped on medications without the presence of a pharmacy assistance program. The rate of 29.4% is consistent with other authors' estimates of the problem. Rector (2004) reported a 32% rate of cost-related non-adherence among poor seniors, and Safran's (2005) survey found a 35.2% rate of cost-related non-adherence among a similar population.

Additionally, the pressures of paying for expensive medications force many low-income seniors to forgo life necessities, including food, heat, or rent. Among the survey population, 36.2% reported going without necessities to afford medications before the start of the SeniorCare program. This is slightly higher than the 21.4% who spent less on basic needs to afford prescription drugs in Safran's article.

Program performance

SeniorCare was put in place to alleviate the economic hardship caused by costly prescriptions. The program succeeded in lowering rates of skimping to 13.1%, an impressive 55.4% reduction. A decrease in reported going without necessities also occurred. As this relationship was greatest among those with the most health problems, it is likely due to respondents no longer needing to spend as much money on health care. Rates of going without necessities fell to 17.3%, a 52.3% reduction. The program did not eliminate all skimping and deprivation, but it was associated with a sizable reduction in rates of economic hardship related to prescription drugs. By achieving this, SeniorCare appeared to be highly successful.

Another achievement of SeniorCare was the program's ability to target those most at risk for skimping on medications. The program achieved the greatest reduction in skimping among those most at risk for skimping – a 62.7% reduction for enrollees in the highest risk category. It

worked similarly for reducing going without necessities. A program that helps those who need it most is a very efficient way to meet a social goal such as the reduction of economic hardship.

These very favorable findings are consistent with the reduction in nursing home admissions among those at greatest risk reported elsewhere in this final report.

Survey limitations and strengths

Design constraints imposed four limitations on the SeniorCare survey. First, the sponsoring agency required that the survey be limited to fifteen minutes to minimize burden on respondents. This time constraint did not allow inclusion of questions that would have been very useful. For example, enrollees were surveyed about their out-of-pocket drug expenses after the implementation of SeniorCare, but not in the 6-month period before. Without that knowledge, it is impossible to quantify the reduction of out-of-pocket costs as one of the outcomes of the program to supplement the qualitative results around "going without necessities."

Second, the skip pattern used to ensure a smooth flow of questions in questions about missed doses created ambiguity in a few respondents about whether the reason appeared to be primarily cost-related. We developed a procedure to infer this from related items, and ensured balance by using the same procedures for both the pre- and post-SeniorCare reference periods.

Third, it was not possible to survey a control population (not in SeniorCare) about their experiences with prescription drugs, which could have provided a useful supplement to the before-and-after questions.

Fourth, the survey was done in a single round. Thus, questions about experience pre-SeniorCare required respondents to recall events further in the past than the corresponding questions about events post-SeniorCare. If memory fades with time, respondents might have been less likely to recall skimping pre-SeniorCare compared to post SeniorCare. On the other hand, respondents could have made their responses more socially acceptable to the interviewer by under-reporting current skimping. Our consistency checks suggested that neither distortion occurred to any substantial extent. Agreements between self-reported and claims-reported diagnoses were generally high. Predictors and improvements in going without necessities, where social acceptability seems less clear, were generally consistent with findings about skimping. The observed patterns of greatest improvement to enrollees in the highest risk tertile, and the smallest gain to Wisconsin enrollees facing the greatest deductible were all consistent with program design.

The major strength of the survey was, to our knowledge, the first survey examine the change in skimping or going without necessities around the initiation of a program targeted at low-income beneficiaries.

TASK 3: PROGRAM DESCRIPTIVE ANALYSIS: ENROLLMENT, UTILIZATION AND COSTS

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Abstract

The Illinois and Wisconsin pharmacy assistance programs provide financing for outpatient pharmacy therapies for large numbers of elderly, low-income residents. The programs are designed to operate as extensions of the state Medicaid program, offering financing for outpatient pharmacy services to elderly beneficiaries previously not eligible for full Medicaid benefits. This task analyzes administrative data obtained from the two programs for their first year of operation.

Monthly program payments and enrollments were higher in the initial months in Illinois than in the initial months in Wisconsin, since most participants were "rolled over" from a pre-existing program. Illinois monthly caseloads grew by 35% from the first to the last month of the first program year. The Wisconsin program, which had no predecessor, grew in caseload by 92% from the first to the last month of the first program year. During year 1 (June 2002 through May 2003), the Illinois program had an average monthly caseload of almost 153,000 enrollees and spent $1,394 per enrollee year. Illinois participants paid $219 in co-payments per enrollee year. The Illinois total annual cost per enrollee-year was $1,614. The Wisconsin program in year 1 (September 2002 through August 2003) had an average monthly caseload of close to 61,000 enrollees. The Wisconsin program cost per enrollee year, excluding enrollee payments, was $1,032. Total patient copayments and deductibles averaged $461 annually. The Wisconsin total annual cost per enrollee-year was $1,493.

In both states, the profile of enrollees differed from the aged Medicare populations in their states in ways consistent with persons needing subsidized prescription drugs. Enrollees were more likely to be female, older, more rural and using more Medicare financed durable medical equipment and home care. Enrollees were also more likely to have diagnoses for chronic diseases likely to require regular outpatient medications (e.g. diabetes, congestive heart failure, heart disease, stroke, chronic obstructive pulmonary disease, and arthritis).

Introduction

Overview

The Illinois and Wisconsin state pharmacy assistance programs provide financing for outpatient pharmacy therapies for large numbers of elderly, low-income residents. The programs are designed to operate as extensions of the state Medicaid program, extending eligibility to elderly beneficiaries previously not enrolled in Medicaid but providing only coverage for outpatient pharmacy care. Both programs employ claim-automated eligibility and claim-payment systems that record monthly program enrollment status and every individual transaction between a beneficiary and a pharmacy. The state pharmacy data are linkable to beneficiary Medicare enrollment and claims data. The linked data provide a unified source of pharmacy utilization, hospital and physician utilization and medical diagnoses. The report below documents population and pharmacy utilization characteristics for each of the state programs from the state data systems. The report also includes profiles of Medicare utilization and diagnoses for state pharmacy program enrollees and comparative data from the two states from the Medicare 5% sample of all state beneficiaries.

Data limitations

Data was collected from Illinois and Wisconsin pharmacy programs for the first two years of program operation. Illinois data spanned the period July 2002-June 2004. Wisconsin data included records from September 2002-August 2004. Claims records from the state of Illinois were not complete for the second program year. Due to the incompleteness of information from Illinois comparative profiles between the states are only available from the first program year. Both years of Wisconsin data are reported in the individual profiles. Data from the Medicare program is reported from the period in the year before program initiation, i.e. CY 2001. The Medicare data is intended to provide information on beneficiary history of utilization and diseases prior to program initiation. The Medicare data provide key information on both the pre-existing level of access to healthcare services and measures of underlying disease prevalence. Data from the Medicare system was only available for beneficiaries with traditional Medicare enrollment in CY 2001. Beneficiaries with no Medicare enrollment or only enrollment in a Medicare HMO were not included in the Medicare utilization and diagnostic profiles due to lack of data.

State program financing characteristics

The Illinois and Wisconsin programs include records for all pharmacy transactions. Program design varied between the two states. Wisconsin required for beneficiaries beyond a certain income level a patient deductible of $500 before the initiation of state coverage and patient co-payments. The Wisconsin program began operation in September 2002 after a pre-enrollment outreach effort. Illinois required patient co-payments that increased to the 20% level after $1,750 of state pharmacy payments in that year was reached. The Illinois program began operation in June 2002 and included enrollees of the pre-existing state Circuit Breaker program. Many of the differences in state operational data profiles are influenced by the fact that Wisconsin is a start-up and the Illinois program largely includes roll-overs from a pre-existing drug financing program.

Methods

Computations of enrollee years

The data in the profiles includes counts of enrollees (people) and dollars. Person-months of enrollment are computed by summing the number enrollees in each month. Annual enrollment is expressed as enrollee-years and is computed by dividing the number of person months of enrollment in a year by 12. Rates of utilization are represented as rates per 1,000 enrollee-years. This is computed by dividing the aggregate utilization by the number of person months of enrollment and multiplying the result times 12,000.

Data sources for patient profiles and selection effects

Data sources for patient profiles and selection effects are profile data from Medicare claims and enrollment for program enrollees and from a 5% sample of each state's elderly Medicare population. The data are derived from calendar year 2001, the year prior to the initiation of the state programs. Only data from elderly beneficiaries (age 65 as of December 2001) who were covered by Medicare Parts A and B and who were not HMO enrollees in the year was used for the comparisons.

Enrollment, Utilization, and Costs

Overall program payments and population

Table 3.1 presents basic information on state program enrollment, state payments and patient liabilities based on administrative data from both programs.

Table 3.1. Overall SeniorCare Spending

Item	IL Year 1	IL Year 2	WI Year 1	WI Year 2
Number of Enrollee-Years	152,523	N/A	60,704	76,211
Total Program Spending	$212,676,176	N/A	$62,630,438	$97,468,072
Program Payments per Enrollee-Year	$1,394.39	N/A	$1,031.73	$1,278.93
Patient Payments per Enrollee-Year	$219.13	N/A	$460.82	$494.25
Total Payments per Enrollee-Year	$1,613.52	N/A	$1,492.55	$1,773.18

The Illinois program is a continuation of a pre-existing, state-only financed benefit. The Wisconsin program is a start-up initiative, so enrollment ramped up over the course of the first year. Figures 3.1 and 3.2 profile the monthly enrollment and payment patterns based on claim-level data. The Illinois program data shows a smooth transition between the pre-existing and new pharmacy programs, i.e., gradual increases in enrollment in the course of the year. The Wisconsin program data exhibit the characteristics of a new program with a sharp ramp up of enrollment and payments as the program enrolls beneficiaries and provides new access to pharmacy therapies. After a year of operation Wisconsin program data begin to exhibit a pattern of more modest growth that is distinct from the sharp increases seen in the first 12 months.

Figure 3.1: Illinois Monthly Program Spending and Enrollment

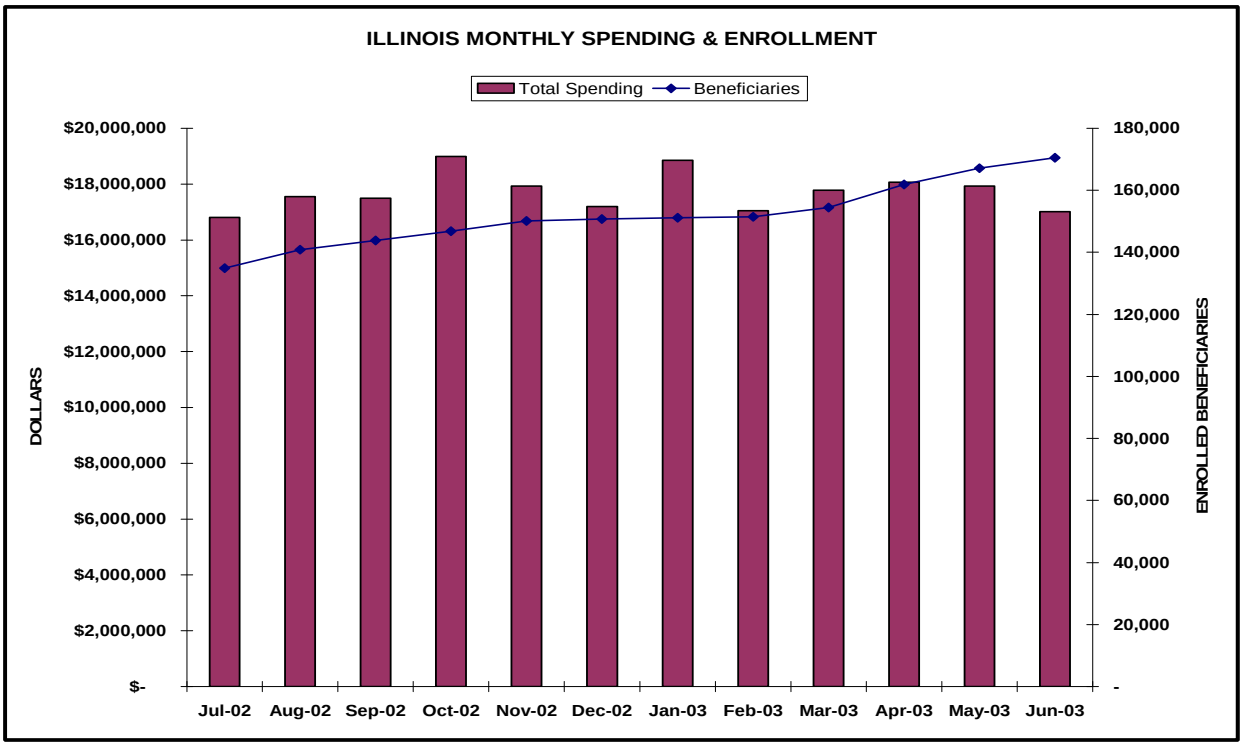
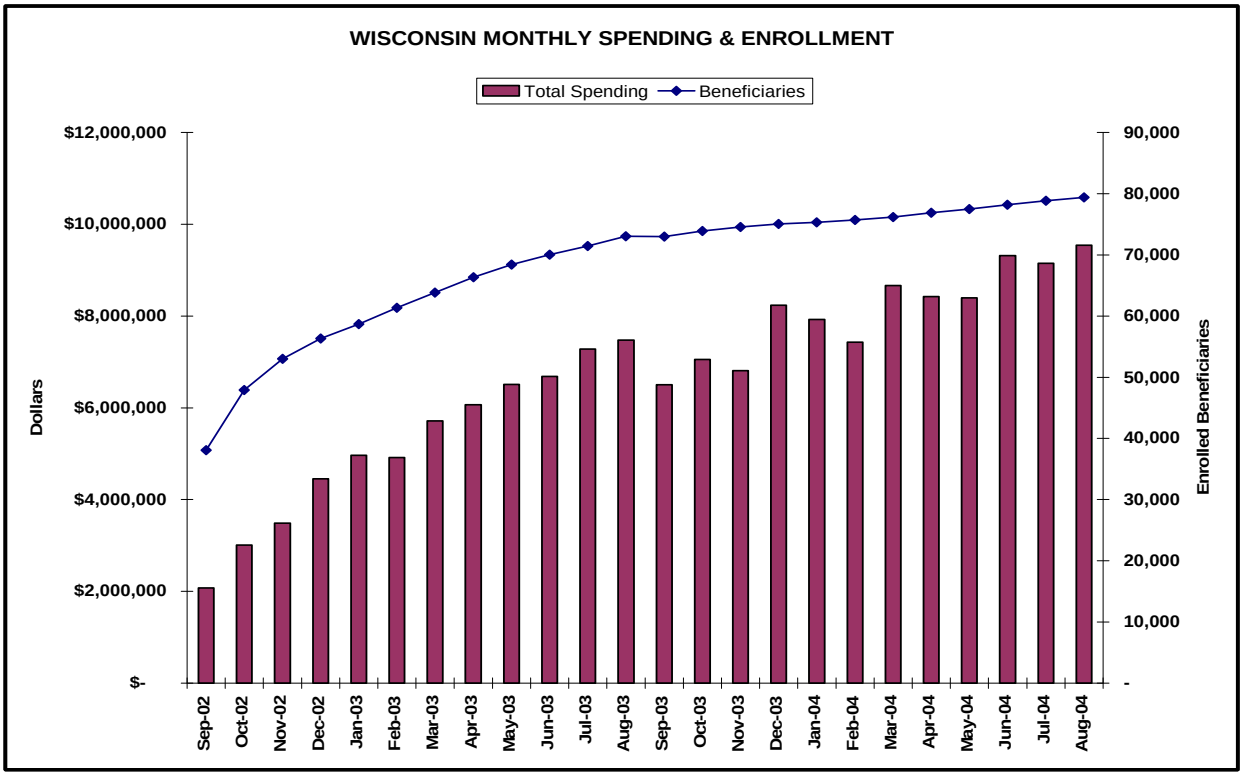
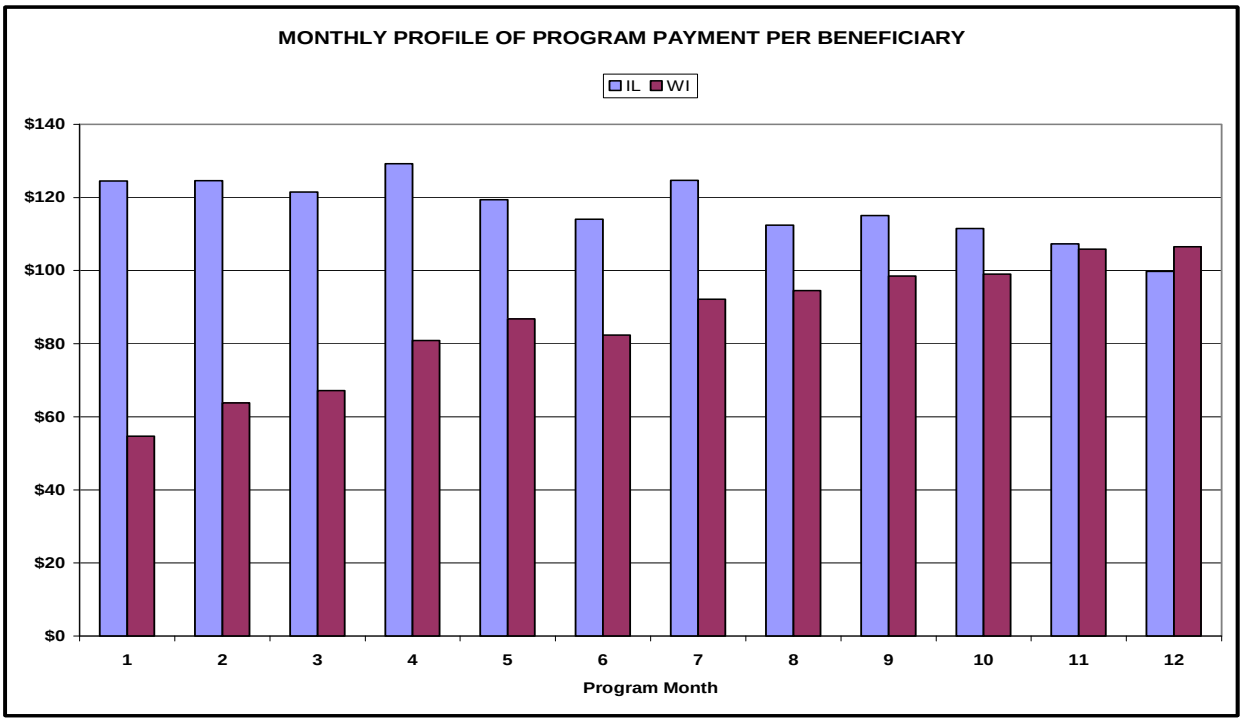


Figure 3.2: Wisconsin Monthly Program Spending and Enrollment



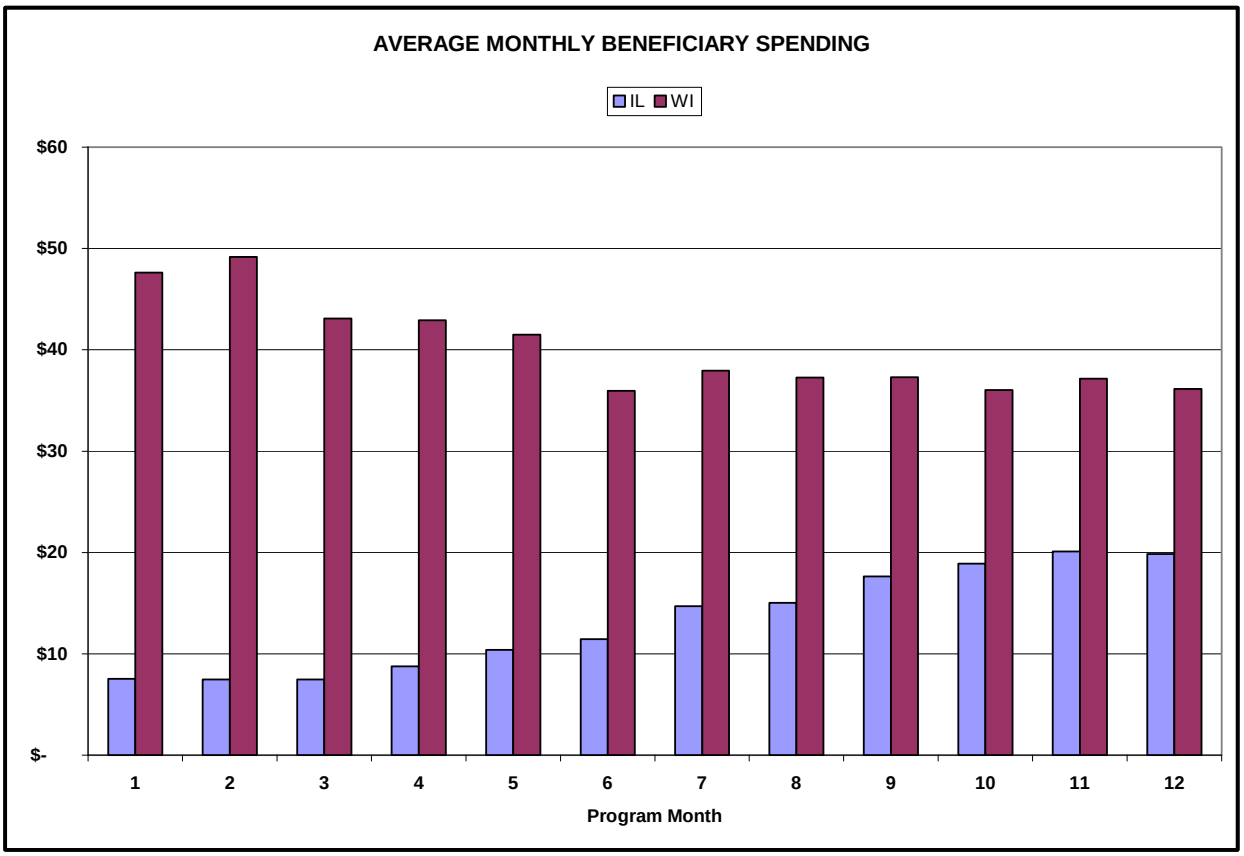
The difference between a roll-over program versus a new-program is evident in the monthly enrollee counts. Illinois enrollment in month 1 is approximately 80% of the end of year level. Wisconsin enrollment nearly doubles over the course of the year. Differences between the states in program payments in the early period are accentuated by the Wisconsin patient deductible. Figure 3.3 provides detail on monthly per enrollee program payments, also based on claim-level data.

Figure 3.3. Monthly Program Spending by State



The average monthly program payments per month do not include patient contributions. The effect of the annual deductible levied by Wisconsin is especially evident in the early months of program initiation. By the end of the year the program payments average $107 per month in Illinois and $102 per month in Wisconsin. While these two amounts are very similar, their sources are quite different. The Illinois program is mature, with little growth in enrollment and a higher step-type co-payment when state pharmacy benefits reach $1,750. The Wisconsin program experienced population growth and a high deductible. The impact of these features is shown in Figure 3.4. In Illinois, as an increasing share of beneficiaries reached the "soft cap" of $1,750, average patient payments increased. In Wisconsin, the time pattern was opposite as beneficiaries accumulated pharmacy expenses and spent past their deductible obligation. The effect of this deductible in Wisconsin was dampened in the first program year since many enrollees entered several months after the beginning of the program year.

Figure 3.4: Average Monthly Beneficiary Spending



Program drug utilization by brand or generic category

The Lexicon database provides a flag for generic or brand status for each categorized drug. Table 3.2 provides a breakdown of claims and spending. As this breakdown is linked to therapeutic classes, described below, not all claims could be classified. Thus, the total will be less than the payments reported in Table 3.1. The pattern is nevertheless representative. The Wisconsin program encourages greater utilization of generic drugs through a higher co-payment for brand drugs ($15) than the Illinois program ($4), which probably explains the higher generic use rate in that state.

Table 3.2. Breakdown of claims and spending between generic and brand drugs in first year for which classification was available

Item	Brand		Generic		Total
		Aggregate amounts			
IL Claims	$2,899,520	50%	$2,899,520	50%	5,799,040
IL Payments	$134,498,665	78%	$42,473,263	24%	$176,971,928
WI Claims	$1,053,695	45%	$1,287,850	55%	2,341,545
WI Payments	$45,154,568	87%	$7,350,744	14%	$52,505,312
		Amounts per enrollee year			
IL Claims	19.0	50%	19.0	50%	38.0
IL Payments	$882	76%	$278	24%	$1,160
WI Claims	17.4	45%	21.2	55%	38.6
WI Payments	$744	86%	$121	14%	$865

Program drug utilization by brand or therapeutic classes

The Illinois and Wisconsin programs both cover all major therapeutic classes. Program claims include National Drug Codes (NDCs) that can be linked via the Cerner-Multum Lexicon formulary database to a therapeutic classification. Approximately 85% of all NDCs in the program data linked to an NDC code in the formulary. The NDCs that did not link to a category are primarily related to codes that were not NDCs and were created by the state program for non-drug products or supplies. In some instances NDCs may link to more than one therapeutic category. The total row in the first row of the tables report on total counts and payments for all categorizable NDCs. Thus, the total will be less than the payments reported in Table 3.1. Tables 3.3 and 3.4 report on total numbers of claims and payments for all drug categories and for the top 25 categories by volume of claims. The records for the top 25 categories represent over 80% of all program utilization. Table 3.3 reports the breakdown within each drug category of generic status. Note that the rows that individually report counts for a therapeutic class are individually correct; however, due to dual classification, the total reported at the top is less than the sum across rows. Due to duplications of drugs that fall into more than one class, that procedure would lead to over counts.

Table 3.3: Illinois Claims and Program Spending for the Top 25 Frequently Used Prescription Categories in First Program Year and Generic Share

	Claims		Spending		Percent of state total in category	
Drug Category	**Number**	**% Gen.**	**Total Spending**	**% Gen.**	**% of Claims**	**% of Spending**
Total: All Drug Categories	5,799,040	50%	$176,971,928	24%	100.0%	100%
Diuretics	627,772	85%	$7,267,235	52%	10.8%	4.1%
Beta-Adrenergic Blocking Agents	435,537	67%	$7,652,503	38%	7.5%	4.3%
Analgesics	410,397	53%	$18,652,642	20%	7.1%	10.5%
Antidiabetic Agents	386,257	38%	$15,686,267	21%	6.7%	8.9%
Calcium Channel Blocking Agents	382,839	43%	$15,604,123	36%	6.6%	8.8%
HMG-CoA Reductase Inhibitors	348,653	6%	$26,600,087	4%	6.0%	15.0%
Angiotensin Converting Enzyme	293,578	35%	$8,807,312	21%	5.1%	5.0%
Antihypertensive Combinations	238,480	55%	$6,596,788	22%	4.1%	3.7%
Minerals and Electrolytes	190,124	54%	$2,459,439	49%	3.3%	1.4%
Anxiolytics, Sedatives, and	185,347	88%	$3,356,169	69%	3.2%	1.9%
Thyroid Drugs	178,160	37%	$1,793,164	40%	3.1%	1.0%
Antidepressants	161,055	44%	$6,556,112	12%	2.8%	3.7%
Ophthalmic Preparations	157,289	24%	$6,433,484	11%	2.7%	3.6%
Angiotensin II Inhibitors	154,051	0%	$6,714,254	0%	2.7%	3.8%
Antianginal Agents	148,924	81%	$3,876,135	70%	2.6%	2.2%
Inotropic Agents	143,654	53%	$762,248	56%	2.5%	0.4%
Anticoagulants	124,141	46%	$2,563,117	40%	2.1%	1.4%
Bronchodilators	121,256	46%	$5,567,625	19%	2.1%	3.1%
Proton Pump Inhibitors	114,957	0%	$12,791,408	0%	2.0%	7.2%
Anticonvulsants	113,300	66%	$3,551,596	41%	2.0%	2.0%
Antiplatelet Agents	108,283	23%	$8,230,421	4%	1.9%	4.7%
Bisphosphonates	106,343	0%	$6,029,850	0%	1.8%	3.4%
Antitussives	86,117	93%	$1,228,623	85%	1.5%	0.7%
Respiratory Inhalant Products	82,636	5%	$5,655,044	3%	1.4%	3.2%
Antiadrenergic Agents, Peripherally	60,399	68%	$1,929,915	1%	1.0%	1.1%

Table 3.4: Wisconsin Claims and Program Spending for the Top 25 Frequently Used Prescription Categories in First Program Year and Generic Share

	Claims		Spending		Percent of state total in category	
Drug Category	**Number**	**% Gen.**	**Total Spending**	**% Gen.**	**% of Claims**	**% of Spending**
Total: All Drug Categories	2,341,545	55%	$52,505,312	14%	100.0%	100%
Diuretics	259,396	90%	$1,271,275	41%	11.1%	2.4%
Beta-Adrenergic Blocking Agents	184,331	76%	$1,354,642	21%	7.9%	2.6%
Analgesics	135,133	58%	$4,847,187	14%	5.8%	9.2%
Calcium Channel Blocking Agents	131,019	38%	$3,887,345	27%	5.6%	7.4%
HMG-CoA Reductase Inhibitors	129,536	5%	$7,234,255	2%	5.5%	13.8%
Antidiabetic Agents	117,345	41%	$3,067,295	11%	5.0%	5.8%
Angiotensin Converting Enzyme	98,102	38%	$1,664,962	6%	4.2%	3.2%
Antidepressants	94,646	41%	$3,135,236	4%	4.0%	6.0%
Antihypertensive Combinations	82,206	64%	$1,268,055	11%	3.5%	2.4%
Anxiolytics, Sedatives, and	79,957	87%	$829,146	39%	3.4%	1.6%
Thyroid Drugs	68,031	38%	$160,066	41%	2.9%	0.3%
Minerals and Electrolytes	63,446	70%	$409,691	82%	2.7%	0.8%
Anticoagulants	61,889	84%	$784,432	60%	2.6%	1.5%
Ophthalmic Preparations	58,909	27%	$1,733,288	10%	2.5%	3.3%
Angiotensin II Inhibitors	54,955	0%	$1,958,160	0%	2.3%	3.7%
Anticonvulsants	52,807	66%	$1,309,181	15%	2.3%	2.5%
Bronchodilators	51,003	42%	$2,287,407	7%	2.2%	4.4%
Antianginal Agents	50,818	89%	$498,593	75%	2.2%	0.9%
Proton Pump Inhibitors	47,709	0%	$4,689,854	0%	2.0%	8.9%
Inotropic Agents	45,123	89%	$21,891	91%	1.9%	0.0%
Bisphosphonates	44,880	0%	$2,074,773	0%	1.9%	4.0%
Respiratory Inhalant Products	38,310	4%	$2,571,326	1%	1.6%	4.9%
Antitussives	31,073	96%	$235,262	80%	1.3%	0.4%
Sex Hormones	30,195	15%	$456,921	2%	1.3%	0.9%
Antiplatelet Agents	27,267	9%	$2,279,022	1%	1.2%	4.3%

Patient Profiles and Selection Effects

The profiles cover demographics, history of utilization, access to care and disease prevalence. In total the exhibits provide a detailed description of the beneficiaries who enrolled in each of the state programs in the context of data from Medicare beneficiaries living in the same state.

Medicare beneficiary demographics

Table 3.5 provides general personal demographic information from calendar year 2001 for the prospective state program enrollees compared to Medicare beneficiaries. Since the SeniorCare enrollees had to be alive at the end of 2001 (in order to join the program in 2002), we restricted the Medicare comparison group to beneficiaries who were also alive at the end of 2001. The distinguishing features of enrollees in both states compared to the Medicare sample are: older age, more female, more rural, less likely to be in a long stay nursing home, i.e., long term care (LTC), based on Nursing Home Minimum Data Set (MDS) records calendar year 2001) and more likely to use longer term Medicare home health services (episodes with a duration of greater than 3 months). While these comparisons exclude beneficiaries who passed away during the year (and may have been sicker than other beneficiaries), the criteria were applied similarly across all SeniorCare and comparison groups.

Table 3.5. 2001 Demographic Comparison between Pre-Enrollment Statistics of Pharmacy Program Participants and the Medicare 5% Sample[1]

Item	IL Pharmacy Program Statistics	Rates Relative to IL Medicare 5% Sample	WI Pharmacy Program Statistics	Rates Relative to WI Medicare 5% Sample
Person-Years	137,785	56,764	59,201	29,395
Sex				
Female	76.7%	1.27	75.4%	1.28
Male	23.3%	0.59	24.6%	0.60
Age				
65-69	17.3%	0.68	15.7%	0.62
70-74	22.3%	0.89	21.7%	0.85
75-79	25.1%	1.15	24.9%	1.17
80-84	19.6%	1.30	20.5%	1.34
85 and older	15.7%	1.25	17.2%	1.35
Race/Ethnicity				
White	88.7%	0.99	98.0%	1.01
Black	9.4%	1.20	1.3%	0.66
Other/Unknown	1.9%	0.83	0.7%	0.66
County Setting				
Urban	62.6%	0.82	46.7%	0.77
Rural	37.3%	1.58	53.3%	1.35
Unknown	0.1%	0.59	0.0%	0.41
LTC Setting				
Community	97.7%	1.04	98.9%	1.05
Community LTC	1.5%	2.24	0.7%	2.05
Nursing Home	0.7%	0.13	0.5%	0.09

[1] All prospective SeniorCare enrollees had to alive at the end of 2001 to be able to enroll in 2002. For comparability, the Medicare comparison group is restricted to beneficiaries with Medicare Part A and B eligibility without Medicare HMO participation that lived through the end of 2001 and were at least age 65.

Medicare payments

Table 3.6 reports on Medicare payments in total and by service category for prospective enrollees and total state Medicare elderly. The payments profiles demonstrate that the state program population has a history of elevated use of hospitalization, home health services and

durable medical equipment. There is less use of Medicare Skilled Nursing Facility (SNF) and non-acute hospitals than found in the total state elderly Medicare population. The total costs of Medicare services are higher in the prospective program enrollees, by 7% in Illinois and 1% in Wisconsin.

Table 3.6. Comparison of 2001 Medicare Spending between Pharmacy Programs and the Medicare 5% Sample

	IL Pharmacy Program	Relative to IL Medicare 5% Sample	WI Pharmacy Program	Relative to WI Medicare 5% Sample
Person-Year Enrollees	137,785	56,764	59,201	29,395
Medicare Payments (Average				
Acute Care Hospital	$200	1.12	$155	1.05
Covered Drugs	$18	1.06	$15	0.94
Diagnostic Testing	$28	1.00	$27	1.00
Durable Medical Equipment	$17	1.31	$13	1.08
Home Health	$27	1.35	$11	1.22
Hospice	$1	0.33	$1	0.33
Non-Physician Practitioner	$7	0.88	$7	1.00
Outpatient Hospital/Clinic	$14	1.17	$12	1.00
Physician	$93	1.04	$77	1.04
Rehab./Psych. Hospital	$14	0.93	$11	0.92
Skilled Nursing Facility	$28	0.82	$25	0.76
Transport	$3	1.00	$3	1.00
Medicare Part A	$268	1.08	$201	1.00
Medicare Part B	$182	1.06	$156	1.02
Medicare Total	$450	1.07	$358	1.01
Other Payments (Average Monthly)				
Patient Co-Pay	$62	1.02	$55	0.98
Patient Deductible	$21	1.40	$18	1.38
Third Party Payment	$2	0.40	$3	0.60

Access to care

Table 3.7 profiles rates of compliance with HEDIS measures for disease surveillance and other measures of use of preventive services. Except for mammography and hearing tests the state program enrollees match or exceed rates of services for preventive care as observed in the state Medicare population in calendar year 2001. The modest differences likely reflect the socio-

demographic and health characteristics of the state program enrollees. Because of the income guidelines for eligibility for the state pharmacy programs, its enrollees are generally poorer than average Medicare enrollees but, as shown later, tend to have more chronic conditions.

Table 3.7. Comparison of 2001 HEDIS Quality of Care Measures (Rates per 1000 Enrollee Years) between Pharmacy Programs and the Medicare 5% Sample

	Illinois		Wisconsin	
HEDIS Measure	**Pharmacy Program**	**Relative to IL Medicare 5% Sample**	**Pharmacy Program**	**Relative to WI Medicare 5% Sample**
Dilated Eye Exam in Diabetes	5,280	0.96	6,144	0.98
HbA1c in Diabetes	7,044	0.99	8,388	1.02
Lipid Profile in Diabetes	5,376	0.95	5,928	1.04
Monitor Nephropathy in Diabetes	1,200	0.94	2,496	1.08
Eye Exam	5,220	1.02	5,736	1.09
Fecal Blood Test	732	0.87	312	0.96
Flu Vaccination	6,000	1.08	7,560	1.06
Pneumonia Vaccination	636	1.06	732	1.11
Hearing Test	384	0.86	456	0.93
Lipid Test	1,860	1.31	1,728	1.31
Mammogram (Female)	3,936	0.90	4,704	0.96
General Practitioner Visit	6,588	1.06	9,552	1.06
Physician Specialist Visit	10,200	1.02	10,896	1.04

Disease prevalence

Table 3.8 provides detail on the prevalence of selected chronic diseases among program enrollees. The diseases in the table were selected based on their sensitivity to outpatient care management, including pharmacy therapies. The disease rates are based on diagnoses reported by physicians and hospitals in Medicare claims. For every disease category except Parkinson's disease and dementia, the state population demonstrates a higher level of reported diagnoses.

The higher prevalence potentially reflects a higher level of need than is found in the state elderly Medicare population.

Table 3.8. Comparison of 2001 Chronic Disease Prevalence between Pharmacy Programs and the Medicare 5% Sample

	Illinois		Wisconsin	
Chronic Disease	**Prevalence in Pharmacy Program Enrollees**	**Relative to Medicare 5% Sample**	**Prevalence in Pharmacy Program Enrollees**	**Relative to Medicare 5% Sample**
Person-Years	137,785	56,764	59,201	29,395
Diabetes	25.8%	1.37	22.4%	1.22
Congestive Heart Failure	16.9%	1.42	14.0%	1.40
Heart Disease	36.9%	1.23	33.5%	1.22
Stroke/CVD	14.1%	1.27	10.8%	1.22
Chromic Obstructive Pulmonary Disease (COPD)	20.6%	1.40	17.8%	1.38
Arthritis	30.7%	1.55	26.0%	1.44
Parkinson's	1.5%	1.00	1.3%	1.00
Alzheimer's/Dementia	5.2%	0.83	3.4%	0.60

Discussion

The annual program payments in Illinois and Wisconsin are both approximately $1,300 per enrollee. In order for the programs to achieve budget neutrality, reductions in state Medicaid payments would need to be achieved that equaled or exceed program costs. Medicare payments for acute care hospitalizations are elevated in the program populations compared to Medicare beneficiaries overall, but the overall Medicare payments are only 1% in Illinois and 7% in Wisconsin higher than the state elderly Medicare populations. Based on profiles of program enrollees relative to overall Medicare beneficiaries the same state, pharmacy program enrollees are older than average, have a higher level of medical risk and use more hospital and home health services. At the same time the population of pharmacy program enrollees is receiving levels of preventive services that for many measures match or exceed the general elderly population and incur total Medicare payments at comparable levels. Medicaid payments for the population are incurred only when enrollees enter Medicaid. Savings can accrue from deferral of Medicaid entry or permanent diversion, and occur only if the costs of care averted exceed the

costs of the drug benefit. For Medicare beneficiaries, non-pharmacy Medicaid payments are heavily concentrated in community and nursing home long term care services. Medicaid nursing home care is highly associated with cognitive impairments such as Alzheimer's and dementia. The program enrollees do not exhibit high levels of diagnoses for cognitive impairments or serious neurological diseases such as Parkinson's.

The data and analyses in this task are intended to be descriptive and simply to raise hypotheses and mechanisms about cost offsets. The primary observation is that program enrollees have higher rates of chronic diseases that are primarily treatable conditions in the community. The demographic and diagnosis data suggest that pharmacy program enrollees constitute a population that is sensitive to pharmacy therapy and other types of ambulatory care but is not demonstrating utilization and service access patterns that are substantially different than other Medicare elderly. The Medicare diagnosis, utilization and payment data do not indicate either the potential for large savings in Medicare costs or a large imminent risk of costly Medicaid financed long term care utilization. On the other hand, the high prevalence of chronic diseases and their associated pharmacy costs suggest that the support from the pharmacy programs may be very helpful in maintaining some vulnerable members in the community who might otherwise have needed Medicaid funded long term care for a combination of financial and medical reasons. The analysis in Task 4 confirms this hypothesis.

TASKS 4 AND 5: EFFECTS ON MEDICAID AND MEDICARE EXPENDITURES

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Overview

The SeniorCare programs in Illinois and Wisconsin were designed to increase access to prescription drugs for their enrollees, who were Medicare-enrolled elders aged 65 and older with incomes below 200% of the Federal poverty level (FPL) but not enrolled in Medicaid. Elders in this income range often have difficulties affording the prescription drugs they need.

Better access to prescription drugs is believed to improve health status for elders, and thus may reduce spending on other health services. This portion of the evaluation examines whether the increased access provided by the state pharmacy assistance programs improved health status sufficiently to

1) reduce Medicaid costs, through keeping enrollees off of Medicaid and lowering costs for any enrollees who did enter Medicaid;
2) reduce the use of and expenditures on health services funded by Medicare.

This report briefly describes the methods we used to develop comparison populations of similar elders in another state (Ohio) so that outcomes could be compared with and without the SeniorCare programs. Results are then presented for the Medicaid outcomes: Medicaid entry, nursing home entry by new Medicaid recipients, and Medicaid costs for former SeniorCare enrollees. The effect of the SeniorCare programs on Medicare expenditures is discussed in the final section.

Analyses for buy-in beneficiaries found higher Medicaid entry in Illinois, but lower in Wisconsin compared to the comparison state. Medicaid costs per buy-in member were substantially below expectations.

In examining Medicare costs, descriptive models (simple differences) found higher Medicare costs associated with SeniorCare. Econometric models that examined the differential rates of change found lower rates of growth of inpatient admissions in Illinois and Wisconsin compared to Ohio.

Our ability to examine impacts on both programs was limited by the short follow up period (about one year) and, in the case of Medicaid, a possible identification effect in which the publicity around SeniorCare and the enrollment process itself helps identify low-income seniors not previously on Medicaid.

Methods

<u>Program effects to be assessed and factors affecting them</u>

The critical variables for program outcome assessed by this portion of the evaluation were Medicaid entry, Medicaid costs for new entrants, nursing home entry (the major driver of Medicaid costs), and Medicare utilization. The objective of the evaluation is to estimate how different these outcomes were for SeniorCare enrollees from what they would have been without

the program. The effects experienced by an individual beneficiary due to enrollment in a state pharmacy program depend on his or her:

- Need for prescription drugs
- Access to prescription drugs prior to enrollment
- Baseline probability of experiencing the effects of interest (Medicaid entry, nursing home entry, Medicare services utilization)

The overall effect of the programs is the average effect on the entire populations they served or studied, which combines groups with differing program sensitivities; but analysis for specific groups showing differing levels of effect can inform future policy development. It is important to account for these differences in sensitivity to the program as we consider what likely would have occurred without the program. Beneficiary characteristics associated with differences in prior access to prescription drugs include:

- Lower vs. higher income: Beneficiaries with lower incomes would find it harder to afford prescription drugs prior to program implementation and were closer to the threshold for Medicaid eligibility.
- Previous insurance for prescription drugs. It is believed that few of the beneficiaries who enrolled in either SeniorCare program had good access to prescription drugs through employer-paid, VA, or other insurance. But some may have dropped private coverage when a low-cost program became available. [5]

As noted earlier in this report, the Illinois SeniorCare program presents a special situation of prior coverage, because all income-eligible participants in a previous state-only pharmacy program connected with the state's property tax relief program (called "Circuit Breaker") were "rolled over" into the SeniorCare program on the start date, termed "rollovers." The circuit breaker prescription drug program covered drugs used to treat specified illnesses, which included many chronic diseases of the elderly with the exception of mental illness and gastrointestinal disease. The rollovers represented about 70% of the Illinois first year enrollees (120,000 of 172,000 enrollees). This means that SeniorCare represented an expansion of coverage for the majority of Illinois enrollees but not completely new coverage. SeniorCare was not expected to affect rollovers as much as new enrollees in Illinois, nor Wisconsin enrollees (all new enrollees). The indicator for enrollment in the first month identifies this "rollover" population in Illinois.

Beneficiary characteristics associated with different baseline probabilities of Medicaid entry and Medicare utilization include:

- Chronic disease and frailty vs. better health status: increased access to prescription drugs can make more difference for beneficiaries with greater need for prescription drugs. Program-sensitive groups can be identified by the presence of specific chronic disease diagnoses in

[5] As noted earlier, the Illinois program contained a provision to avert "crowd out" which provided an incentive payment of $25 per month to enrollees with existing private coverage, so that the enrollees would maintain private coverage and not enroll in SeniorCare. Illinois SeniorCare enrollees were also able to keep prior private coverage and use it as a coordinated benefit with SeniorCare, in which case they would not receive the $25 incentive payment. As described in the Task 1 report, few Illinois enrollees exercised either option. This suggests that few SeniorCare enrollees had prior private insurance coverage for prescription drugs, or that if they did, it was extremely limited.

prior Medicare claims, and by a frailty indicator. Prior year utilization of Medicare services may indicate increased health need.

- Time of enrollment: enrollment patterns may also be an indicator of need for prescription drugs. In Illinois, it is believed that most near-poor seniors with ongoing prescription drug need were enrolled in the state-only program prior to the start date, and that subsequent enrollees were likely those experiencing new needs. In Wisconsin, beneficiaries with chronic drug pre-registered before the program start date, and those with new needs may have enrolled later. We use enrollment date (first month enrollee vs. later month enrollee) as a beneficiary characteristic in the analysis.
- For Medicaid, income and assets near the Medicaid eligibility threshold vs. income well above the threshold: increased access may have a protective effect, enabling beneficiaries to avoid costly health events that would make them eligible for Medicaid; this effect is likely to be greater the nearer the beneficiary's income to the Medicaid eligibility threshold.

Program study population and comparison groups

Previous research, as well as results presented in the Task 3 report, show that enrollment in SeniorCare is not random. Seniors enter a state pharmacy assistance program because they need, or expect to need, prescription drugs. Thus, enrollees tend to be older and more ill than seniors as a whole. Because SeniorCare has an income threshold of 200% of the Federal Poverty Level (FPL), enrollees also must have lower income than elders overall. Our evaluation was based on selecting two groups of comparison subjects from the state of Ohio as comparable as possible to the enrollees. Through the technique of direct and propensity score matching, the comparison group for evaluating the Illinois program is "shaped" to match Illinois enrollees, and that for evaluating Wisconsin enrollees is shaped to match enrollees from that state.

The technique of propensity scores had been used for a decade to evaluate job training programs and other studies in which selection effects were a major factor in the evaluation (Angrist 1997; Hahn 1998; Coyte, Young and Croxford 2000; Smith 2000; Ichimura and Taber 2001; Smith and Todd 2001; Dehejia and Wahba 2002; Lechner 2002; Bryson, Dorsett and Purdon 2002; Hirano, Imbens and Ridder 2002). This technique was just starting to be used by health services researchers when the current evaluation was being initiated (e.g. Payne et al 2002; Shepard et al 2002). Since then, it has seen increasing use as its value in health services research is increasingly recognized.

For each enrollee, we needed to locate a matched beneficiary in Ohio who would have been equally likely to have joined SeniorCare if the program had been available, and who would also match on characteristics related to program sensitivity. To find these individuals, we used Illinois and Wisconsin populations of enrollees and nonenrollees to fit an equation that estimates the probability for each individual that he or she enrolled in SeniorCare; this equation captures both probability of being eligible and probability of joining given eligibility. These estimates are interesting in themselves (see Appendix 3 and Appendix Table A-1), suggesting that elders with certain characteristics were more likely to be eligible for SeniorCare and to enroll. For example, the Illinois enrollees were more likely than nonenrollees to be: female, living in Census blocks with a higher proportion of low-income elder household heads, diagnosed in the last year with diabetes, chronic heart failure, and chronic obstructive pulmonary disease. Of special interest are the variables capturing Medicare health services utilization (hospital, home health, skilled

nursing facility use) within three months prior to enrollment. We included these variables in the matching process so the Ohio comparison group would have similar current health utilization status to the Illinois and Wisconsin elders who joined the programs because a health event increased their need for prescription drugs. The variables relating to program sensitivity also increased beneficiaries' probability that they enrolled in the program. This increases our confidence in these estimates, because it makes sense that beneficiaries expecting greater effects from the program would be more likely to join.

For each enrollee in Illinois, Ohio aged Medicare beneficiaries were found who matched in sex, race, age category, and number of chronic diseases, as well as several other direct matching variables. The probability models fitted for Illinois data were then used to find the Ohio elder with the most nearly equivalent probability of enrolling in SeniorCare. The same procedure was used to match each Wisconsin enrollee to an Ohio beneficiary who was the same on some characteristics and had an equal or nearly equal estimated probability of enrolling in SeniorCare.[6] We matched participants to controls in Ohio if the probability of participation was within 2 percentage points. If there was no match within that tolerance, then the participant was excluded from the propensity score analysis. Altogether, we matched 107,111 (95.0%) of 112,713 eligible Illinois rollovers, 22.172 (93.4%) of 23,737 eligible new Illinois enrollees, 49,724 (97.6%) of 50,930 eligible Wisconsin enrollees and 179,007 (95.5%) of 187,380 eligible enrollees overall.

Special issues: Matching on income and prior access to prescription drugs

It is important to emphasize that the beneficiaries who enrolled in SeniorCare in Illinois and Wisconsin are known to have incomes less than 200% of FPL. In addition, they were seeking access to prescription drug insurance, suggesting that they were not insured through private retirement plans, the Veterans Administration, or another program. In seeking beneficiaries in Ohio who were "like" the Illinois and Wisconsin beneficiaries who actually enrolled, our analysis can only use estimated proxies for income eligibility and cannot determine whether they had other access to prescription drugs. Our methods matched Ohio beneficiaries to SeniorCare enrollees based on the proxies for income that were available for both Ohio and the SeniorCare enrollees, namely: Social Security monthly benefit, income distribution of the Census block of residence, and participation in the state buy-in program for Medicare Part B. Through use of these income proxy variables, we believe we have identified Ohio comparison groups that are more likely to have incomes below 200% of poverty than the general Ohio elderly population – but we have no guarantee, as we do with the SeniorCare enrollees, that these are truly low-income beneficiaries. The only Ohio beneficiaries that we can be sure had low incomes were those matched to SeniorCare enrollees based on participation in the state Medicare Part B buy-in program. In like manner, each Ohio comparison subject is "like" his or her match in Illinois or Wisconsin on observable variables, some of which are correlated with lack of drug insurance.

[6] We also used exact matching and propensity score matching to identify a comparison group from among nonenrollees in each state. However, it is important to remember that the in-state comparison group had the opportunity to enroll in SeniorCare and did not do so. Even though the matched comparison beneficiaries had a close estimated probability of enrollment based on observable characteristics, it is very likely that there are unobservable reasons for their nonenrollment: they may have had employer-based drug insurance, VA coverage, or higher incomes. The characteristics that would keep elders from enrolling are also associated with better access to prescription drugs, so that comparisons with enrollees are biased against finding savings for Medicaid.

But we have no guarantee that the Ohio comparison persons were without prescription drug coverage in 2002 and 2003.

Because we know the actual income of SeniorCare enrollees, we are able to compare the median income of SeniorCare enrollees against the median of their neighborhoods. From this information, we can determine that enrollees have substantially lower income than their matched comparison beneficiaries. Their lower income makes them substantially more likely to enroll in Medicaid. Because Medicaid entry is very sensitive to income, the analysis of Medicaid entry was restricted to the buy-in population for which direct information was available on the income of prospective controls, see Appendix 1.

Enrollment dates and follow-up period

The Illinois SeniorCare program began operations in June 2002 and the Wisconsin SeniorCare program began in September of the same year. Because of funding and scope constraints on our project, we could only observe Medicaid use through September, 2003 and Medicare use through calendar year 2003. For Medicaid, this imposed a 16 month observation period on the Illinois program and a 13 month period on the Wisconsin program; the windows for Medicare were 19 and 16 months respectively. To ensure complete data, we limited our study samples to enrollees where we had the opportunity to observe at least one full year in the program. Thus the evaluation results refer only to beneficiaries who enrolled in or before December 2002. We did not, however, restrict analysis to beneficiaries who remained in the program for one year or more. Thus, some members of the enrolled cohorts experienced death, transfer to Medicaid, and disenrollment for other reasons. The Ohio comparison subjects were each assigned a date of "enrollment" that was the same as their Illinois or Wisconsin match. Table 4.1 presents basic facts about the study population. Further details are presented in Appendix Table A-2 .

Table 4.1: Study Populations

State	Start Date	Months until December 2003 (end of observation for Medicare)	Enrolled in First Month	Enrolled in Later Months through December 2002	Total enrolled through end of 2002	Total Enrolled in First 12 Months
Illinois	June 1, 2002	19	107,111	22,172	129,283	144,000
Wisconsin	September 1, 2002	16	33,343	16,381	49,724	68,292

Source: Claims analysis (through end of 2002) and report on Task 1 (end of first program year).

Using the matched data, we can then observe any differences in Medicaid entry, Medicaid costs, and Medicaid-funded nursing home entry, as well as utilization and expenditures for Medicare services expenditures.

Analyses for the buy-in population

Whereas Medicare eligibility is based on age and disability status, Medicaid eligibility depends on financial need (income, assets, and medical expenditures). Income eligibility for Medicaid extends from an income below 100% of the poverty level (but with some assets) up to 200% of the poverty level. A senior within this range and particularly at the bottom end of this range (i.e., whose income or assets are only slightly above the threshold for Medicaid eligibility) becomes eligible for Medicaid with a slight decrease in income or depletion of assets, or a slight increase in medical spending. A senior at the upper end of the range or entirely above it is much less likely to quality. This fact makes careful matching of income between participants and controls critical to the analysis of Medicaid entry and Medicaid funded nursing home entry.

The evaluation is further complicated by an asymmetry in information about income between SeniorCare participants and controls. We know that SeniorCare participants had to have income in the eligible range – generally 200% of poverty or less—as a condition of their eligibility. We do not have direct measurement nor very precise proxies for the income of control subjects. If the available proxies for socio-economic status were weak, then a SeniorCare participant would be matched with a comparison subject who would be more similar to an average Medicare beneficiary, with income and assets substantially above the Medicaid thresholds. Appendix 1 discusses the effect of differential accuracy of income measurement between SeniorCare participants and controls.

Analysis of the small but important group of enrollees and comparison subjects matched on participation in the state Part B buy-in program sheds further light on the Medicaid entry results, because we can be sure that both enrollees and comparisons truly have low incomes.[7] Elders become eligible for Medicaid based on income relative to health expenditure need in states, including Illinois and Wisconsin, with "medically needy" eligibility provisions. All SeniorCare enrollees had incomes less than 200% of the Federal Poverty Level and thus are much more vulnerable to Medicaid entry than the general elderly state populations – it is more likely that medical expenses will exhaust income to below poverty levels for these near-poor seniors. To have a similar probability that medical expenses would precipitate them into Medicaid, Ohio comparison subjects should have similarly low incomes.

The buy-in population consists of persons who have enrolled in state programs as a Qualified Medicare Beneficiary (QMB) or a Specified Low Income Medicare Beneficiary (SLMB). They qualify with income below 120% of the FPL. The state supports their Medicare Part B premium and, for QMBs, Medicare deductibles and co-payments.[8] For members of these programs,

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[7] Qualified Medicare Beneficiary (QMB) program and the Specified Low-Income Medicare Beneficiary (SLMB) allow state Medicaid programs to pay Part B premiums for Medicare beneficiaries with incomes less than 120% of FPL (Rosenbach and Lamphere 1999). The important point is that we know that family income is below 120% of FPL, and thus close to the Medicaid income threshold, for Ohio matches as well as the SeniorCare enrollees in both states.

[8] Specified Low Income Medicare Beneficiary (SLMB) in Ohio is described by COAAA (2007) as "a state program that uses Medicaid money to pay the Medicare Part B premium for persons whose income is low enough to qualify Specifically an individual entitled to Part A Medicare hospital insurance who has an income above 100% but not over 120% of the Federal poverty level, and resources not exceeding twice the SSI limit. Eligibility for Medicaid benefits is limited to payment of Medicare Part B (medical insurance) premiums." COAAA describes Qualified Medicare Beneficiary (QMB) as "a state program that uses Medicaid money to pay the Medicare deductibles and co-payments for persons whose income is low enough to qualify. Qualifying income is above the poverty level."

eligibility is based on objectively verified individual income and, for QMBs, specified assets also must be below specified thresholds. Since the QMB benefit covers Medicare copayments and deductibles, it will tend to be used most by beneficiaries with above average medical expenses.[9] The matched buy-in enrollees constitute 6.0% of all matched Illinois enrollees and only 3.6% of all matched Wisconsin enrollees. While small relative to all enrollees, the buy-in populations are sufficiently large for instructive and statistically significant findings.

Based on our goal of comparing SeniorCare to matched Ohio beneficiaries, we computed relative rates of SeniorCare enrollees to their matched controls for Medicaid entry, nursing home entry, spending per Medicaid entrant, and spending per enrollee. For these comparisons, we treated the Ohio beneficiaries matched to SeniorCare enrollees as comparable to enrollees for "per enrollee" calculations in Ohio.

The standard errors of the means proved to be relatively small compared to the means, ranging from 4% of the respective means in the largest sample group (Illinois-All) to 15% in the smallest sample group (Illinois-New). We therefore estimated 95% confidence intervals by approximating the spending in the SeniorCare and matched Ohio populations as independent samples with log normal distributions with the same observed standard error of the mean relative to the mean.

The remainder of the report is in two sections. The next section reports our findings concerning the effect of the SeniorCare programs on Medicaid entry, services and costs. The subsequent section (Task 5 Findings: Impact on Medicare Expenditures) reports our findings concerning the effect of the SeniorCare programs on Medicare expenditures.

Task 4 Findings: Medicaid Entry and Costs

State pharmacy assistance programs do not serve beneficiaries enrolled in Medicaid. Thus the only way that the increase access they provide can reduce Medicaid costs is by keeping their enrollees from entering Medicaid, delaying their entry into Medicaid, or by reducing Medicaid costs for any new Medicaid beneficiaries who have formerly been SeniorCare members. If increased access to prescription drugs due to the pharmacy assistance program can help to prevent high-cost medical events (most importantly nursing home entry) that would precipitate spending down into Medicaid, then we should observe a difference in rates of entry onto Medicaid. Increased access to prescription drugs for the enrolled population could also reduce health services needs for enrollees who enter Medicaid, reducing cost per Medicaid enrollee below what it otherwise would have been.

<u>The "woodwork" effect</u>

However, another effect of the new pharmacy assistance programs was increased information for low-income seniors about the safety net programs that were available to them; the publicity about the new SeniorCare program was very effective in leading seniors to sign up; also, while seeking to sign up for SeniorCare, some beneficiaries or the administrative officials helping or

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Source: COAAA (2007). Central Ohio Area Agency on Aging. Glossary of Terms. Columbus, OH. Updated May 10th, 2007. Web. http://www.coaaa.org. Accessed June 28, 2007.

[9] See also: Illinois Legal Advocate (2007). http://www.illinoislegaladvocate.org. Accessed June 28, 2007.

reviewing their application may have identified some seniors who, in fact, were eligible for Medicaid but were not previously enrolled. This by product of outreach, termed the "woodwork effect," has been noted repeatedly in outreach for the State Children's Health Insurance Program (SCHIP) leading to increased Medicaid enrollment (US Office of Inspector General, 2001; Georgetown University 2007). While the woodwork effect does lead to increased Medicaid costs, it also contributes to the program's objective of improving access to health care among the poor and disabled (Georgetown University 2007).

Entry into Medicaid

We first compared entry onto Medicaid for SeniorCare enrollees in Illinois and Wisconsin for the first year of each program. The percent of the buy-in enrollees entering Medicaid is shown in the first panel of Table 4.2 for the first year. For the Illinois-All and the Illinois-Rollover buy-in populations, SeniorCare was associated with significantly higher Medicaid entry than matched controls. The unadjusted relative risks were 1.484 and 1.600, respectively. However, for the Illinois-new population, rates of Medicaid entry were slightly lower than the Ohio comparison population (unadjusted risk ratio 0.944), and for Wisconsin enrollees, Medicaid entry was substantially lower (unadjusted risk ratio 0.506).

Table 4.2 Medicaid entry and costs within the SeniorCare (SC) and matched comparison buy-in populations, by enrollment period

Item	IL-All	IL Rollover	IL New	WI-All
		Medicaid entry		
Matched SC enrollees, N	7,699	6,431	1,268	1,798
SC enrollees who entered Medicaid	2,518	2,234	284	200
SC, % Medicaid entry	32.7%	34.7%	22.4%	11.1%
OH matched controls, N	7,699	6,431	1,268	1,798
OH controls who entered Medicaid	1,697	1,396	301	395
OH Controls, % Medicaid entry	22.0%	21.7%	23.7%	22.0%
Crude risk ratio for Medicaid entry (SC/OH)	1.484	1.600	0.944	0.506
		Medicaid spending per Medicaid entrant		
Among former SC enrollees, mean	$1,930	$2,033	$1,123	$2,563
Among former SC enrollees, std. dev.	$3,645	$3,737	$2,691	$4,438
Among OH controls, mean	$7,281	$7,972	$4,072	$6,716
Among OH controls, std. dev.	$14,114	$14,963	$8,519	$13,057
Relative spending per entrant (SC/OH)	0.265	0.255	0.276	0.382
Lower 95% confidence interval	0.234	0.223	0.175	0.264
Upper 95% confidence interval	0.296	0.287	0.377	0.499
		Medicaid spending per enrollee		
Per former SC enrollee, mean	$631	$706	$252	$285
Per former SC enrollee, std. error	$26	$30	$38	$40
Per OH control, mean	$1,605	$1,731	$967	$1,475
Per OH control, std. error	$83	$96	$126	$158
Relative spending per enrollee (SC/OH)	0.393	0.408	0.260	0.193
Lower 95% confidence limit	0.342	0.352	0.158	0.127
Upper 95% confidence limit	0.444	0.464	0.362	0.260
Reduction in Medicaid spending, mean	61%	59%	74%	81%
Lower 95% confidence limit	66%	65%	84%	87%
Upper 95% confidence limit	56%	54%	64%	74%

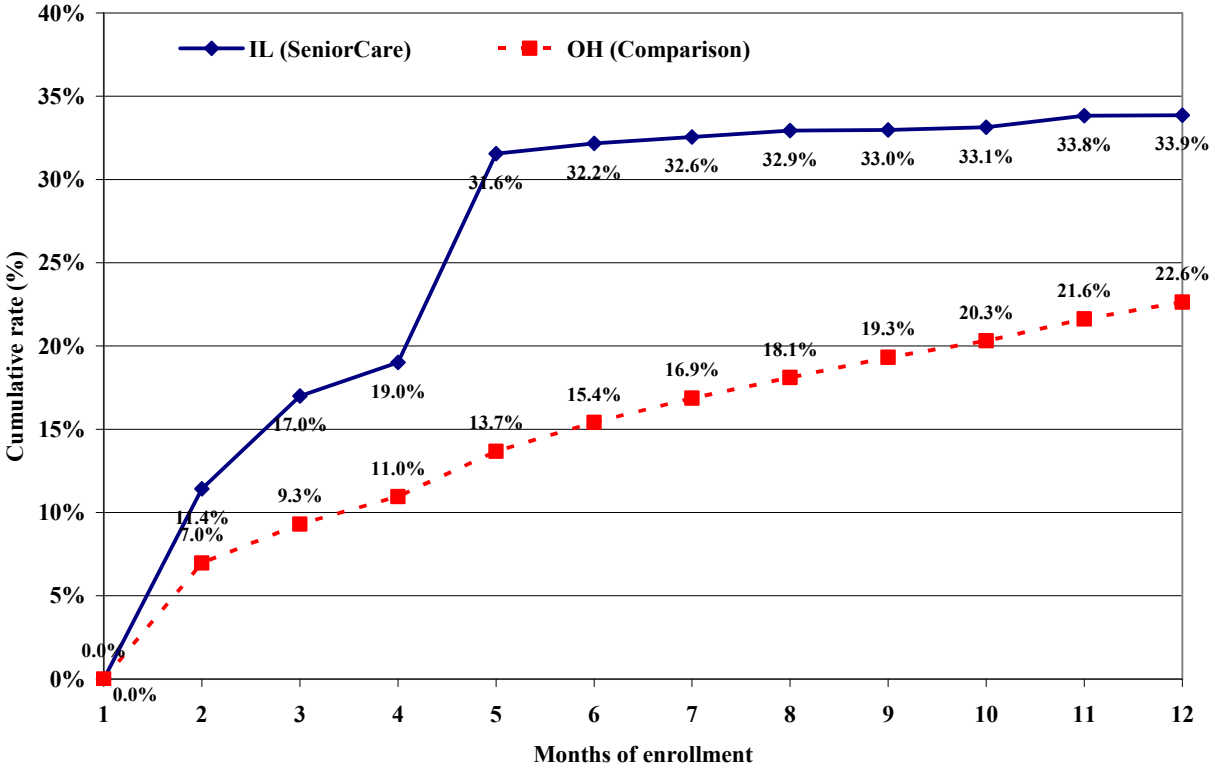
Multivariate survival analyses for time to Medicaid entry among the buy-in population that controlled for the characteristics used in the matching process confirmed these findings. For buy-in Illinois-all, the adjusted risk ratio for Medicaid entry for SeniorCare compared to Ohio was 1.69 with a 95% confidence interval ranging from 1.57 to 1.81. For Illinois-rollover this adjusted risk ratio was 1.82 with a 95% confidence interval ranging from 1.69 to 1.97. For

Illinois-new the adjusted risk ratio was 1.07 with a 95% confidence interval ranging from 0.89 to 1.29. As the latter interval includes 1.00, we found no statistically significant effect on Medicaid entry for Illinois-new. Thus, for the Illinois buy-in populations, Medicaid entry among SeniorCare enrollees was 69% higher overall, 82% higher among rollovers, and 7% higher in new enrollees; the higher rate was presumably due to the woodwork effect. For Wisconsin, the adjusted risk ratio was 0.48 with a 95% confidence interval ranging from 0.40 to 0.58. This result shows a very important and highly significant protective effect on Medicaid entry in Wisconsin. Medicaid entry was 52% lower among buy-in enrollees in Wisconsin compared to matched Ohio buy-in Medicare beneficiaries.

To better understand the time pattern of Medicaid entry, we graphed cumulative entry as a function of time by subtracting the Kaplan-Meier survival function in each month from 100%. Figure 4.1, the Illinois graph, shows a rapid ascent in the first 3 months of Illinois SeniorCare (June through August, 2002) and a big surge in September 2002. Further analyses for the two Illinois populations found that this erratic pattern was confined to the Illinois-rollover group, where the enrollment data was a legacy of an earlier program. At the same time, enrollment data for SeniorCare itself showed a decrease in SeniorCare enrollees as the enrollment data were cleaned to remove duplicate entries, ineligible members, and deceased persons. It seems likely that the apparent increase in Medicaid enrollment in Illinois is an artifact from examining and cleaning the data on SeniorCare rollover enrollees. In the course of this, residents who were actually eligible for full Medicaid were identified. After Oct 2002, very few SeniorCare buy-in enrollees entered Medicaid, while the number of comparison enrollees (from Ohio) rose steadily. This finding suggests that once the data anomalies were corrected, SeniorCare may have been protective against Medicaid entry.

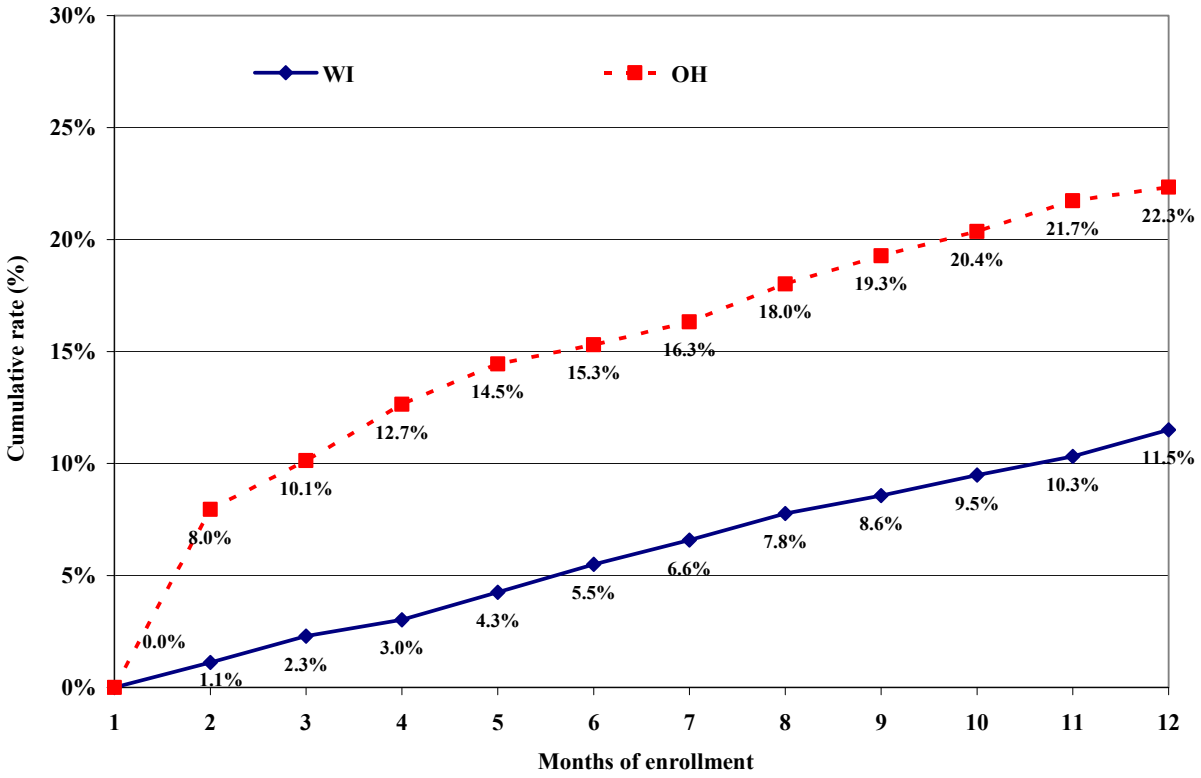
Figure 4.2 graphs Medicaid entry in Wisconsin among buy-in enrollees. In the first month (September 2002), Medicaid entry in Ohio jumps somewhat, perhaps an artifact of our matching process. Nevertheless, the data show that Medicaid entry among SeniorCare enrollees is consistently lower than that for the comparison subjects.

Figure 4.1. Medicaid entry among Illinois buy-in beneficiaries and matched Ohio controls*



* Based on product-limit estimates, which adjust for declining numbers remaining at risk for nursing home entry.

Figure 4.2. Medicaid entry among Wisconsin buy-in beneficiaries and matched Ohio controls*



* Based on product-limit estimates, which adjust for declining numbers remaining at risk for nursing home entry.

Medicaid spending per entrant onto Medicaid

In the second panel in Table 4.2, we examine costs per Medicaid entrant. SeniorCare enrollees who enter Medicaid cost substantially less in their first year than matched Ohio beneficiaries. Supplemental analyses (not shown) show that the higher costs in Ohio are not due to having more months on Medicaid. Both SeniorCare entrants and their comparison subjects had about 5 months on Medicaid (out of 12 possible). The cost per former Illinois SeniorCare enrollee who enters Medicaid is only 0.265 of the corresponding cost of an Ohio control, and that of former Wisconsin SeniorCare enrollees who enter Medicaid is only 0.382 of the corresponding cost of matched Ohio controls. When expressed per enrollee-year, these expenditures are about $5,000 for Medicaid entrants from SeniorCare compared to about $14,000 for those from Ohio. This contrast suggests that the pattern of Medicaid use differs between SeniorCare and comparison enrollees, with the former SeniorCare enrollees having a much smaller share of nursing home entrants, compared to the less expensive community residents.

Medicaid funded nursing home entry

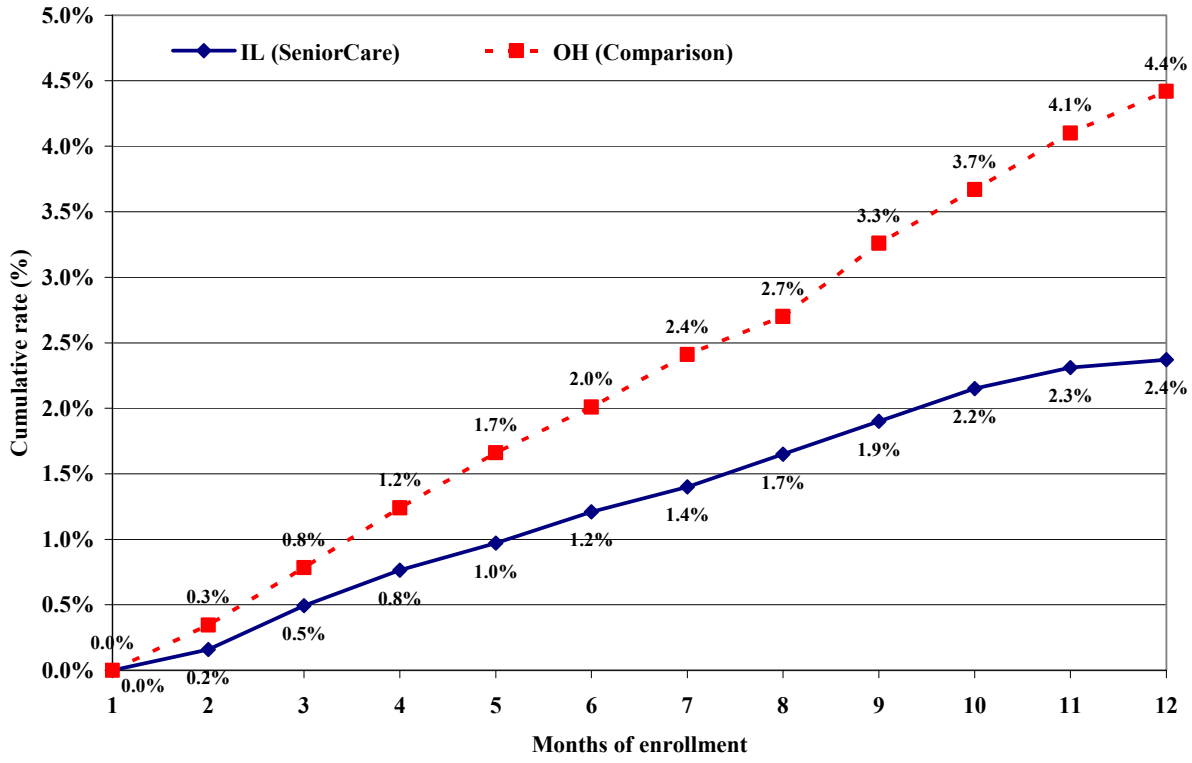
To further examine the pattern of services, Figure 4.3 shows nursing home entry among former SeniorCare members and Ohio controls. Nursing home entry is 45% lower for former SeniorCare members than for Ohio controls (2.4% versus 4.4%, respectively), consistent with the pattern that most SeniorCare enrollees who entered Medicaid needed only community services, and SeniorCare appears to be protective against nursing home entry. Further analyses showed that when the two Illinois populations were separated, the rollover enrollees were at greater risk of nursing home entry, but SeniorCare proved protective against nursing home entry in both rollovers and new enrollees.

Figure 4.4 presents the comparable graph of nursing home entry for Wisconsin. It shows that former Wisconsin SeniorCare members had a 51% lower rate of nursing home entry than the matched Ohio controls (2.2% versus 4.5%, respectively). Table 4.3 shows a multivariate hazard function of nursing home entry. The hazard ratio for Wisconsin member ("state Rx enrollee") compared to Ohio control is 0.518, corresponding to a 48% reduction after correcting for other factors. Because of the matching process, crude and multivariate results are, not surprisingly, similar.

Medicaid spending per former SeniorCare enrollee

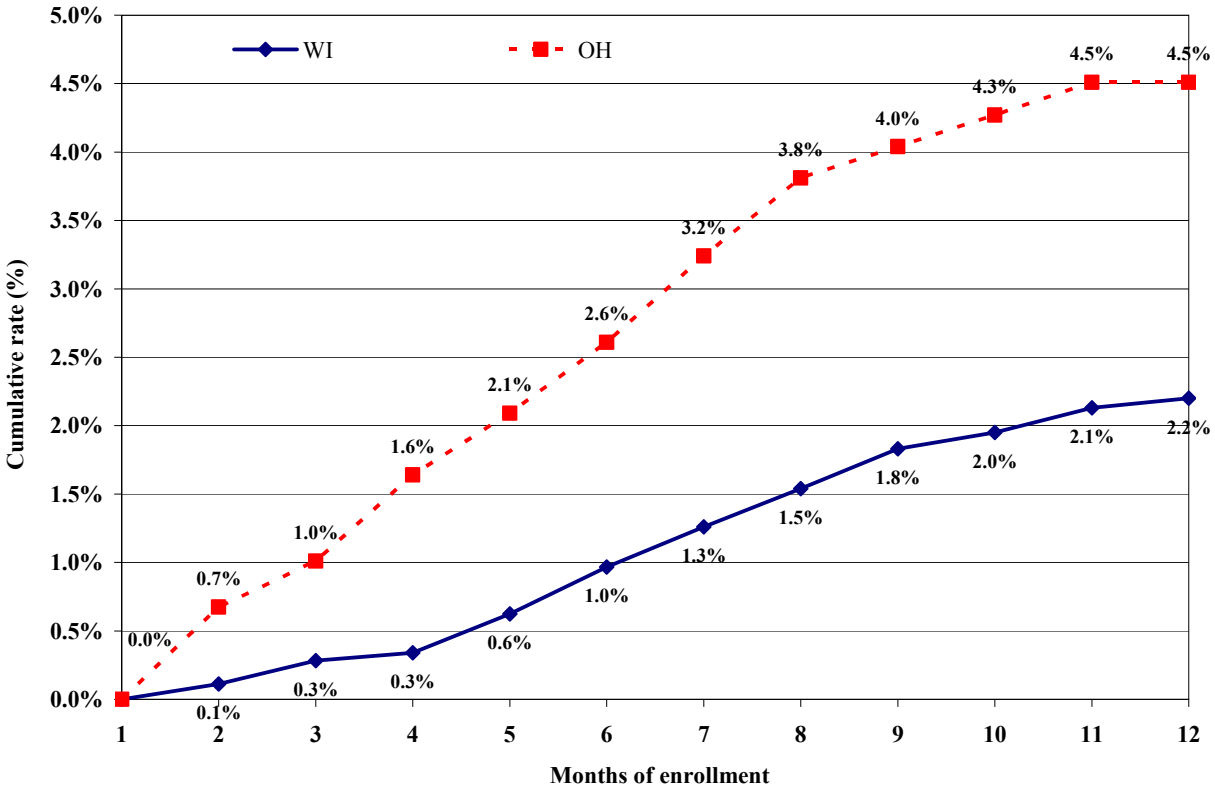
The lower panel in Table 4.2 shows Medicaid spending per enrollee for former SeniorCare members and matched Ohio controls. This component combines the rate of Medicaid entry (top panel) and cost per Medicaid entrant (middle panel). The results show that Medicaid spending is substantially below that of comparison subjects in all populations. All of the apparent savings are statistically significant, as none of the confidence intervals include the value of 1.000. In the final lines of Table 4.2, we have calculated the percentage savings in Medicaid costs for the buy-in population (based on 100% less the relative spending). The results show savings in Medicaid costs among buy-in enrollees of 61% for Illinois and 81% for Wisconsin. In dollar terms, these are the differences between the cost per enrollee in Ohio and that in SeniorCare. The resulting first year savings for buy-in enrollees are $973 for Illinois and $1,190 for Wisconsin. In Task 3, we saw that the first year program payments per enrollee (not per enrollee year) averaged $1,160 in Illinois and $865 in Wisconsin. Thus, for buy-in enrollees, SeniorCare has almost paid for itself in Illinois and more than paid for itself in Wisconsin.

Figure 4.3. Nursing home entry among Illinois buy-in beneficiaries and matched Ohio controls*



* Based on product-limit estimates, which adjust for declining numbers remaining at risk for nursing home entry.

Figure 4.4. Nursing home entry among Wisconsin buy-in beneficiaries and matched Ohio controls*



* Based on product-limit estimates, which adjust for declining numbers remaining at risk for nursing home entry.

Table 4.3. Hazard function for nursing home entry among Wisconsin Senior Care buy-in participants and matched Ohio controls

Variable	Parameter Estimate	Standard Error	Statistical Significance	Hazard Ratio
Inpatient 0-3 Months of Index	0.858	0.289	0.003	2.357
Home Health 0-3 Months of Index	0.055	0.544	0.919	1.057
SNF 0-3 Months of Index	0.179	0.824	0.828	1.196
2001 JAI Morbidity Score	0.097	0.065	0.136	1.102
2001 Indicator for a Arthritis diagnosis	0.013	0.243	0.957	1.013
2001 Indicator for a Chronic heart disease diagnosis	-0.244	0.251	0.332	0.784
2001 Indicator for a Congestive heart failure diagnosis	0.364	0.309	0.238	1.439
2001 Indicator for a COPD diagnosis	-0.393	0.272	0.149	0.675
2001 Indicator for a Cerebrovascular disease diagnosis	0.205	0.332	0.536	1.228
2001 Indicator for a Diabetes diagnosis	-0.284	0.261	0.277	0.753
SSA Dept Count=1; SSA Pym (in 1,000s)	0.016	0.037	0.670	1.016
SSA Dept Count>1	-3.186	3.131	0.309	0.041
SSA Dep Count>1 * SSA Pymt (in 1,000s)	0.212	0.218	0.331	1.237
% Census Block: Income $0-$10,000	-0.267	1.233	0.829	0.766
% Census Block: Income $10,000-$20,000	-0.214	1.157	0.853	0.807
% Census Block: Income $20,000-$30,000	0.745	1.234	0.546	2.107
% Census Block: Income $30,000-$40,000	-2.037	1.498	0.174	0.130
% Census Block: Income >$40,000	0.952	1.132	0.400	2.591
% Census Block: HMO Participant	-0.295	0.224	0.188	0.745
State Rx Enrollee	-0.658	0.217	0.002	0.518

Table 4.4 analyzes rates of nursing home entry over the first year of each program based on both crude rates and adjusted rates using a multivariate hazard model. The crude rates are slightly lower than the rates in Figures 4.3 and 4.4, which adjust for censoring. The hazard model showed that nursing home entry was significantly lower among former SeniorCare members compared to matched controls.

Table 4.4 Nursing home (NH) entry within the SeniorCare (SC) and comparison buy-in populations in first year

Item	IL All	IL Rollover	IL New	WI All
SC cases, N	7,546	6,293	1,253	1,794
NH entry among SC cases, N	147	129	18	38
NH entry among SC cases, %	1.9%	2.0%	1.4%	2.1%
Ohio Controls, N	7,546	6,293	1,253	1,777
NH entry among Ohio controls, N	320	290	30	79
NH entry among Ohio controls, %	4.2%	4.6%	2.4%	4.4%
Crude risk ratio (SC/OH)	0.46	0.44	0.60	0.48
Adjusted hazard ratio (SC/Ohio)*	0.57	0.55	0.72	0.52
Chi-sq-statistic	24.65	24.73	1.02	9.19
p-level	<.0001	<.0001	0.31	<.01

* From multivariate Cox regression hazard model.

The adjusted hazard rates of 0.57 for Illinois all and 0.52 for Wisconsin indicate that the rates of Medicaid funded nursing home entry are 43% and 48% lower in Illinois and Wisconsin, respectively, compared to matched buy-in beneficiaries in Ohio. Because nursing home entry is often a one-time event, we could not examine rates in these beneficiaries prior to SeniorCare. However, we did examine a potential confound for nursing home entry – the availability of nursing home beds in the three states in 2003 (Centers for Disease Control, 2005), the principal year in which we studied nursing home entry. Since most nursing home residents are aged, we used the population aged 65 and above (Administration on Aging, 2004) in each state as the major denominator, but also used the entire population as an additional validation (Population Division, US Census Bureau, 2007). Results were very similar. Illinois, Wisconsin, and Ohio all had higher rates of nursing home beds than the national average, with excesses of 45%, 22% and 43% based on the population over age 65, and 40%, 29% and 54% based on the entire population. Using Ohio as the reference, Illinois had 1% more and Wisconsin had 15% fewer beds per person aged 65+. Using the population of all ages, the corresponding differences were 9% and 16% fewer beds. These findings suggest that virtually none of the Illinois reduction, and at most one third of the Wisconsin reduction (i.e. 15% out of 48%) could be attributed to availability of nursing home beds in the study states compared to Ohio.

Extensions beyond the buy-in population

As discussed more fully in Appendix 1, the matching of comparison subjects to SeniorCare enrollees was done with only indirect information about beneficiaries' income, and no information about their assets. There is an asymmetry in the income information, because all SeniorCare enrollees were determined by state officials to have incomes at or below 200% FPL at enrollment. We have no guarantee that the Ohio comparison groups, although matched to enrollees on a number of markers for income, have incomes below 200% FPL, and we know nothing about assets for enrollees or comparisons. If, as is likely, the income distributions of the Ohio comparison groups were spread over a wider range, comparison subjects at the higher end of this income distribution would have strong protection against Medicaid entry, which depends on income and assets falling below specific thresholds.

An analysis of income suggests that this informational asymmetry caused our analysis to understate Medicaid entry of the Ohio comparison group by about one third. Thus, the unadjusted Medicaid rate of the comparison group needs an adjustment of about a third to be consistent with the participants, as explained in Appendix 1. After this adjustment, we find that participants in Illinois and Wisconsin have slightly lower rates of Medicaid entry than their matched comparison groups.

Analysis of the Medicaid costs for Illinois SeniorCare enrollees who entered Medicaid indicates that they had substantially lower average costs per covered month than their Ohio comparison group, whether we look at the first month enrollees (the rollovers from the state-only pharmacy program), later month enrollees, or beneficiaries who were also part of the Medicare Part B buy-in program (Appendix Table B-2). Average Medicaid costs per enrolled month are 71.3% lower than Medicaid costs for Ohio Medicaid entrants in the comparison group. Even though more Illinois enrollees entered Medicaid over the period than their counterparts in Ohio, they entered later (months per entrant over the observation period are fewer) and they had lower cost per month. The result is a lower total for Medicaid costs than experienced by matched beneficiaries in Ohio, by about 60%.

When we consider net cost to the Illinois Medicaid program for moving a beneficiary from SeniorCare to Medicaid, we must account for the reduction in SeniorCare costs due to this shift, which were $116 per enrollee month during the first year. This further increases our estimate of net saving, to 68%.

Analysis of Medicaid costs for Wisconsin SeniorCare enrollees presents a different picture (Appendix Table B-3). Again, Medicaid costs per enrolled month are lower for Wisconsin entrants in comparison to their Ohio comparison entrants, by about 28% for the entire group, and the SeniorCare enrollees entered slightly later than comparisons, with slightly fewer months per entrant. However, total Medicaid cost for the matched groups over the entire observation period (13 months) is 19% higher in Wisconsin than in Ohio. Even when we account for the drug program savings due to moving enrollees off SeniorCare, which averaged $86 per month in Wisconsin, we find that costs to Medicaid are still 10% higher for the Wisconsin enrollees than for the Ohio comparison group.

When the analysis was not limited to the buy-in populations, the Illinois program showed comparable rates of nursing home entry to Ohio controls, whereas the Wisconsin program evidenced higher rates than the Ohio controls. One explanation for this difference is the fact that Wisconsin program may have contained a higher share of seniors with particularly high

anticipated expenditures on prescription drugs. The Wisconsin program was relatively more attractive to such enrollees, as it contained no soft cap, and the deductible and enrollment may have reduced enrollment among those with low anticipated expenditures, and publicity and worksheet calculations would have highlighted the benefits to such enrollees. These high rates of anticipated drug use in Wisconsin may have also been associated with high rates of nursing home entry.

As low-income elders, buy-in participants are in general much more likely to become Medicaid eligible when they experience health needs, and have already applied for Medicaid assistance through the buy-in program itself. Thus it is not surprising that the rates of Medicaid entry for all the buy-in groups are higher than the rates for the full comparison groups. These enrollees are not more likely to be just learning about Medicaid eligibility as they enroll in a SeniorCare program, because their eligibility for Medicaid has already been fully assessed in the buy-in enrollment process.

As mentioned, existing administrative data are not adequate to evaluate Medicaid entry on enrollees who were above the buy-in threshold. Additional data, such as a survey in which respondents reported their current Medicaid status, their income, and ideally, their assets would be needed to compare Medicaid entry on other SeniorCare enrollees. If such data were available, we would expect that they would also show savings in nursing home entry and spending, but both the absolute and relative effects would be smaller. The smaller effects would arise because enrollees would be further from the Medicaid threshold, so they would need a larger illness or expenditure to make them eligible for Medicaid.

Conclusions: Reduced Medicaid costs in the buy-in population

Although the SeniorCare programs were associated with higher rates of Medicaid entry in Illinois compared to Ohio within the buy-in population, the excess can be explained by the woodwork effect as a byproduct of the publicity around SeniorCare. Buy-in SeniorCare enrollees in Wisconsin, where there was no previous subsidized prescription drug program, were 52% less likely to enter Medicaid than their matched Ohio counterparts.

When we examined Medicaid entry beyond the buy-in population, we found higher rates of entry into Medicaid observed for both Illinois and Wisconsin SeniorCare enrollees in comparison to Ohio comparison population. This result did not support the hypothesized offset to Medicaid entry. It could be due to a number of causes. Appendix 1 discusses income adjustments, while Appendix 2 discusses a number of threats to validity of the comparisons. The most important is the fact that while we know that the SeniorCare enrollees have incomes below 200% FPL and thus are close to Medicaid eligibility, we drew the Ohio comparison groups from the general population based on matches to proxies for income. The SeniorCare enrollment process may have led enrollees to learn that they were Medicaid-eligible. SeniorCare enrollment was designed to be simple, with few criteria; enrollees may have had a formal determination of Medicaid eligibility some months after SeniorCare enrollment. Further, enrollment in SeniorCare may in itself signal a willingness to seek public benefits, so that enrollees were more able to access Medicaid benefits if their health services needs increased. This woodwork effect, where elders who specifically enroll in a public program are more likely to become informed about benefits, and more likely to make use of other public programs, did not apply to the Ohio comparison groups, who were not public program enrollees. Because the SeniorCare enrollees who entered Medicaid had average monthly costs that were lower than the average monthly cost in Ohio, especially after accounting for the offset due to SeniorCare expenses, we conclude that

SeniorCare programs did not increase monthly Medicaid costs. Indeed for Wisconsin, where there was no prior state pharmacy assistance program, the study suggests that there may have been reductions in entry to Medicaid and Medicaid costs for the first year.

We observed lower rates of nursing home entry for both Illinois and Wisconsin buy-in enrollees in comparison to their Ohio matched counterparts – about half that of the comparison populations. The rates of nursing home entry of Illinois SeniorCare buy-in beneficiaries (2.4%) was 45% below the rate of the matched Ohio controls (4.4%). Medicaid spending over the first year (and standard error of the mean), averaged over all Illinois SeniorCare members in the buy-in, was \$631 $\pm$\$0.52 for former SeniorCare Illinois members and \$1,605 $\pm$\$2.01 for matched Ohio controls. Finally, Medicaid spending over the first year (and standard error), averaged over Medicaid entrants only, was \$1,930 $\pm$\$73 for former SeniorCare Illinois members and \$7,281 $\pm$\$343 for matched Ohio controls. These correspond to a reduction of \$5,350 $\pm$\$350, $p<.0001$ in spending per buy in and \$973 $\pm$\$2.08, $p<0.0001$ in spending per enrollee. In percentage terms, the reductions were 73% and 61%, respectively.

In Wisconsin, SeniorCare was associated with lower nursing home use and lower expenditures within the buy-in population. SeniorCare buy-in beneficiaries had half the rate of Medicaid entry in the first year (11%) than the matched Ohio controls (22%). The rates of nursing home entry of SeniorCare buy-in beneficiaries (2.2%) was 51% below the rate of the matched Ohio controls (4.5%). Finally, Medicaid spending over the first year (and standard error), averaged over Medicaid entrants only, was \$2,563 $\pm$\$314 for former SeniorCare Wisconsin members and \$6,716 $\pm$\$657 for matched Ohio controls. This corresponds to a reduction per enrollee of \$4,153 $\pm$\$728 and in spending per Medicaid entrant, $p<.0001$ and \$1,190 $\pm$\$163 in spending per buy in enrollee, $p<.0001$. In percentage terms, the reductions are 62% and 81%, respectively.

Strengths and limitations

It is important to understand the limitations of the present analysis of Medicaid. First, the analysis of Medicaid is limited to a subset of enrollees who may be some of the most vulnerable. To qualify for the buy-in subsidies, they had to demonstrate substantial financial need. While this study does not provide direct evidence about how the results might extend to the rest of the SeniorCare enrollees, it provides indirect evidence that the results would likely be in the same direction, but smaller. Our analysis of survey results, which were based on a cross section of all SeniorCare members in both states, showed broad improvements in skimping—a behavior that could lead to nursing home admission. On the other hand, the analyses that separated responses by risk tertile found that the highest risk group received the most benefit. Both financial and medical factors were part of the risk function.

Second, our sensitivity analyses that examined Medicaid entry for the entire SeniorCare population did find the hypothesized reduction compared to Ohio controls. While we showed that we were unable to match adequately by income, we could speculate that if SeniorCare had provided overwhelming protection against nursing home entry, we might have observed it despite comparison to a higher income comparison population.

Third, this analysis was limited to a single year of follow up (more specifically 10 to 13 months). The survival graphs for Medicaid and nursing home entry showed a pattern over the last 6 months of the observation period that pointed to continued gains over a longer period. Indeed, the projected savings on which SeniorCare was approved assumed that the gains would be cumulative, so that a member whose nursing home entry was averted in year 1 would save

several years of nursing home costs, thereby magnifying the observed effects. Thus, it is likely that SeniorCare would more than offset its costs in the buy-in population over time. Only further evaluation research can determine whether this is true

Fourth, our analysis assumes that Medicaid and nursing home entry in Ohio are comparable to similar events in Illinois and Wisconsin. Although all three states are in the same region of the country and have the same income threshold for Medicaid entry (100% of the Federal Poverty Limit), we cannot confirm that all detailed policies and procedures are equivalent. Even historical data, if available, could not confirm this, since Illinois had relaxed the income standard for Medicaid eligibility from about 70% to 100% of the Federal Poverty Limit in the year prior to beginning Senior Care.

Fifth, our data on program spending comes from claims payments and does not take into account pharmaceutical rebates. Both states were eligible for standard Medicaid rebates and the private pharmacy benefits manager in Illinois during the first year, Express Scripts, Inc., may have obtained additional rebates. These amounts were not reported to the evaluation, but would have reduced the cost of SeniorCare and made the offsets more favorable.

Despite these limitations, to our knowledge, this study is one of the first to examine the effect of prescription drug coverage on a broad range of Medicaid services. It builds on work of Soumerai and colleagues (1991) who found relations between prescription drugs and nursing home entry for Medicaid clients with a specific diagnosis and prescription pattern.

In summary, our analysis of Medicaid based on the buy-in population suggests that some benefits would likely extend to the remaining members of SeniorCare and would likely increase over time.

Task 5 Findings: Impact on Medicare Expenditures

To see if the enhanced access to prescription drugs provided by the two state SeniorCare programs had an impact on Medicare utilization and expenditures during the first year of operation, we found hospitalizations, total days of hospital use, and total Medicare spending for SeniorCare enrollees and their matched comparison subjects in Ohio for the observation period following their enrollment dates (or index date, for comparisons), and compared these to each other and to expenditures prior to enrollment date or index date. All quarterly observations represent full participation in the program. Quarters are indexed to entry into program. Therefore, models including all enrollees have fewer post-program observations than models with only first-month enrollees.

Descriptive analyses: Higher Medicare utilization for both Illinois and Wisconsin enrollees

As shown in Table 5.1, average Medicare expenditure for Illinois enrollees during the first program year (June 2002 through May 2003) was $6,928, while that for Ohio comparison beneficiaries was $5,848. Thus, Illinois expenditures were $1,080 or 18.5% higher. On average, Illinois enrollees used 0.59 more hospital days, 27.7% more than the Ohio enrollees. They were 3.9 percentage points more likely to experience a hospitalization, a 16.3% difference.

Table 5.1: Medicare Utilization, First Program Year[†]

Item	IL SeniorCare Enrollees	Matched OH Comparison Beneficiaries	Difference IL - OH	WI SeniorCare Enrollees	Matched OH Comparison Beneficiaries	Difference WI - OH
N	129,283	129,283		49,724	49,724	
Hospital Days	2.72	2.13	0.59	2.26	2.15	0.11
Any Hospitalization	27.8%	23.9%	3.9%	24.7%	22.5%	2.2%
Medicare Spending	$6,928	$5,848	$1,080	$6,148	$6,049	$99

[†]Twelve months after enrollment (or match date) for each beneficiary.

*Per beneficiary.

The direction of the differences are similar for Wisconsin, though the magnitude is smaller, with Wisconsin SeniorCare enrollees having $99 (1.6%) higher Medicare expenditures, 0.11 (5.2%) more hospital days, and 2.2 percentage points (9.8%) increased likelihood of expenditure, compared to the Ohio controls. The same pattern holds for first-month and later month enrollees in the Ohio (Ohio comparison sample.)

Rates of change of Medicare utilization and expenditures moderated

Although Ohio was selected as the source for the comparison subjects because of its proximity and similarities to Illinois and Wisconsin in terms of Medicaid and Medicare expenditures and use, there are likely many unmeasured differences in the Medicare utilization and expenditure patterns between Ohio Medicare beneficiaries and their counterparts in Illinois and Wisconsin. Measures of change can account for some of these unobservable baseline differences. We compared the utilization and expenditure measures for SeniorCare enrollees and their Ohio comparisons for one year before and after enrollment date (or assigned index date, for the comparisons); for the six-month period seven through twelve months prior to enrollment and the six-month period seven through twelve months after enrollment; and for quarter to quarter periods over the full observation period.[10]

Over the one year observation period, Illinois enrollees' average Medicare expenditures rose from $5,594 to $6,928, an increase of $1,334 per person; for their Ohio comparisons, the increase was $1,220 per person (Tables 5.2 through 5.4). The Illinois expenses increased by

[10] The numbers in these comparisons differ because the year comparison observes all utilization within the year regardless of length of observation; the six-months observations are only made for beneficiaries who were observable during these time frames.

$114 per person more than Ohio expenses. However, the rate of change for Illinois was 2.5% less than the rate of change for the matched Ohio group. Wisconsin SeniorCare enrollees experienced *smaller* absolute increases than their Ohio counterparts, showing an increase of $344 per person less, and their percentage increase was 9% lower than Ohio comparisons.

Table 5.2: Illinois and Wisconsin: Change in Medicare Expenditures, First Program Year versus Previous 12 Months: Part 1, All Enrollees

Item	12 Months Pre-index Expenditures (Average)	12 Months Post-index Expenditures (Average)	Absolute Difference	Percentage Difference
Illinois Enrollees and Ohio Matched Comparison Group (N = 129,283)				
IL Enrollees	$5,594	$6,928	$1,334	23.8%
OH Matched Beneficiaries	$4,628	$5,848	$1,220	26.4%
Difference (dollars or percentage points)	$966	$1,080	$114	-2.5%
Wisconsin Enrollees and Ohio Matched Comparison Group (N = 49,724)				
WI Enrollees	$5,186	$6,148	$962	18.5%
OH Matched Beneficiaries	$4,743	$6,049	$1,306	27.5%
Difference (dollars or percentage points)	$443	$99	-$344	-9.0%

Table 5.3: Illinois and Wisconsin: Change in Medicare Expenditures, First Program Year versus Previous 12 Months: Part 2: First Month Enrollees

Item	12 Months Pre-index Expenditures (Average)	12 Months Post-index Expenditures (Average)	Absolute Difference	Percentage Difference
Illinois First Month Enrollees and Ohio Matched Comparison Group (N =107,111)				
IL Enrollees	$5,609	$7,065	$1,456	26.0%
OH Matched Beneficiaries	$4,742	$5,936	$1,194	25.2%
Difference (dollars or percentage points)	$867	$1,129	$262	0.8%
Wisconsin First Month Enrollees and Ohio Matched Comparison Group (N = 33,343)				
WI Enrollees	$4,932	$6,060	$1,128	22.9%
OH Matched Beneficiaries	$4,765	$6,089	$1,324	27.8%
Difference (dollars or percentage points)	$167	-$29	-$196	-4.9%

Table 5.4: Illinois and Wisconsin: Change in Medicare Expenditures, First Program Year versus Previous 12 Months: Part 3: Later Month Enrollees

Item	12 Months Pre-index Expenditures (Average)	12 Months Post-index Expenditures (Average)	Absolute Difference	Percentage Difference
Illinois Later Month Enrollees and Ohio Matched Comparison Group (N = 22,172)				
IL Enrollees	$5,521	$6,113	$592	10.7%
OH Matched Beneficiaries	$4,078	$5,328	$1,250	30.7%
Difference (dollars or percentage points)	$1,443	$785	-$658	-19.9%
Wisconsin Later Month Enrollees and Ohio Matched Comparison Group (N = 16,381)				
WI Enrollees	$5,701	$6,326	$625	11.0%
OH Matched Beneficiaries	$4,698	$5,968	$1,270	27.0%
Difference (dollars or percentage points)	$1,003	$358	-$645	-16.1%

The same contrast can be seen for a measure of utilization that does not depend on local variation in Medicare payment rates, namely the number of hospital days used (Tables 5.5 through 5.7). Illinois enrollees began with a higher rate of hospital days per enrollee than their Ohio comparisons (1.96 versus 1.51), and increased this by a larger absolute amount between the two observation years (0.82 versus 0.66). The percentage increase is lower for Illinois enrollees, however. Wisconsin enrollees experienced lower absolute and percentage increases in the number of hospital days per beneficiary than their Ohio comparisons.

Table 5.5: Change in Medicare Utilization: Hospital Days, First Program Year versus Previous 12 Months, Part 1: All Enrollees

Item	12 Months Pre-index Rate (Average)	12 Months Post-index Rate (Average)	Absolute Difference	Percentage Difference
Illinois Enrollees and Ohio Matched Comparison Group,(N = 129,283)				
IL Enrollees	0.219	0.278	0.059	26.9%
OH Matched Beneficiaries	0.176	0.239	0.063	35.8%
Difference (percentage points)	0.043	0.039	-0.004	-8.9%
Wisconsin Enrollees and Ohio Matched Comparison Group (N = 49,724)				
WI Enrollees	0.221	0.247	0.026	11.8%
OH Matched Beneficiaries	0.184	0.225	0.041	22.3%
Difference (rate or percentage points)	0.037	0.022	-0.015	-10.5%

Table 5.6: Change in Medicare Utilization: Hospital Days, First Program Year versus Previous 12 Months, Part 2: First Month Enrollees

Item	12 Months Pre-index Days (Average)	12 Months Post-index Days (Average)	Absolute Difference	Percentage Difference
Illinois First Month Enrollees and Ohio Matched Comparison Group (N =107,111)				
IL Enrollees	1.96	2.78	0.82	41.8%
OH Matched Beneficiaries	1.51	2.17	0.66	43.7%
Difference (days or percentage points)	0.45	0.61	0.16	-1.9%
Wisconsin First Month Enrollees and Ohio Matched Comparison Group (N = 33,343)				
WI Enrollees	1.67	2.22	0.55	32.9%
OH Matched Beneficiaries	1.46	2.15	0.69	47.3%
Difference (days or percentage points)	0.21	0.07	-0.14	-14.3%

Table 5.7: Change in Medicare Utilization: Hospital Days, First Program Year versus Previous 12 Months, Part 3: Later Month Enrollees

Item	12 Months Pre-index Days (Average)	12 Months Post-index Days (Average)	Absolute Difference	Percentage Difference
Illinois Later Month Enrollees and Ohio Matched Comparison Group (N = 22,172)				
IL Enrollees	1.96	2.36	0.40	20.4%
OH Matched Beneficiaries	1.28	1.89	0.61	47.7%
Difference (days or percentage points)	0.68	0.47	-0.21	-27.2%
Wisconsin Later Month Enrollees and Ohio Matched Comparison Group (N = 16,381)				
WI Enrollees	1.98	2.33	0.35	17.7%
OH Matched Beneficiaries	1.46	2.13	0.67	45.9%
Difference (days)	0.52	0.20	-0.32	-28.2%

The proportion of beneficiaries experiencing any hospitalization (Tables 5.8 through 5.10) rose by a smaller amount in both Illinois and Wisconsin than for their respective comparison groups. This suggests that SeniorCare may have moderated the rate at which enrollees experienced health events that lead to hospitalization, but that days of care once hospitalized were not moderated in Illinois.

Table 5.8: Change in Medicare Utilization: Any Hospitalization, First Program Year versus Previous 12 Months, Part 1: Total Study Population

Item	12 Months Pre-index Rate (Average)	12 Months Post-index Rate (Average)	Absolute Difference	Percentage Difference
Illinois Enrollees and Ohio Matched Comparison Group,(N = 129,283)				
IL Enrollees	0.219	0.278	0.059	26.9%
OH Matched Beneficiaries	0.176	0.239	0.063	35.8%
Difference (percentage points)	0.043	0.039	-0.004	-8.9%
Wisconsin Enrollees and Ohio Matched Comparison Group (N = 49,724)				
WI Enrollees	0.221	0.247	0.026	11.8%
OH Matched Beneficiaries	0.184	0.225	0.041	22.3%
Difference (rate or percentage points)	0.037	0.022	-0.015	-10.5%

Table 5.9: Change in Medicare Utilization: Any Hospitalization, First Program Year versus Previous 12 Months, Part 2: First Month Enrollees

Item	12 Months Pre-index Days (Average)	12 Months Post-index Days (Average)	Absolute Difference	Percentage Difference
Illinois First Month Enrollees and Ohio Matched Comparison Group (N =107,111)				
IL Enrollees	0.221	0.261	.040	18.1%
OH Matched Beneficiaries	0.181	0.218	0.037	20.4%
Difference (rate or percentage points)	0.040	0.043	0.003	-2.3%
Wisconsin First Month Enrollees and Ohio Matched Comparison Group (N = 33,343)				
WI Enrollees	0.214	0.244	0.030	14.0%
OH Matched Beneficiaries	0.186	0.224	0.038	20.4%
Difference (rate or percentage points)	0.028	0.020	-0.008	-6.4%

Table 5.10: Change in Medicare Utilization, Utilization: Any Hospitalization, First Program Year versus Previous 12 Months, Part 3: Later Month Enrollees

Item	12 Months Pre-index Days (Average)	12 Months Post-index Days (Average)	Absolute Difference	Percentage Difference
Illinois Later Month Enrollees and Ohio Matched Comparison Group (N = 22,172)				
IL Enrollees	0.208	0.224	0.016	7.7%
OH Matched Beneficiaries	0.152	0.195	0.043	28.3%
Difference (rate or percentage points)	0.056	0.029	-0.027	-20.6%
Wisconsin Later Month Enrollees and Ohio Matched Comparison Group (N = 16,381)				
WI Enrollees	0.234	0.253	0.019	8.1%
OH Matched Beneficiaries	0.180	0.226	0.046	25.6%
Difference (rate or percentage points)	0.054	0.027	-0.027	-17.4%

As noted above, most of the Illinois enrollees were "rolled over" from another Illinois program providing access to prescription drugs for specific conditions. The rollovers had a high prevalence of chronic illness, as would be expected for members of such a program. In addition, even though SeniorCare covered a wider range of medicines, enrollment in SeniorCare did not expand the rollovers' access to most prescription drugs that they personally had needed since enrollment in the state-only program. It is not surprising that these high users did not experience much further moderation in their rate of use after joining SeniorCare.

If we omit the rollovers and restrict analysis to effects for Illinois SeniorCare enrollees who joined after the first month, we find lower absolute and percentage increases in all three Medicare utilization measures (see Tables 5.4, 5.7, and 5.10). Expenditures are lower by $658 for Illinois enrollees than Ohio comparisons, with a year to year increase that is 19.9 percentage points lower (Table 5.4). Hospital days per beneficiary increased by 0.21 less for Illinois enrollees than for Ohio comparison beneficiaries, representing a difference in the year-to-year increase of 27.2 percentage points (Table 5.7). The rate at which Illinois enrollees were hospitalized during the year increased by 0.03 less than for Ohio beneficiaries, representing a difference in the year-to-year rate of increase that was about 20.6 percentage points less (Table 5.10).

Further indication that SeniorCare moderated the rate of increase of Medicare utilization in Wisconsin is shown by a comparison of Medicare expenditures for enrollees and their comparisons encompassing only beneficiaries who were observable throughout a full twelve-month period after enrollment or index date, and omitting expenditures in months around the enrollment date (Tables 5.11 through 5.13). Beneficiaries may seek to join SeniorCare due to a health event, suggesting that their Medicare utilization just prior to enrollment may be exceptionally high. In addition, it may take more than a month or two for improved access to prescription drugs to affect health status.

To be conservative, we examined these changes a second time, omitting expenditures in the six-month period just prior to enrollment and in the six-month period just after enrollment. In other words, we compared Medicare expenditures in the seven to twelve months prior to enrollment to expenditures in the seven to twelve months after enrollment. Using this rigorous approach, the Illinois SeniorCare program still shows an increase in Medicare expenditures, for the total population and for both rollovers and later-month enrollees; the increase for the later-month enrollees is smaller in absolute terms, and indicates growth in expenditures for this group that is smaller than the growth for the Ohio comparison group, but the absolute increase remains positive, about $125 for the six month period.

In contrast, the rigorous comparison showed Wisconsin enrollees with lower absolute increase in expenditures per enrollee than their Ohio comparisons (by $113). The percentage increase of the later six-month period over the earlier one was 6.8 percentage points less in Wisconsin than for Ohio comparisons. Both first month and later month enrollees in Wisconsin showed lower absolute and percentage changes. These descriptive statistics suggest that SeniorCare brought about modest Medicare savings in Wisconsin.

Table 5.11: Medicare Expenditures 7 to 12 Months Prior to Enrollment versus 7 to 12 Months Post Enrollment, Part 1: Total Study Population

Item	7-12 Months Pre-index Expenditures (Average)	7-12 Months Post-index Expenditures (Average)	Absolute Difference	Percentage Difference
Illinois Enrollees and Ohio Matched Comparison Group with Complete Data (N = 112,047)				
IL Enrollees	$2,486	$3,328	$842	33.8%
OH Matched Beneficiaries	$2,240	$2,833	$594	26.5%
Difference (dollars or percentage points)	$247	$494	$248	7.3%
Wisconsin Enrollees and Ohio Matched Comparison Group with Complete Data (N = 42,612)				
WI Enrollees	$2,284	$2,992	$708	31.0%
OH Matched Beneficiaries	$2,173	$2,994	$821	37.8%
Difference (dollars or percentage points)	$111	-$2	-$113	-6.8%
Difference (dollars or percentage points)	$239	$109	-$130	-9.4%

Table 5.12: Medicare Expenditures 7 to 12 Months Prior to Enrollment versus 7 to 12 Months Post Enrollment, Part 2: First Month Enrollees

Item	7-12 Months Pre-index Expenditures (Average)	7-12 Months Post-index Expenditures (Average)	Absolute Difference	Percentage Difference
Illinois First Month Enrollees and Ohio Matched Comparison Group with Complete Data (N = 93,651)				
IL Enrollees	$2,576	$3,386	$810	31.4%
OH Matched Beneficiaries	$2,340	$2,878	$538	23.0%
Difference (dollars or percentage points)	$236	$508	$272	8.4%
Wisconsin First Month Enrollees and Ohio Matched Comparison Group with Complete Data (N = 28,849)				
WI Enrollees	$2,243	$2,957	$714	31.8%
OH Matched Beneficiaries	$2,192	$3,011	$819	37.4%
Difference (dollars or percentage points)	$51	-$54	-$105	-5.5%

Table 5.13: Medicare Expenditures 7 to 12 Months Prior to Enrollment versus 7 to 12 Months Post Enrollment, Part 3: Later Month Enrollees

Item	7-12 Months Pre-index Expenditures (Average)	7-12 Months Post-index Expenditures (Average)	Absolute Difference	Percentage Difference
Illinois Later Month Enrollees and Ohio Matched Comparison Group with Complete Data (N = 18,396)				
IL Enrollees	$2,031	$3,034	$1,003	49.4%
OH Matched Beneficiaries	$1,731	$2,609	$878	50.7%
Difference (dollars or percentage points)	$300	$425	$125	-1.3%
Wisconsin Later Month Enrollees and Ohio Matched Comparison Group with Complete Data (N = 13,763)				
WI Enrollees	$2,372	$3,067	$695	29.3%
OH Matched Beneficiaries	$2,133	$2,958	$825	38.7%
Difference (dollars or percentage points)	$239	$109	-$130	-9.4%

Medicare expenditures under SeniorCare: Higher in Illinois, lower in Wisconsin

To better account for enrollee characteristics, we estimated a regression equation for Medicare expenditures seven to twelve months after enrollment or index date as the dependent variable. In addition to explanatory variables capturing sex, age, income, and chronic disease (based on 2001 Medicare claims) we included Medicare expenditures seven to twelve months prior to index date as an independent variable. Table 5.14 shows that enrollment in the Illinois program was associated with Medicare expenditures that were about $415 greater. However, in Table 5.15 we see that enrollment in the Wisconsin program was associated with a reduction in Medicare expenditures for the six month period of about $70.

Table 5.14: Regression Adjusted Program Impact on Medicare Expenditures: Illinois

COHORT: ILOH

Dependent Variable: pstmr6to12 (Total Medicare Expenditures 6to12 mm Post-index)

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	20	763,160,800,000	38,158,039,916	528.42	<.0001
Error	170,141	12,286,120,000,000	72,211,380		
Corrected Total	170,161	13,049,280,000,000			

Root MSE	8497.73	**R-Square**	0.0585
Dependent Mean	3483.95	**Ad R-Sq**	0.0584
Coeff Var	243.91		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	529.119	463.958	1.14	0.2541
Total MCR Exp 6-12mm Pre-index (in 100s)	1	6.710	0.289	23.22	<.0001
Home Health Utilization 0-3mm of Index	1	2102.987	105.601	19.91	<.0001
Inpatient Utilization 0-3mm of Index	1	2148.735	74.388	28.89	<.0001
2001 JAI Morbidity Score	1	377.263	13.920	27.10	<.0001
2001 Diabetes	1	143.952	46.227	3.11	0.0018
2001 CHD	1	355.203	48.767	7.28	<.0001
2001 CVD	1	1486.346	64.805	22.94	<.0001
2001 COPD	1	743.656	53.947	13.78	<.0001
2001 Arthritis	1	-0.021	67.153	0.00	0.9997
2001 CHF	1	846.313	48.719	17.37	<.0001
% Census Block: Income $0-$10,000	1	-218.279	369.290	-0.59	0.5545
% Census Block: Income $10,000-$20,000	1	-862.170	358.939	-2.40	0.0163
% Census Block: Income $20,000-$30,000	1	-825.727	367.425	-2.25	0.0246
% Census Block: Income $30,000-$40,000	1	-512.329	386.305	-1.33	0.1848
% Census Block: Income >$40,000	1	-449.048	352.603	-1.27	0.2028
% Census Block: HMO Participant	1	15.657	35.661	0.44	0.6606
SSA Dependent Count	1	525.050	300.615	1.75	0.0807
Family SSA Payment (in 1000s)	1	113.097	21.834	5.18	<.0001
Dependent Count*Family SSA Payment	1	-65.720	19.317	-3.40	0.0007
State Rx Enrollee (Case)	1	414.638	41.504	9.99	<.0001

Table 5.15: Regression Adjusted Program Impact on Medicare Expenditures: Wisconsin

COHORT: WIOH

Dependent Variable: pstmr6to12 (Total Medicare Expenditures 6to12 mm Post-index)

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	20	209,580,800,000	10,479,042,075	179.76	<.0001
Error	73,373	4,277,314,000,000	58,295,475		
Corrected Total	73,393	4,486,895,000,000			

Root MSE	7635.15	**R-Square**	0.0467
Dependent Mean	3111.50	**Adj R-Sq**	0.0464
Coeff Var	245.38		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	1150.88	481.79	2.39	0.0169
Total MCR Exp 6-12mm Pre-index (in 100s)	1	6.51	0.42	15.57	<.0001
Home Health Utilization 0-3mm of Index	1	1824.30	168.17	10.85	<.0001
Inpatient Utilization 0-3mm of Index	1	1925.15	105.41	18.26	<.0001
2001 JAI Morbidity Score	1	308.83	18.60	16.60	<.0001
2001 Diabetes	1	301.90	65.76	4.59	<.0001
2001 CHD	1	328.72	67.28	4.89	<.0001
2001 CVD	1	1331.03	95.68	13.91	<.0001
2001 COPD	1	760.83	76.81	9.90	<.0001
2001 Arthritis	1	181.76	98.56	1.84	0.0652
2001 CHF	1	826.44	69.76	11.85	<.0001
% Census Block: Income $0-$10,000	1	95.62	396.01	0.24	0.8092
% Census Block: Income $10,000-$20,000	1	-367.35	365.28	-1.01	0.3146
% Census Block: Income $20,000-$30,000	1	-655.97	386.37	-1.70	0.0896
% Census Block: Income $30,000-$40,000	1	-744.86	422.17	-1.76	0.0777
% Census Block: Income >$40,000	1	-308.67	357.82	-0.86	0.3883
% Census Block: HMO Participant	1	96.48	54.77	1.76	0.0781
SSA Dependent Count	1	144.98	324.27	0.45	0.6548
Family SSA Payment (in 1000s)	1	58.53	26.42	2.22	0.0267
Dependent Count*Family SSA Payment	1	-27.64	22.19	-1.25	0.2130
State Rx Enrollee (Case)	1	-70.48	56.84	-1.24	0.2150

Similar models fitted for subgroups reinforced these findings. There do not seem to be Medicare savings associated with enrollment in the Illinois SeniorCare program, at least for the first year of enrollment. However, the Wisconsin SeniorCare program did appear to save a very modest amount of expenditures for Medicare, with higher savings found for those with inpatient or home health utilization within three months of the index date (results significant at p<.001). The results also suggest that Medicare savings were greater for enrolled beneficiaries with chronic heart failure, chronic obstructive pulmonary disease, recent nursing home residents, and state

buy-ins for Part B (details available on request). The scale of these early-program savings are small in relation to program costs.

Quarter-to-quarter changes: Nothing significant in Illinois but savings in Wisconsin

Another way to examine Medicare expenditures is to consider quarter to quarter changes for individuals. Figures 5.1 through 5.6 display quarterly data for the three Medicare utilization outcome variables: hospital days, proportion hospitalized and total expenditures. The data are shown by time relative to each SeniorCare beneficiary's enrollment date, with his/her comparison beneficiary observed for the same dates. Using Medicare claims data for CY 2001-2003, as many as five quarters after the quarter of enrollment are observable for early Illinois enrollees, but only three for Wisconsin enrollees.

A difference analysis uses differences between quarterly expenditures for individual beneficiaries as the dependent variable, with multiple observations for each beneficiary. Observed and unobserved characteristics that do not change over time for individuals are implicitly accounted for in the analysis. We included indicators for calendar quarter, quarter since program enrollment, and the square of age in the analysis, all "differenced." For Illinois enrollees and comparisons, the estimated impact of enrollment was negative, suggesting savings in Medicare expenditures and utilization, but this was not significantly different from zero.

In contrast, the same analysis of quarterly differences for Wisconsin enrollees and comparison subjects showed a significant negative effect on Medicare expenditures of enrollment in SeniorCare: an average of $272.94 savings per beneficiary enrolled over the observation period (16 months). This amount, averaging $17 a month, is modest in comparison to the cost of the Wisconsin SeniorCare program (estimated at $86 per month). However, any statistically significant Medicare savings represent a decline in Medicare utilization for the population, suggesting a reduction in need for services and improvement in health status. The value of this difference for enrollees should also be taken into account.

Figure 5.1: Illinois-Ohio Medicare spending by quarter by cohort

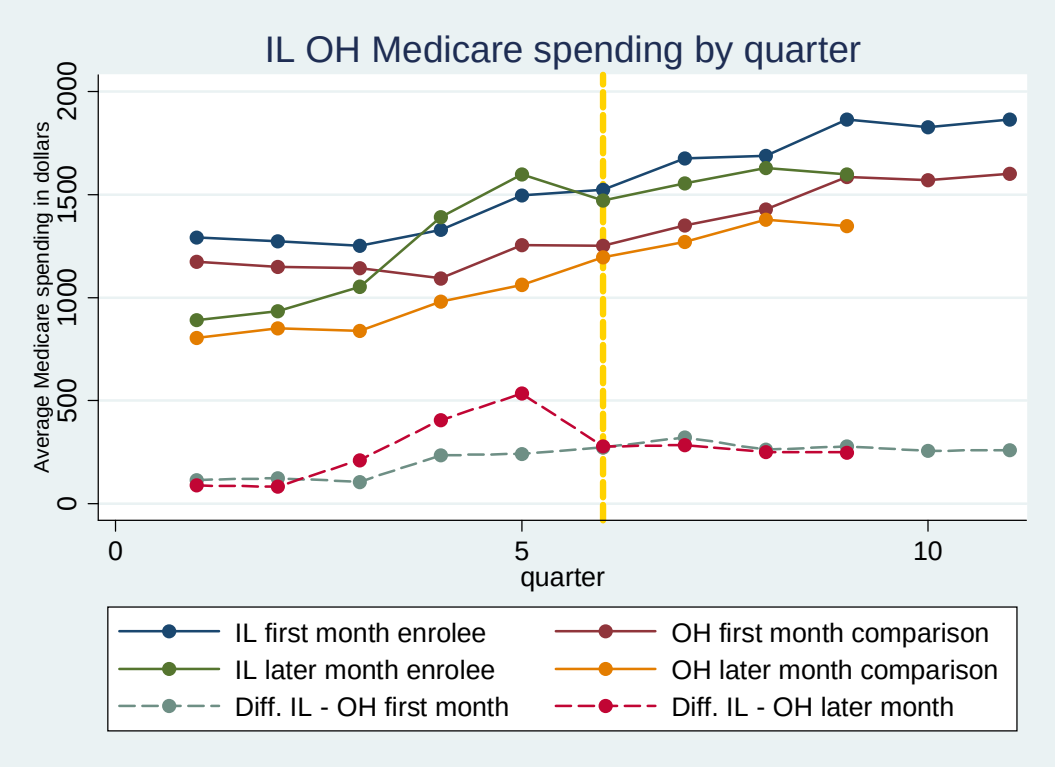


Figure 5.2: Wisconsin-Ohio Medicare spending by quarter by cohort

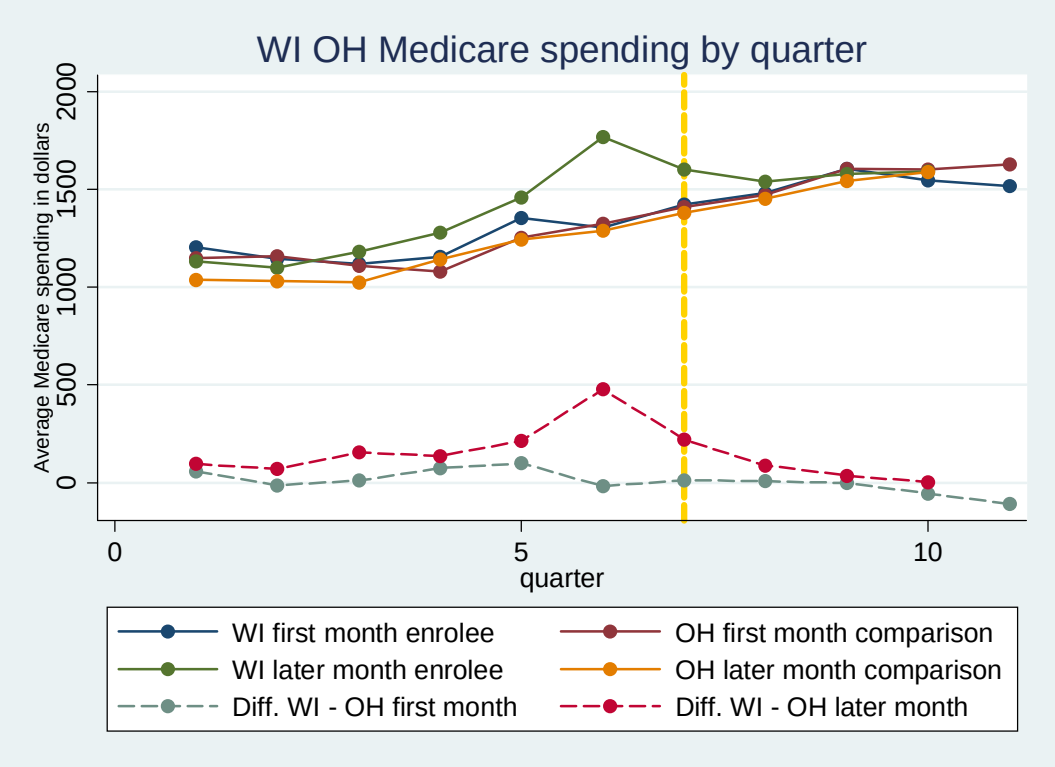


Figure 5.3: Illinois-Ohio Medicare inpatient days by quarter by cohort

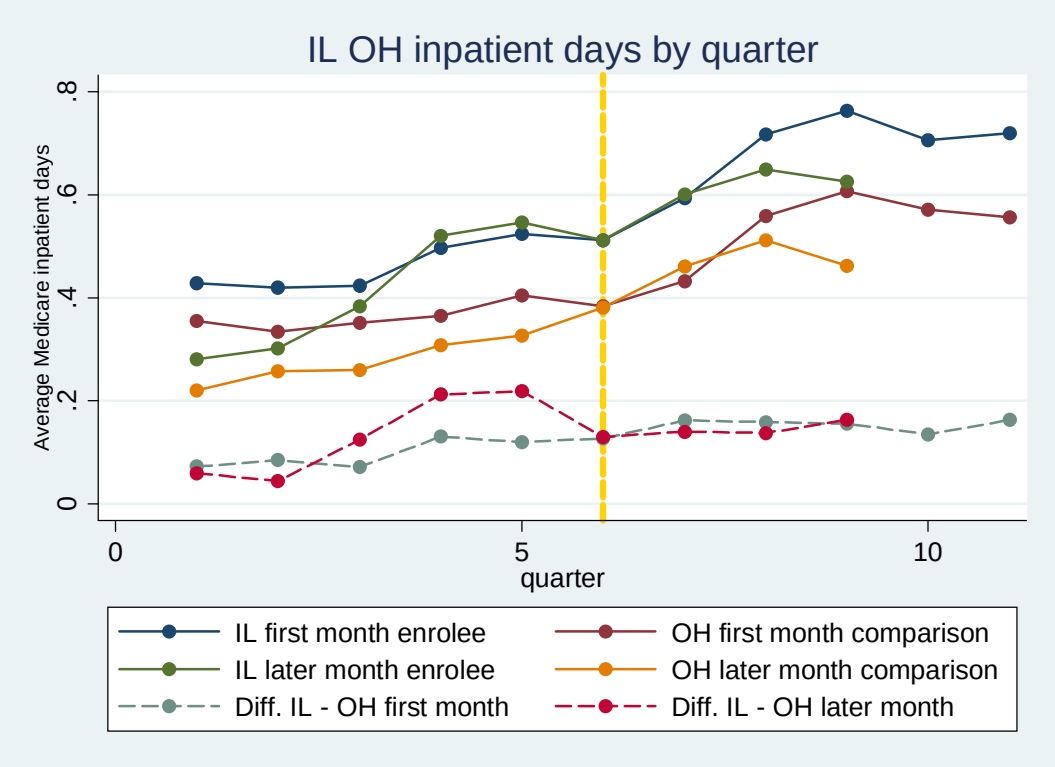


Figure 5.4: Wisconsin-Ohio Medicare inpatient days by quarter by cohort

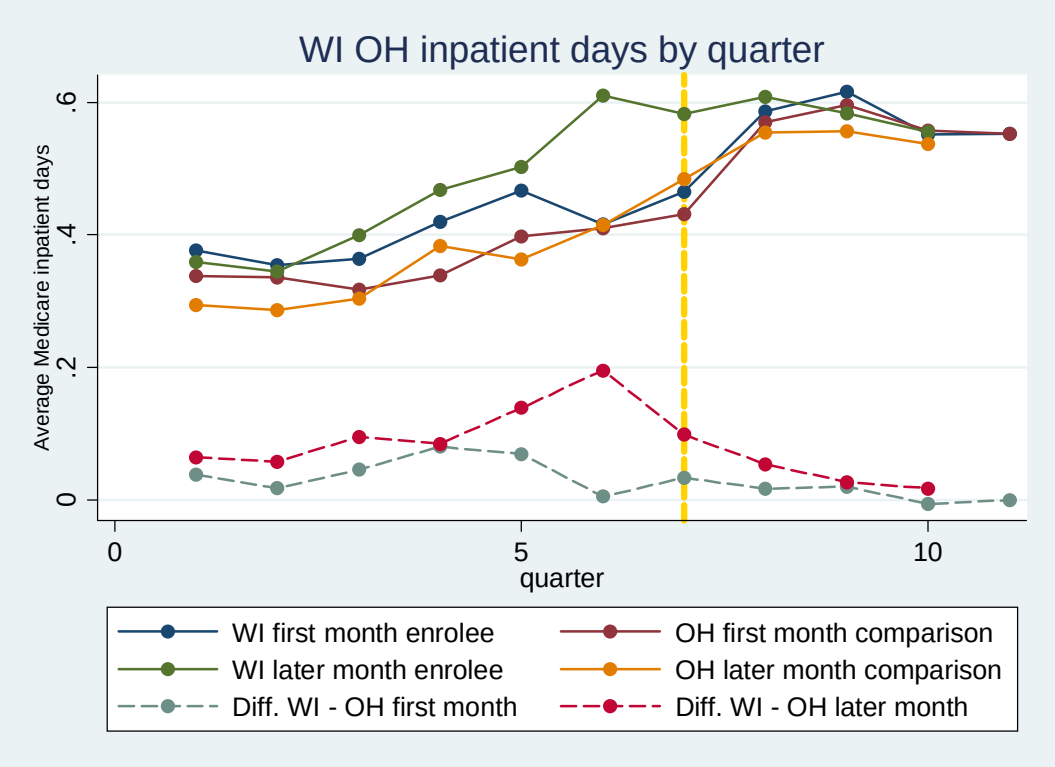


Figure 5.5: Illinois-Ohio Medicare % any inpatient utilization by quarter by cohort

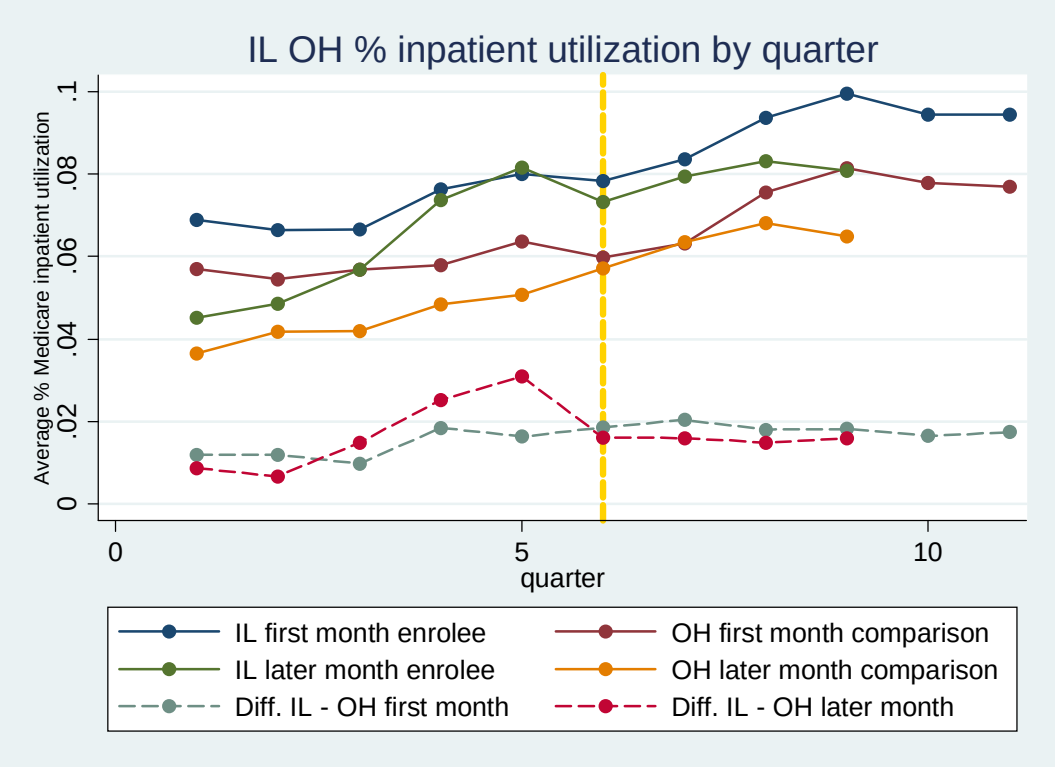
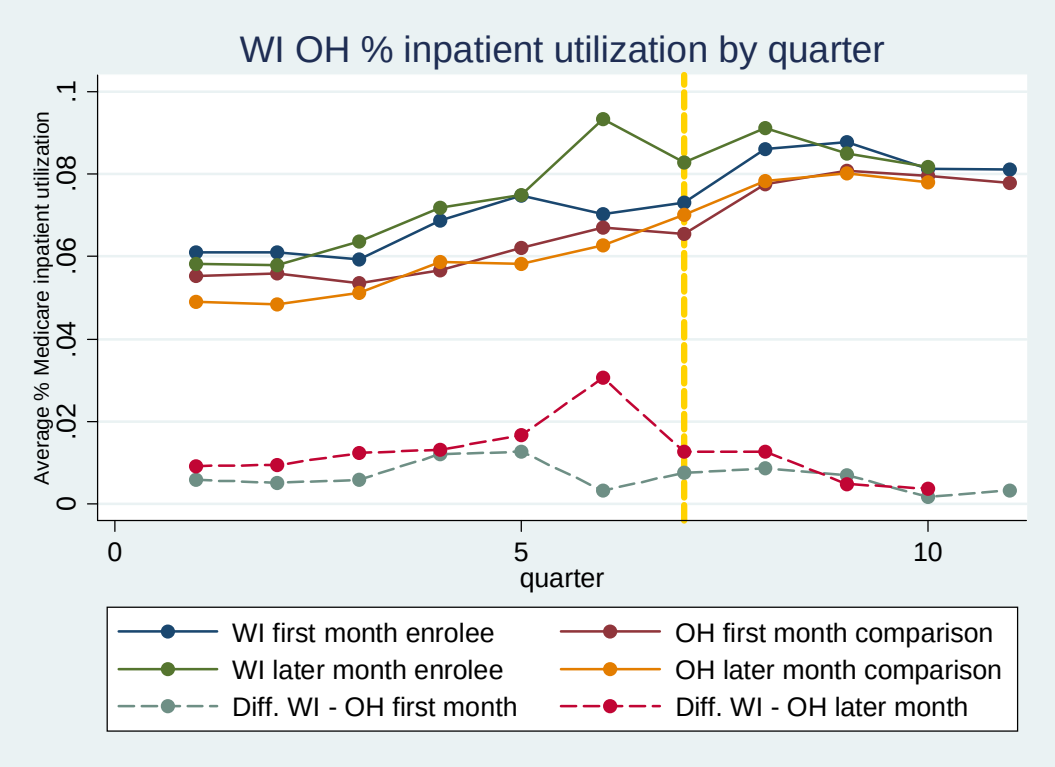


Figure 5.6: Wisconsin-Ohio Medicare % any inpatient utilization by quarter by cohort



Conclusions on Medicare savings: None evident for Illinois, positive but very modest for Wisconsin

In its first year, almost 90% of the Medicare beneficiaries served by the Illinois SeniorCare program were rolled over from a previous state-only pharmacy program. These beneficiaries had more chronic illness and higher Medicare expenditures than beneficiaries who joined later, and were unlikely to have experienced a substantial increase in their access to prescription drugs. Thus it is not surprising that the analysis has not found savings for Medicare among this population. There is some indication that growth in hospital utilization and days per beneficiary was moderated by the program.

The Wisconsin SeniorCare program served beneficiaries who had not had a previous source of prescription drug coverage. Even in its first year, access to prescription drugs resulted in a modest saving in Medicare expenditures for this population. It is important to recognize that the range of estimates uncovered by our analyses are truly modest – the annual savings are far less than the average cost per beneficiary of the Wisconsin SeniorCare program itself – but they represent increased wellbeing for near-poor seniors and hold promise for future savings over a time period when prescription drugs can be expected to affect health status.

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APPENDICES

Appendix 1: Effects of Income on Medicaid Entry

Adjustment for Inability to Observe Income of Comparison Beneficiaries

An analysis of how income is related to Medicaid entry for enrollees, for whom income is known, sheds some light on how important this may be to our findings.

Appendix Figure A-1 graphs Medicaid entry over a 12-month period as a function of family income by state and family status on the SeniorCare application (single or married). Family income is tabulated by quintile, with separate quintiles for each of the four populations. The overwhelming majority of SeniorCare enrollees are unmarried (76% in Illinois and 70% in Wisconsin). The results show that Medicaid entry is extremely sensitive to family income with a pattern that approximates an exponential decay curve, with a substantial reduction in the chance of Medicaid entry with each higher quintile in the distribution.

Given that family income is important, it is useful to see how well we can predict it from one of the observed variables – characteristics of the residence location. Appendix Figure A-2 plots the percentage of families in the lowest quintile of family income (the one that had the highest risk of Medicaid entry) as a function of the type of neighborhood in which the residence location falls. The neighborhoods are placed into six categories based on the percentage of households headed by seniors whose income is below $10,000 per year. This share ranges from 24% to 4% from the poorest to the richest quintiles of neighborhoods in Illinois, and from 22% to 4% from the poorest to the richest quintiles of neighborhoods in Wisconsin. If the address did not link to a neighborhood in which seniors lived (e.g. a Post Office box, a rural free delivery address, or an address the mapping software could not recognize), then the income information was classified as missing. The pattern showed that trend was generally in the expected direction – poorer neighborhoods (on the left) tended to have higher percentages of seniors in the lowest category of family income. The trend is relatively mild, however, and there were exceptions.

Appendix Figure A-3 shows the strength of these two indicators of income. We have measured strength as the ratio of the indicator for the poorest to the richest quintile. The left most solid bar (7.7), based on the data in Appendix Figure A-2, means that a low-income unmarried Illinois resident is 7.7 as likely to enter Medicaid as a richer income unmarried Illinois resident. The hatched bars, based on the data in Appendix Figure A-2, confirm that neighborhood income is only a week predictor of individual income. The highest odds ratio is only 1.7. The imperfections in estimating income would not matter if we had equal sources for participants and comparison beneficiaries. The imperfections require adjustment in this study, however, because we have differential information between the two groups. As stated earlier, we know the actual family income for participants, but do not for comparison subjects and must assume they fall at the mean of the category in which we place them.

Appendix Figures A-4 and A-5 show the distribution of neighborhood income across the two populations of enrollees and their matched comparison groups from Ohio.[11] On the one hand, this graph shows that the propensity score approach worked very well. The Ohio comparison groups match their corresponding participants extremely well. The width of each income band is within 1 or 2 percentage points. But the median value for the Illinois neighborhood is $26,100, compared to $14,200 for the actual enrollees. Similarly, the median value for the Wisconsin neighborhood is $25,300 compared to $14,100 for the actual enrollees. We can infer that the actual enrollees, who by eligibility have incomes lower than 200% FPL, tend to have lower incomes than the median income of the neighborhood in which they live. The median values for the two groups of Ohio comparison subjects are $25,300 (matched to Illinois) and $26,400 (matched to Wisconsin). Our propensity modeling has likely chosen as a comparison subject in Ohio a person of average income for his or her neighborhood. While it matches the corresponding neighborhood in the SeniorCare state, it is quite different from the income of the actual SeniorCare enrollee. The use of Social Security income and other demographic variables (age, sex, and race) in combination with neighborhood income distribution likely improves the match, but is far from perfect.

To indicate the magnitude of the adjustment factor that may be required to correct for the difference in income between enrollees and comparison beneficiaries, we developed a set of functions for Medicaid entry in which we hypothesized:

One-year risk of Medicaid entry = Constant x (Income – Threshold) ^ (Elasticity)

This specification has constant elasticity. The threshold is set at an amount slightly below the FPL, as a person with income at this low level is likely to quickly deplete any remaining assets and enter Medicaid within the year. For this illustration, we assumed the threshold was $8,000, slightly below the Medicaid cutoff of 100% of the FPL for all three states of about $10,000. By using the actual rates of Medicaid entry at the all quintiles except the middle one in Figure A-1, we calculated the constant terms and elasticities, obtaining the models shown in Appendix Figure A-5. If we take a weighted average of the elasticities for married and unmarried beneficiaries, we obtain an income elasticity of -1.2 for Illinois and -1.0 for Wisconsin. Using these with the median levels of income in Ohio gives factors of about 1/3 as the adjustment for differential income.

Appendix Figure A-7 shows the ability of Social Security benefits to predict income. Within the limited range of SeniorCare, the predictive power of this limited information appears limited. The median value varies relatively little over the range of possible social security benefits, and the cumulative impact does not show consistent trends. In earlier study of using social security payments to model which Medicare residents enrolled in SeniorCare, we found an inverted u-pattern. Thus Social Security benefits are not a sufficiently strong predictor of income to affect the findings substantially.

As discussed above, the propensity score match relied on characteristics of the residence location, Social Security payment amounts, and Social Security dependent status to account for income. It is also well known that family income is associated with age, sex, and race, other

[11] In all distributions, enrollees for whom the neighborhood distribution was missing were excluded and the non-missing observations were re-normalized to sum to 100%. In the actual propensity modeling, enrollees with missing income data in Wisconsin or Illinois were matched to ones with missing income data from OH.

variables used in matching. But the actual incomes for the Ohio comparison group are unknown, and since the comparison subjects were drawn from the general beneficiary population, their incomes are likely to be farther away from the Medicaid eligibility than the SeniorCare enrollees, who are known to have incomes below 200% FPL.

While this appendix has endeavored to highlight the need for income adjustment and roughly quantify its impact, there are a number of potential refinements. Our analysis of Medicaid entry by income within the participants used quintile categories. A continuous model, such as multiple logistic regression, with other covariates, such as many of the variables in the propensity scores and other regressions including neighborhood characteristics and Social Security benefits. Furthermore, instead of assuming a specific cutoff value, an optimization procedure could be used to find the ideal value.

Supplemental analyses of Medicaid entry for the entire SeniorCare population

We performed supplemental analyses of Medicaid entry for the entire SeniorCare population. We observe increased Medicaid entry for almost every group of SeniorCare enrollees in comparison to Ohio comparison subjects—the opposite of results for the buy-in population, as shown in Appendix Figure A-8 (Illinois) and A-9 (Wisconsin). Why did this occur? It is not likely that SeniorCare actually made people ill or sent them into nursing home or home care.

Appendix Tables B-1, B-2, and B-3 in Appendix 6 show nursing home entry and Medicaid expenditures among the entire SeniorCare population and comparison subjects matched based on available data. The lower-than-average costs of both Illinois and Wisconsin SeniorCare enrollees who entered Medicaid suggest indeed that these beneficiaries have not had catastrophic health events and have not acquired disabilities at a greater rate than their Ohio comparisons. As the Medicare analysis reveals, SeniorCare enrollees in Wisconsin saw their Medicare expenditures moderating on average – they were not facing increasing health problems. The regression-adjusted odds of nursing home entry show that Illinois SeniorCare enrollees had about the same rate of entry into nursing home care as Ohio comparisons.

The findings for Medicare buy-in population in Wisconsin, for whom we can be sure that income is equivalently low in the SeniorCare and matched populations, leads us to suspect that the sensitivity of Medicaid entry to income may be responsible for the findings from the matched comparisons. If the propensity score and exact matching process matched known low-income beneficiaries to beneficiaries in Ohio who were of average income, it is unlikely that the comparison group would enter Medicaid as rapidly as the SeniorCare group. However, it should be noted that Medicaid entry is still not prevented for Illinois enrollees in the same low-income bracket in comparison to Ohio matched subjects.

Appendix 2: Possible Threats to Validity for Tasks 4 and 5

Is the Ohio Medicaid Program So Different from Illinois and Wisconsin That Ohio Should Not Be Used as a Comparison Site?

Medicaid entry is a relatively rare phenomenon, and we were concerned that fundamental differences among the Medicaid programs in the three states were affecting the comparisons. Using Medicare and Medicaid enrollment data for the three states, we were able to identify newly dually eligible Medicare beneficiaries, elders who had not been Medicaid eligible within the last three months. We computed the geometric mean monthly rate of Medicaid entry and found that Ohio had a monthly rate of Medicaid entry of 0.11% (i.e. about a tenth of a percent of Medicare aged beneficiaries became eligible for Medicaid each month) while the monthly rates for Illinois and Wisconsin were 0.14% and 0.13%, slightly higher. These background differences may have affected our comparisons.

What Role Did Identification of Medicaid Eligibility (Woodwork Effect) Play for SeniorCare Enrollees?

The fact that a disproportionate number of new Medicaid entrants in Illinois were community residents rather than nursing home entrants suggests that the SeniorCare program enrollment process may have encouraged individuals to discover their own Medicaid eligibility.

Was the Time Period Too Short for Access to Drugs to Have an Effect on Health Status?

The time period was short for a full evaluation. It is likely that any effect of increased access to prescription drugs on other health costs, especially the costs that would precipitate an enrollee into Medicaid, will take longer than 16 to 19 months to emerge.

Appendix 3: Propensity Score Matching

The objective of the analysis was to estimate a projected probability for individual beneficiaries that they would join SeniorCare during the observation period, using variables that were available for SeniorCare enrollees and for potential comparison beneficiaries in Ohio. This probability was estimated using logistic regression and a data set consisting of non-Medicaid aged fee-for-service beneficiaries in each SeniorCare state. We had data at various levels of completeness, as described below, for 1,522,507 beneficiaries in Illinois and 670,556 beneficiaries in Wisconsin; of these, 9.01% of the beneficiaries in our Illinois study group and 7.06% of the beneficiaries in our Wisconsin study group were enrolled in their state's SeniorCare program.

Census block of residence could not be identified for some beneficiaries, and we were unable to match Social Security monthly payments for others. Further, we could not observe CY2001 diagnoses for beneficiaries who recently joined Medicare or were recently Medicare Advantage members. We also determined that beneficiaries with Social Security payments covering only one recipient (referred to in the tables as Dependents, D = 1) should not be pooled with (many fewer) beneficiaries where the Social Security payments were paid for a couple or larger family (Dependents, D > 1). So that we could compute a propensity score for every enrollee, and thus potentially find an Ohio match, we conducted a series of twelve logistic regression analyses for each state data set. For beneficiaries with all data present, we could include all variables in the logistic regression models. Beneficiaries without a Census block location but with all other variables present were then included in the group, and a logistic regression was estimated that omitted the variables based on Census block. Likewise, beneficiaries who were only missing diagnostic data could be included in an analysis for a larger group as long as diagnosis was not included. Appendix Table A-1 presents the numbers of observations for these logistic regression models.

The most complete models for beneficiaries in Illinois and Wisconsin with Social Security payments that cover only themselves are shown in Appendix Table A-2. All models are available on request.

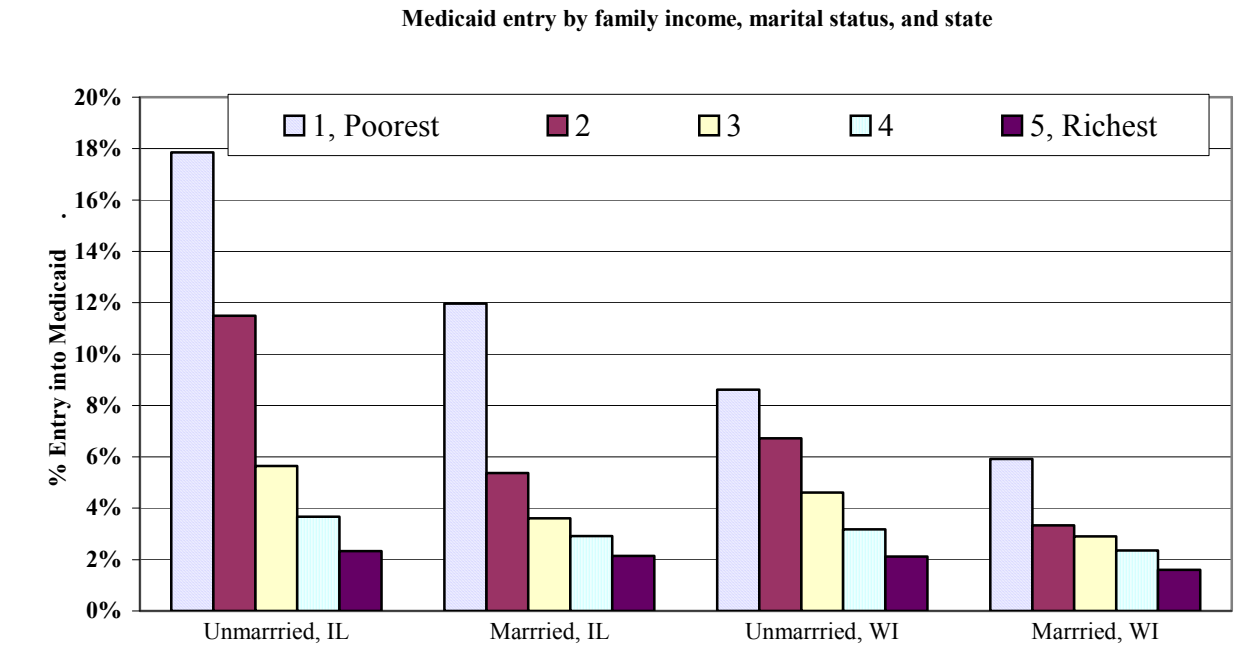
After a pool of potential Ohio comparison subjects was found for each enrollee based on exact matching variables, the pool was limited to those with the same data presence as the enrollee; in other words, presence of Census block data, 2001 diagnostic data, and Social Security payment (D= 1 or D>1) were also exact matching variables. Propensity scores were then computed for each enrollee and for each potential comparison subject using the logistic regression appropriate to their level of data availability.

The matched enrollees and comparison subjects were then examined on all observable variables. The means for beneficiaries with all data present are shown in Appendix Table A-3 for Illinois and Appendix Table A-4 for Wisconsin. All profiles of matched cases and comparisons are available on request.

Because a match was not accepted if the potential comparison beneficiary with nearest-neighbor propensity score had a score more than a specified number of units away from the enrollee's score, it was not possible to match for some enrollees. The final enrollee and comparison groups numbered 129,283 for Illinois and 49,724 for Wisconsin.

Appendix 4: Supplemental Figures for Examining Medicaid Entry and Costs

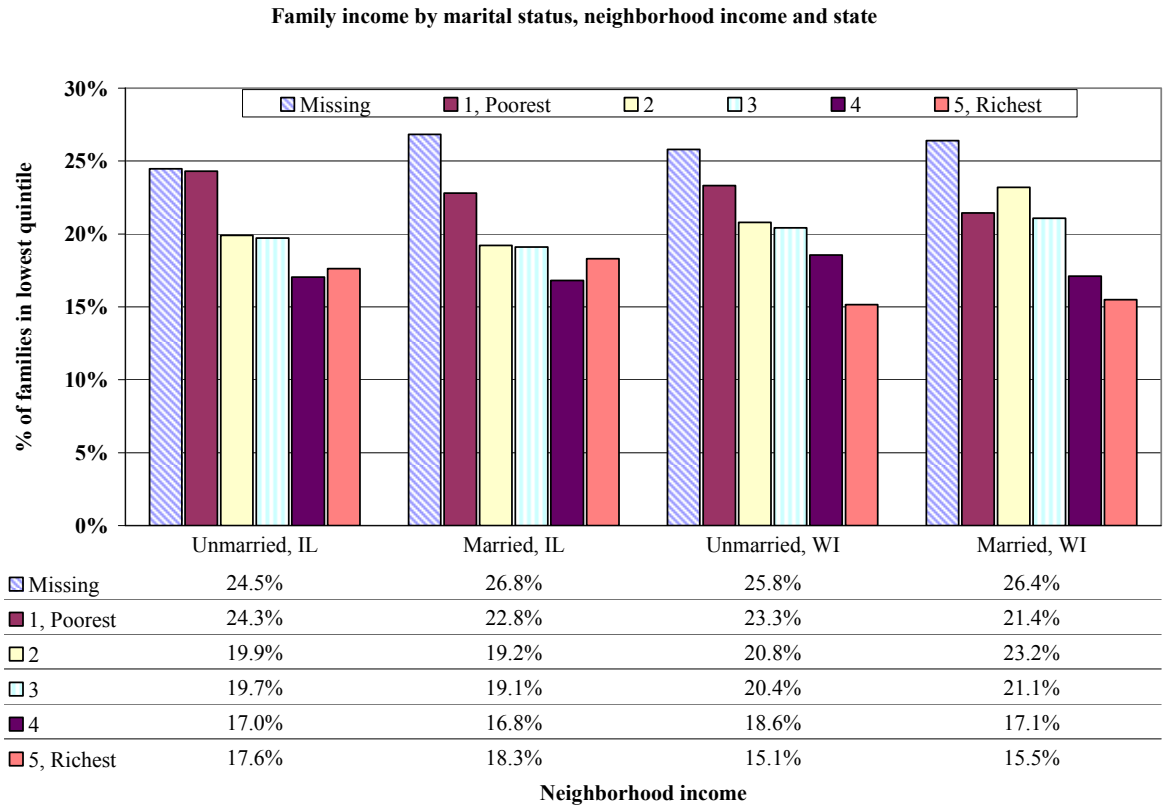
Appendix Figure A-1: Medicaid Entry by Family Income, Marital Status, and State



	Unmarrried, IL	Marrried, IL	Unmarrried, WI	Marrried, WI
1, Poorest	17.9%	12.0%	8.6%	5.9%
2	11.5%	5.4%	6.7%	3.3%
3	5.6%	3.6%	4.6%	2.9%
4	3.7%	2.9%	3.2%	2.4%
5, Richest	2.3%	2.1%	2.1%	1.6%

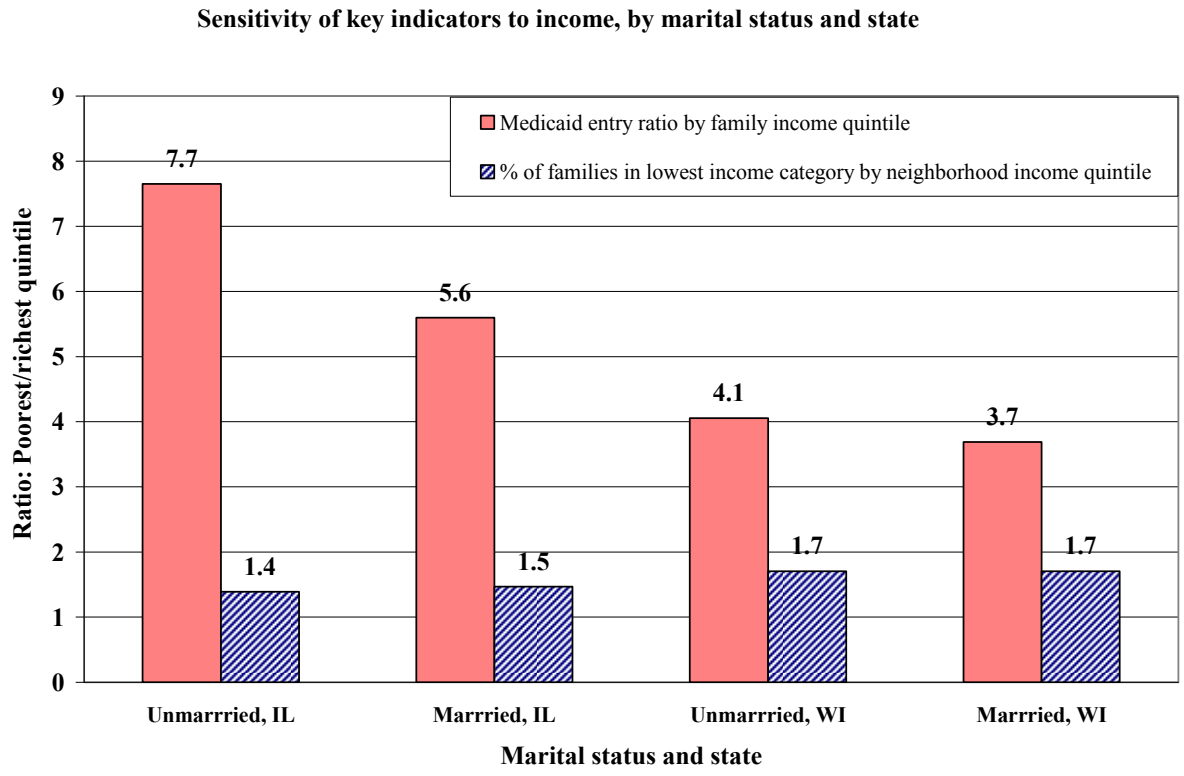
Marital status, state, and family income quintile (1 = poorest)

Appendix Figure A-2: Family income by marital status, neighborhood income and state

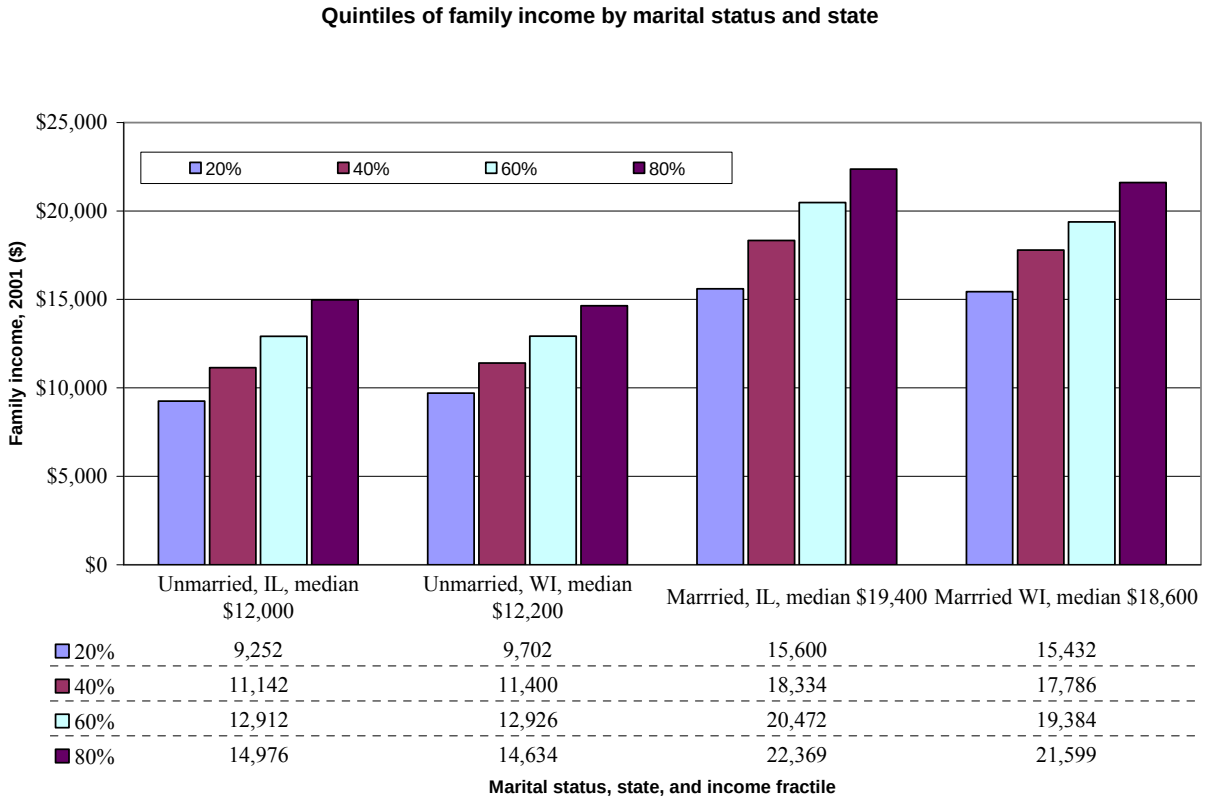


	Unmarried, IL	Married, IL	Unmarried, WI	Married, WI
Missing	24.5%	26.8%	25.8%	26.4%
1, Poorest	24.3%	22.8%	23.3%	21.4%
2	19.9%	19.2%	20.8%	23.2%
3	19.7%	19.1%	20.4%	21.1%
4	17.0%	16.8%	18.6%	17.1%
5, Richest	17.6%	18.3%	15.1%	15.5%

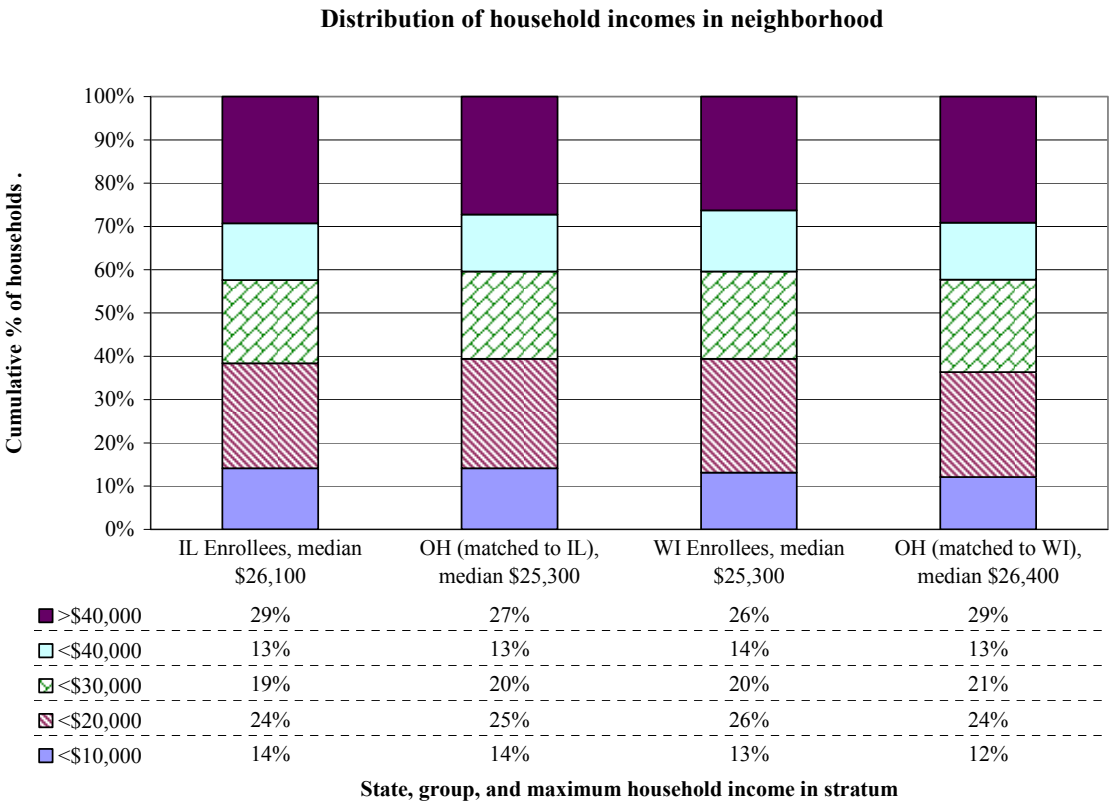
Appendix Figure A-3: Sensitivity of key indicators to income, by marital status and state



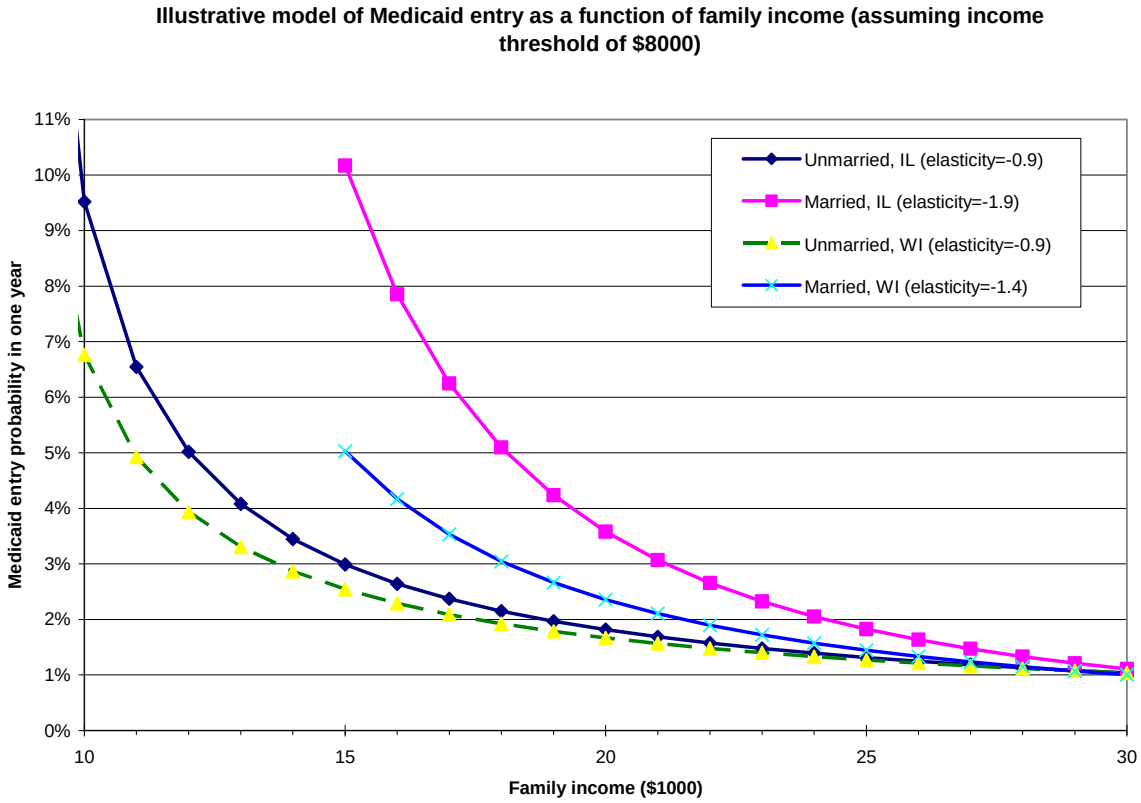
Appendix Figure A-4: Quintiles of family income by marital status and state



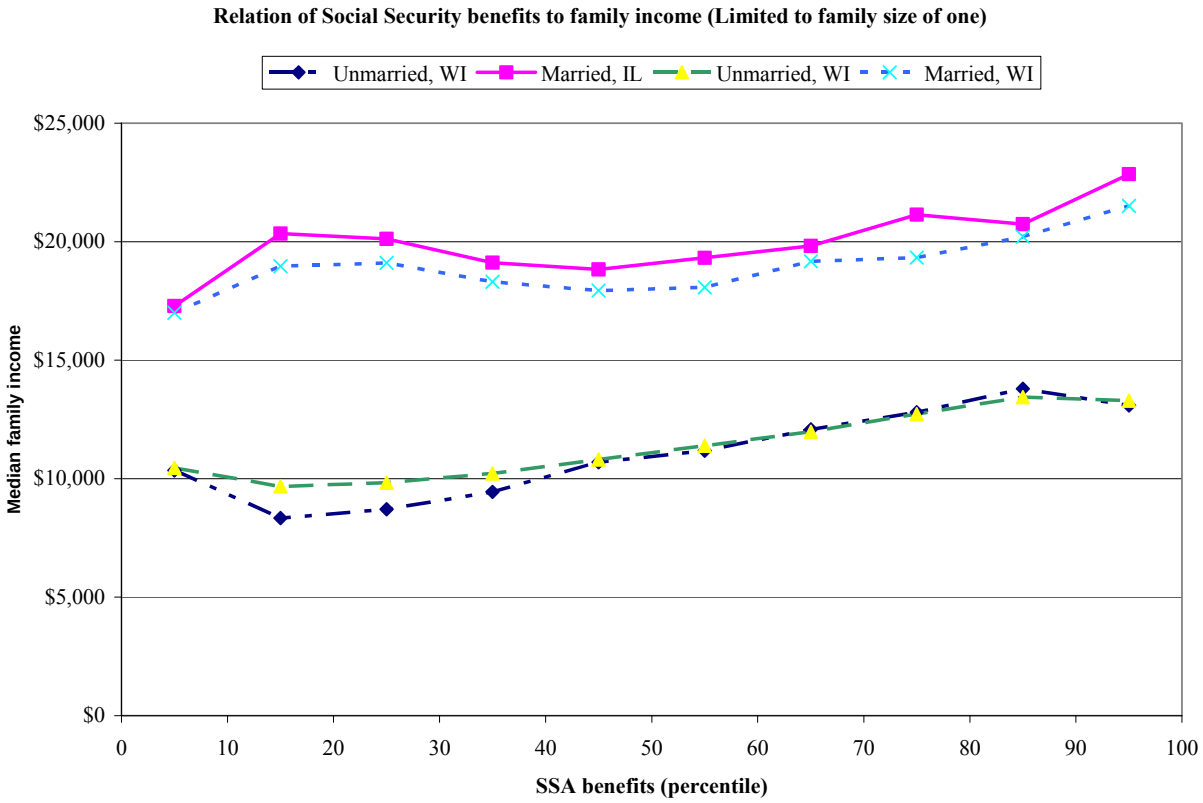
Appendix Figure A-5: Distribution of household incomes in neighborhood



Appendix Figure A-6: Illustrative model of Medicaid entry as a function of family income

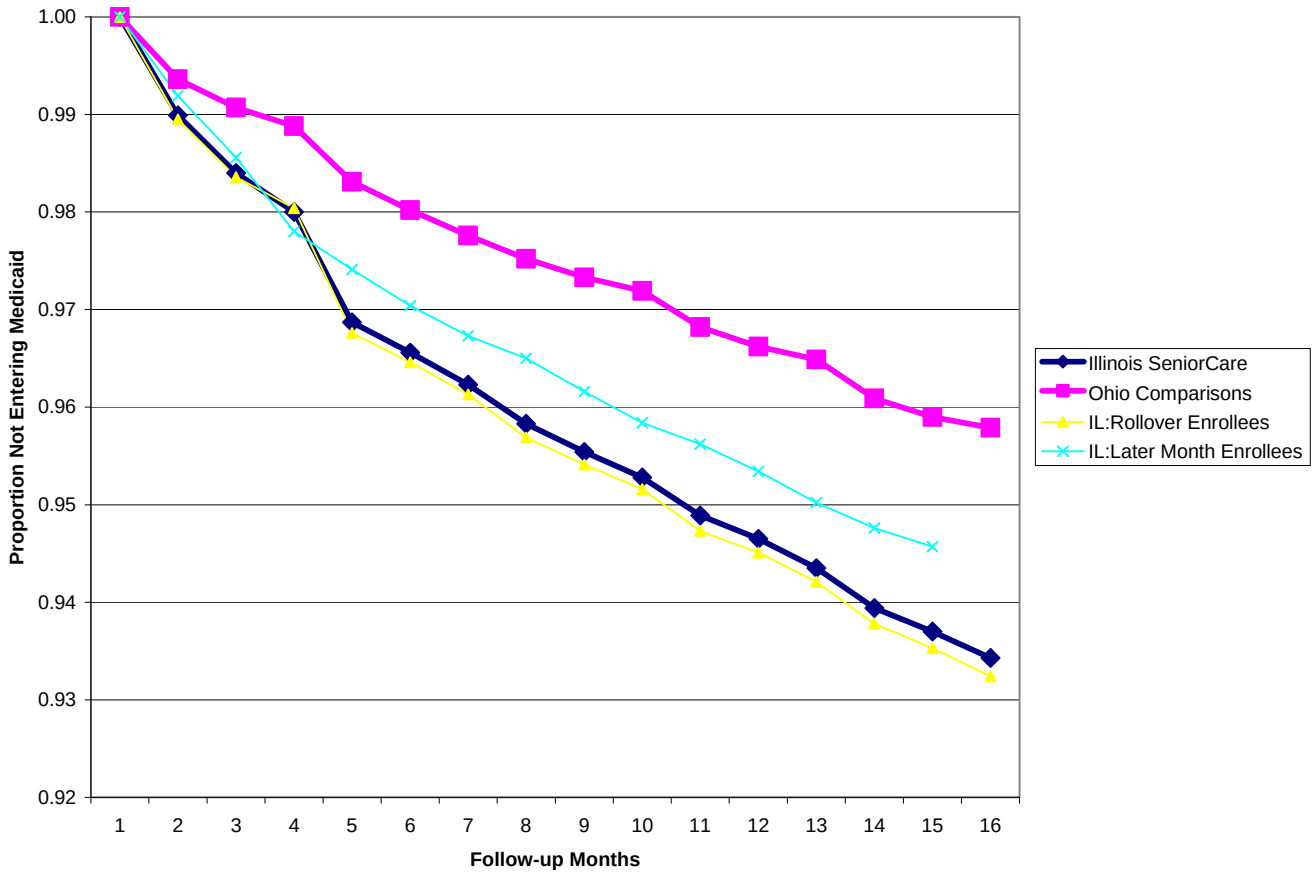


Appendix Figure A-7: Relation of Social Security benefits to family income



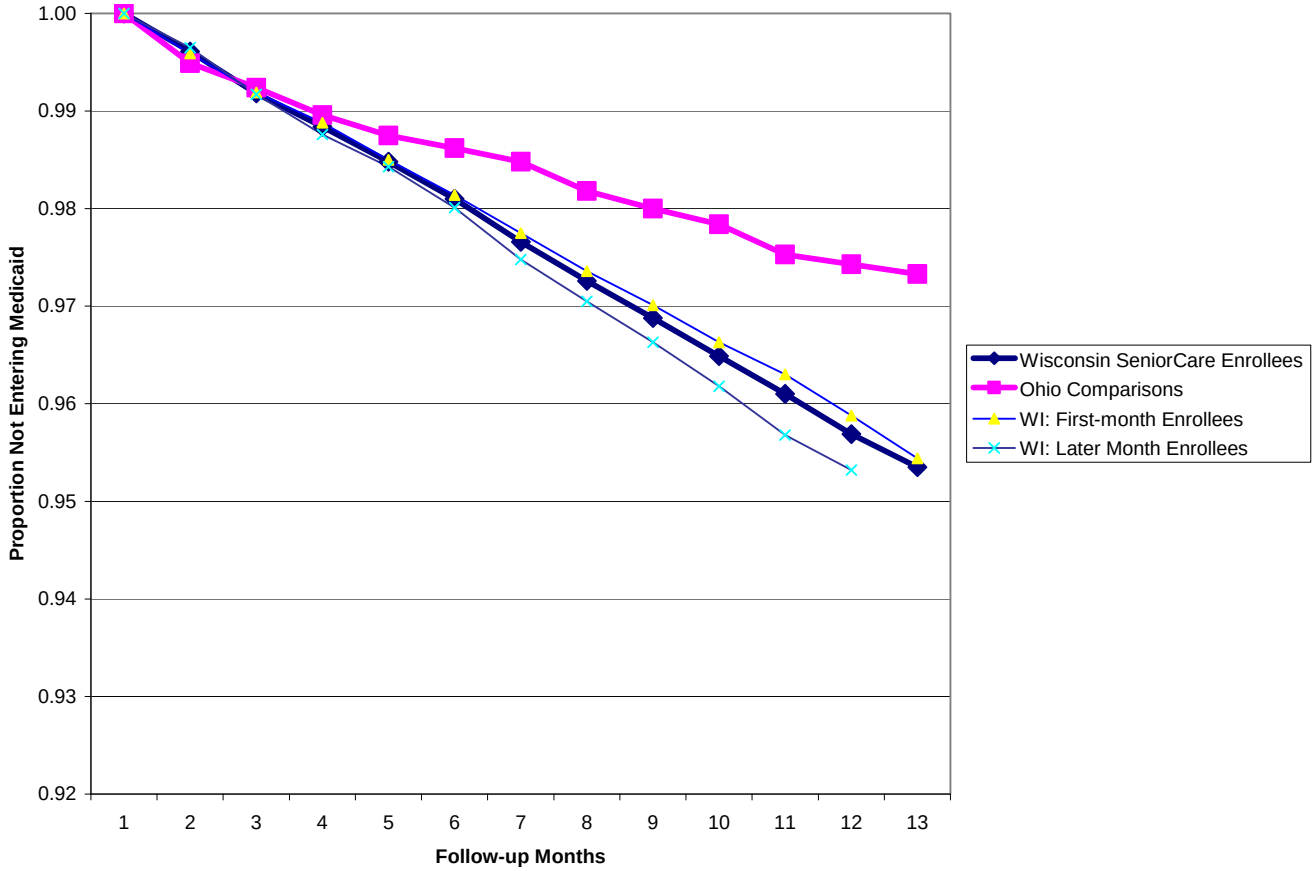
Appendix Figure A-8: Illinois and Matched Cohort Survival Curves for Medicaid Entry

(Analysis based on all matched SeniorCare enrollees and Ohio comparison subjects)



Appendix Figure A-9: Wisconsin and Matched Cohort Survival Curves for Medicaid Entry

(Analysis based on all matched SeniorCare enrollees and Ohio comparison subjects)



Appendix 5: Supplemental Tables for Propensity Matching and Medicare Costs

Appendix Table A-1 Data Availability Dictated the Propensity Score Models to be Fitted

Data Present			Illinois		Wisconsin	
Census	**Diagnosis**	**Social Security**	**N**	**McFadden R^2**	**N**	**McFadden R^2**
✓	✓	D=1	959,494	.0863	480,219	.0676
✓		D=1	1,222,419	.0836	593,653	.0631
	✓	D=1	991,056	.0802	507,886	.0632
		D=1	1,298,143	.0774	624,431	.0587
✓	✓	D>1	102,269	.0571	56,189	.0699
✓		D>1	125,764	.0540	63,654	.0621
	✓	D>1	111,373	.0556	59,382	.0672
		D>1	135,958	.0513	67,233	.0598
✓	✓		1,096,628	.0658	558,031	.0538
✓			1,431,217	.0641	682,410	.0508
	✓		1,171,692	.0584	590,384	.0489
			1,522,507	.0568	721,492	.0461

Appendix Table A-2 Propensity Score Model for Enrollment in SeniorCare: Beneficiaries with Census Block, Diagnosis, and Social Security Payments Data Present, Dependents = 1

	Illinois				Wisconsin			
Variable Name	Estimate	Standard Error	Chi-Square	Pr > ChiSq	Estimate	Standard Error	Chi-Square	Pr > ChiSq
Intercept	-2.159	0.088	603.103	<.0001	-3.646	0.114	1030.607	<.0001
female	0.917	0.010	9045.858	<.0001	0.918	0.015	3963.341	<.0001
agegrp2	0.766	0.013	3646.143	<.0001	0.824	0.020	1638.618	<.0001
agegrp3	1.033	0.013	6871.510	<.0001	1.129	0.020	3182.819	<.0001
agegrp4	1.207	0.013	8620.998	<.0001	1.335	0.021	4215.023	<.0001
agegrp5	1.294	0.014	8931.231	<.0001	1.546	0.021	5344.478	<.0001
Black	0.157	0.014	131.654	<.0001	-0.588	0.051	133.518	<.0001
othrace	0.018	0.029	0.373	0.5412	-0.545	0.072	58.102	<.0001
Urban	-0.643	0.009	5592.162	<.0001	-0.519	0.012	1946.575	<.0001
basemcdf	0.088	0.048	3.340	0.0676	-0.904	0.103	76.864	<.0001
mcd4to12f	1.216	0.038	1020.696	<.0001	1.605	0.074	464.868	<.0001
basehmof	1.294	0.082	246.873	<.0001	0.832	0.093	79.848	<.0001
hmopre3mm	-0.598	0.100	35.925	<.0001	-0.136	0.118	1.328	0.2491
baseinpf	0.176	0.013	172.399	<.0001	0.218	0.022	103.382	<.0001
basehhf	0.155	0.018	71.458	<.0001	0.209	0.035	36.785	<.0001
basesnf	-0.068	0.028	5.734	0.0166	-0.106	0.044	5.738	0.0166
basenh	-1.358	0.029	2240.084	<.0001	-0.943	0.044	469.797	<.0001
Rwjcnt2001	0.013	0.002	27.405	<.0001	0.048	0.004	173.595	<.0001
diabf2001	0.421	0.009	2111.788	<.0001	0.391	0.014	740.169	<.0001
chdf2001	0.251	0.009	751.137	<.0001	0.239	0.014	289.209	<.0001
cvdf2001	0.076	0.012	37.754	<.0001	0.057	0.020	7.988	0.0047
Copdf2001	0.219	0.010	471.473	<.0001	0.251	0.016	253.253	<.0001
arthf2001	0.151	0.009	304.162	<.0001	0.089	0.014	43.560	<.0001
chff2001	0.235	0.012	393.520	<.0001	0.206	0.019	118.012	<.0001
Eldinc0_10p	1.195	0.061	381.656	<.0001	1.326	0.071	347.352	<.0001
Eldinc10_20p	0.881	0.059	221.062	<.0001	0.510	0.064	64.096	<.0001
Eldinc20_30p	0.326	0.061	28.403	<.0001	-0.110	0.070	2.419	0.1199
Eldinc30_40p	-0.114	0.065	3.095	0.0785	-0.074	0.077	0.941	0.3321
Eldinc40p	-0.910	0.058	249.289	<.0001	-0.842	0.062	185.448	<.0001
pcthmo	-0.029	0.008	13.233	0.0003	0.022	0.019	1.385	0.2392
ssa0_10	-1.478	0.062	572.512	<.0001	-0.190	0.088	4.631	0.0314
ssa10_20	-0.727	0.044	270.252	<.0001	0.050	0.065	0.603	0.4374
ssa20_30	-0.442	0.039	129.064	<.0001	0.028	0.058	0.230	0.6315
ssa30_40	0.144	0.034	17.609	<.0001	0.500	0.051	97.673	<.0001
ssa40_50	0.435	0.031	198.889	<.0001	0.793	0.045	309.486	<.0001
ssa50_60	0.573	0.028	422.283	<.0001	0.849	0.041	435.088	<.0001
ssa60_70	0.566	0.025	503.267	<.0001	0.806	0.037	476.474	<.0001
ssa70_80	0.504	0.023	498.962	<.0001	0.631	0.033	358.410	<.0001
ssa80_90	0.355	0.020	328.561	<.0001	0.470	0.029	256.205	<.0001
famssapymt2	-0.158	0.004	1245.644	<.0001	-0.092	0.007	188.775	<.0001

Appendix Table A-3 Profile of Illinois-Ohio Matched Cohort – Part 1

Profile of IL-OH Matched Cohort

D=Direct Matching Variable; P=Propensity Model Variable

Based on full selection of state Rx participants (cases) and non-Rx participants (comparisons)

H:\S\Technology\RxDrugs\IllWIRxEvalCMS\Tasks4&5\[ILWI Propensity Matching 20061101cb.xls]IL-OH Matched

**Medicaid (MCD) variables updated to only capture those with full MCD benefits*

	Illinois-OH Matched Cohort				Illinois Unmatched Cases	
	IL CASES 130,207		OH COMPARISONS 130,207		IL CASES 6,957	
General Population Variables (Present for all observations)						
Gender (D, P)						
Female	100,678	77%	100,678	77%	5,160	74%
Male	29,529	23%	29,529	23%	1,797	26%
Age (D, P)						
<65	363	0%	363	0%	14	0%
65-69	20,327	16%	20,327	16%	1,363	20%
70-74	27,426	21%	27,426	21%	1,668	24%
75-79	31,732	24%	31,732	24%	1,596	23%
80-84	26,832	21%	26,832	21%	1,287	19%
85+	23,527	18%	23,527	18%	1,029	15%
Race/Ethnicity (D, P)						
White	112,015	86%	112,015	86%	4,192	60%
Black	15,857	12%	15,857	12%	1,957	28%
Other/Unknown	2,335	2%	2,335	2%	808	12%
County Setting (D, P)						
Urban	89,145	68%	89,145	68%	4,433	64%
Rural	41,033	32%	41,033	32%	2,479	36%
Unknown	29	0%	29	0%	45	1%
MCR HMO Participation in Index Month (D, P)						
Yes	16,146	12%	16,146	12%	848	12%
MCR HMO Participation 1-3 months prior to Index (D, P)						
Yes	16,718	13%	16,718	13%	984	14%
MCR HMO Participation 4+ months prior to Index (D, P)						
Yes	16,410	13%	16,410	13%	957	14%

Appendix Table A-3 Profile of Illinois-Ohio Matched Cohort – Part 2

Profile of IL-OH Matched Cohort

D=Direct Matching Variable; P=Propensity Model Variable

Based on full selection of state Rx participants (cases) and non-Rx participants (comparisons)

H:\S\Technology\RxDrugs\IllWIRxEvalCMS\Tasks4&5\[ILWI Propensity Matching 20061101cb.xls]IL-OH Matched

**MCD variables updated to only capture those with full MCD benefits*

	IL-OH Matched Cohort				IL Unmatched Cases	
	IL CASES		OH COMPARISONS		IL CASES	
	130,207		130,207		6,957	
MCD Eligibility in Index Month (D, P)						
Yes	52	0%	52	0%	234	3%
MCD Eligibility 1-3 months prior to Index (D, P)						
Yes	801	1%	801	1%	1,580	23%
MCD Eligibility 4-12 months prior to Index (D, P)						
Yes	1,601	1%	1,601	1%	2,285	33%
Utilization in 0-3 months prior to Index (P)						
Inpatient	14,271	11%	11,222	9%	1,487	21%
Home Health	7,098	5%	5,110	4%	802	12%
Index Month (D)						
Jun-02	107,674	83%	107,674	83%	5,413	78%
Jul-02	8,325	6%	8,325	6%	600	9%
Aug-02	4,874	4%	4,874	4%	317	5%
Sep-02	2,644	2%	2,644	2%	196	3%
Oct-02	2,559	2%	2,559	2%	160	2%
Nov-02	2,362	2%	2,362	2%	151	2%
Dec-02	1,769	1%	1,769	1%	120	2%
Original Entitlement (D)						
Age	117,230	90%	117,230	90%	4,952	71%
Disability	12,941	10%	12,941	10%	1,945	28%
ESRD	13	0%	13	0%	28	0%
Disability and ESRD	23	0%	23	0%	32	0%
ESRD (D)						
No	129,750	100%	129,750	100%	6,609	95%

Appendix Table A-3 Profile of Illinois-Ohio Matched Cohort – Part 3

Profile of IL-OH Matched Cohort

D=Direct Matching Variable; P=Propensity Model Variable

Based on full selection of state Rx participants (cases) and non-Rx participants (comparisons)

H:\S\Technology\RxDrugs\IllWIRxEvalCMS\Tasks4&5\[ILWI Propensity Matching 20061101cb.xls]IL-OH Matched

**MCD variables updated to only capture those with full MCD benefits*

	IL-OH Matched Cohort				IL Unmatched Cases	
	IL CASES 130,207		OH COMPARISONS 130,207		IL CASES 6,957	
Yes	457	0%	457	0%	348	5%
MCR Eligibility in Index Month (D)						
Part A Only	915	1%	915	1%	96	1%
Part B Only	39	0%	39	0%	7	0%
Parts A & B	121,307	93%	121,307	93%	3,407	49%
Part A Only/State Paid Premium	4	0%	4	0%	7	0%
Part B Only/State Paid Premium	7,942	6%	7,942	6%	3	0%
Parts A & B/State Paid Premium		0%		0%	3,437	49%
Months of Pre-index MCR Eligibility (D)						
0	288	0%	288	0%	13	0%
1-3 Months	539	0%	539	0%	32	0%
4+ Months	129,380	99%	129,380	99%	6,912	99%
Type of Pre-index MCR Eligibility (D)						
Same as Index Month	126,344	97%	126,344	97%	4,929	71%
Variable Eligibility	3,575	3%	3,575	3%	2,015	29%
No Pre-index Eligibility	288	0%	288	0%	13	0%
Index Month Nursing Home Status/Hierarchical (D)						
Long-term Nursing Home (JAI nursing home)	1,645	1%	1,645	1%	231	3%
SNF/MDS Nursing Home	1,131	1%	1,131	1%	310	4%
None	127,431	98%	127,431	98%	6,416	92%
Nursing Home Status 0-3 months prior to Index /Hierarchical (P)						
Long-term Nursing Home (JAI nursing home)	1,888	1%	1,781	1%	268	4%
SNF/MDS Nursing Home	2,592	2%	2,425	2%	417	6%

Appendix Table A-3 Profile of Illinois-Ohio Matched Cohort – Part 4

Profile of IL-OH Matched Cohort

D=Direct Matching Variable; P=Propensity Model Variable

Based on full selection of state Rx participants (cases) and non-Rx participants (comparisons)

H:\S\Technology\RxDrugs\IllWIRxEvalCMS\Tasks4&5\[ILWI Propensity Matching 20061101cb.xls]IL-OH Matched

**MCD variables updated to only capture those with full MCD benefits*

	IL-OH Matched Cohort				IL Unmatched Cases	
	IL CASES 130,207		OH COMPARISONS 130,207		IL CASES 6,957	
None	125,727	97%	126,001	97%	6,272	90%
Impairment/Disease Variables (Present observations with diagnostic data)						
Observations with Disease Information (D)						
Yes	103,340	79%	103,340	79%	4,676	67%
2001 JAI Morbidity Score (P)						
Mean	3.04		3.11		3.92	
Median	3.00		3.00		4.00	
2001 Chronic Disease (P)						
Diabetes	26,804	26%	26,417	26%	1,972	42%
CHD	38,579	37%	38,732	37%	2,422	52%
CVD	14,487	14%	14,443	14%	1,057	23%
COPD	20,987	20%	21,852	21%	1,627	35%
Arthritis	31,887	31%	33,218	32%	1,825	39%
CHF	17,334	17%	15,416	15%	1,568	34%
2001 Count of Selected Chronic Diseases (D)						
0	27,937	27%	27,937	27%	707	15%
1	32,047	31%	32,047	31%	1,054	23%
2	22,494	22%	22,494	22%	1,023	22%
3	12,819	12%	12,819	12%	782	17%
4	5,891	6%	5,891	6%	639	14%
5	1,890	2%	1,890	2%	357	8%
6	262	0%	262	0%	114	2%

Appendix Table A-3 Profile of Illinois-Ohio Matched Cohort – Part 5

Profile of Illinois-OH Matched Cohort

D=Direct Matching Variable; P=Propensity Model Variable

Based on full selection of state Rx participants (cases) and non-Rx participants (comparisons)

H:\S\Technology\RxDrugs\IllWIRxEvalCMS\Tasks4&5\[ILWI Propensity Matching 20061101cb.xls]Illinois-OH Matched

**MCD variables updated to only capture those with full MCD benefits*

	Illinois-OH Matched Cohort				Illinois Unmatched Cases	
	IL CASES 130,207		OH COMPARISONS 130,207		IL CASES 6,957	
Census Variables (Restricted to those with census data)						
Observations with Census Information (D)						
Yes	122,019	94%	122,019	94%	5,659	81%
% Census Block: Income $0-$10,000 (P)						
Mean	14%		14%		18%	
Median	12%		12%		14%	
% Census Block: Income $10,000-$20,000 (P)						
Mean	24%		25%		24%	
Median	24%		25%		24%	
% Census Block: Income $20,000-$30,000 (P)						
Mean	19%		20%		18%	
Median	17%		19%		16%	
% Census Block: Income $30,000-$40,000 (P)						
Mean	13%		13%		12%	
Median	12%		12%		11%	
% Census Block: Income >$40,000 (P)						
Mean	29%		27%		27%	
Median	28%		25%		26%	
% Census Block: HMO Participant (P)						
Mean	18%		21%		20%	
Median	1%		3%	x		
SSA Variables (Restricted to those with SSA data)						
Percent with SSA Information (D)						
Yes	123,812	95%	123,812	95%	6,211	89%

Appendix Table A-3 Profile of Illinois-Ohio Matched Cohort – Part 6

Profile of Illinois-OH Matched Cohort

D=Direct Matching Variable; P=Propensity Model Variable

Based on full selection of state Rx participants (cases) and non-Rx participants (comparisons)

H:\S\Technology\RxDrugs\IllWIRxEvalCMS\Tasks4&5\[ILWI Propensity Matching 20061101cb.xls]Illinois-OH Matched

**MCD variables updated to only capture those with full MCD benefits*

	IL-OH Matched Cohort				IL Unmatched Cases	
	IL CASES		OH COMPARISONS		IL CASES	
	130,207		130,207		6,957	
Dependent Count (based on # contributing to Family SSA) (D)						
1	114,888	93%	114,888	93%	5,368	86%
2	8,822	7%	8,822	7%	764	12%
3	101	0%	101	0%	72	1%
4	1	0%	1	0%	7	0%
5	0	0%	0	0%	0	0%
6	0	0%	0	0%	0	0%
7	0	0%	0	0%	0	0%
8	0	0%	0	0%	0	0%
9	0	0%	0	0%	0	0%
10	0	0%	0	0%	0	0%
	8,924		8,924		843	
BIC Category (D)						
(1) Primary Beneficiary	95,109	77%	95,109	77%	4,599	74%
(2) Spouse	3,373	3%	3,373	3%	234	4%
(3) Divorced Spouse	178	0%	178	0%	51	1%
(4) Child	83	0%	83	0%	49	1%
(5) Widow(er)	23,202	19%	23,202	19%	974	16%
(6) Surviving Divorced Widow(er)	1,377	1%	1,377	1%	202	3%
(7) Parent	1	0%	1	0%	14	0%
(8) Special Age 72 Benefit	0	0%	0	0%	0	0%
(9) Special age 72 Benefit Spouse	0	0%	0	0%	0	0%
(10) Medicare Only	489	0%	489	0%	86	1%
(11) Disabled Widow(er)	0	0%	0	0%	1	0%

Appendix Table A-3 Profile of Illinois-Ohio Matched Cohort – Part 7

Profile of Illinois-OH Matched Cohort

D=Direct Matching Variable; P=Propensity Model Variable

Based on full selection of state Rx participants (cases) and non-Rx participants (comparisons)

H:\S\Technology\RxDrugs\IllWIRxEvalCMS\Tasks4&5\[ILWI Propensity Matching 20061101cb.xls]IL-OH Matched

**MCD variables updated to only capture those with full MCD benefits*

	IL-OH Matched Cohort				IL Unmatched Cases	
	IL CASES 130,207		OH COMPARISONS 130,207		IL CASES 6,957	
(12) Surviving Divorced Disabled Widow(er)	0	0%	0	0%	1	0%
Invalid	0	0%	0	0%	0	0%
Distribution of Family SSA Payment by Family Size						
Family Size=1						
2001 Family SSA Payment (P)						
N	114,888		114,888		5,368	
Mean	$9,047		$8,924		$8,088	
100% Max	$23,466		$23,454		$21,405	
99%	$15,720		$16,344		$15,012	
95%	$14,028		$14,256		$12,984	
90%	$13,008		$13,008		$11,952	
75% Q3	$11,376		$11,412		$10,344	
50% Median	$9,516		$9,468		$8,647	
25% Q1	$7,044		$6,660		$6,390	
10%	$4,860		$4,320		$3,156	
5%	$1,992		$0		$0	
1%	$0		$0		$0	
0% Min	$0		$0		$0	
Decile Distribution (P)						
Above State Rx Max (IL: >$23,466; WI: >$22,842)	0	0%	0	0%	0	0%
90-100th (IL: >$12,972 to $23,466; WI: >$12,588 to $22,842)	11,680	10%	11,717	10%	271	5%
80-90th (IL: >$11,772 to $12,972; WI: >$11,532 to $12,588)	11,663	10%	12,071	11%	330	6%
70-80th (IL: >$10,944 to $11,772; WI: >$10,752 to $11,532)	11,776	10%	11,861	10%	342	6%

Appendix Table A-3 Profile of Illinois-Ohio Matched Cohort – Part 8

Profile of Illinois-OH Matched Cohort

D=Direct Matching Variable; P=Propensity Model Variable

Based on full selection of state Rx participants (cases) and non-Rx participants (comparisons)

H:\S\Technology\RxDrugs\IllWIRxEvalCMS\Tasks4&5\[ILWI Propensity Matching 20061101cb.xls]IL-OH Matched

**MCD variables updated to only capture those with full MCD benefits*

	IL-OH Matched Cohort				IL Unmatched Cases	
	IL CASES 130,207		OH COMPARISONS 130,207		IL CASES 6,957	
60-70th (IL: >$10,224 to $10,944; WI: >$10,056 to $10,752)	11,358	10%	11,011	10%	489	9%
50-60th (IL: >$9,468 to $10,224; WI: >$9,312 to $10,056)	11,528	10%	10,689	9%	593	11%
40-50th (IL: >$8,628 to $9,468; WI: >$8,460 to $9,312)	11,335	10%	9,877	9%	671	13%
30-40th (IL: >$7,620 to $8,628; WI: >$7,344 to $8,460)	11,354	10%	10,382	9%	734	14%
20-30th (IL: >$6,300 to $7,620; WI: >$6,024 to $7,344)	11,387	10%	12,107	11%	631	12%
10-20th (IL: >$4,812 to $6,300; WI: >$4,800 to $6,024)	11,580	10%	12,124	11%	493	9%
0-10th (IL: $0 to $4,812; WI: $0 to $4,800)	11,227	10%	13,049	11%	814	15%
Family Size>1						
2001 Family SSA Payment (P)						
N	8,924		8,924		843	
Mean	$15,238		$15,213		$14,070	
100% Max	$24,216		$24,228		$24,238	
99%	$23,040		$23,580		$23,340	
95%	$21,144		$21,540		$21,108	
90%	$19,836		$19,836		$19,613	
75% Q3	$17,820		$17,848		$17,052	
50% Median	$15,648		$15,732		$14,280	
25% Q1	$12,915		$12,978		$11,316	
10%	$10,047		$9,833		$8,384	
5%	$8,400		$7,152		$6,780	
1%	$5,320		$3,372		$3,420	
0% Min	$0		$0		$0	
Decile Distribution (P)						
Above State Rx Max (IL: >$24,238; WI: >$24,240)	0	0%	0	0%	0	0%

Appendix Table A-3 Profile of Illinois-Ohio Matched Cohort – Part 9

Profile of Illinois-OH Matched Cohort

D=Direct Matching Variable; P=Propensity Model Variable

Based on full selection of state Rx participants (cases) and non-Rx participants (comparisons)

H:\S\Technology\RxDrugs\IllWIRxEvalCMS\Tasks4&5\[ILWI Propensity Matching 20061101cb.xls]IL-OH Matched

**MCD variables updated to only capture those with full MCD benefits*

	IL-OH Matched Cohort				IL Unmatched Cases	
	IL CASES		OH COMPARISONS		IL CASES	
	130,207		130,207		6,957	
90-100th (IL: >$19,806 to $24,238; WI: >$19,044 to $24,240)	901	10%	903	10%	75	9%
80-90th (IL: >$18,324 to $19,806; WI: >$17,652 to $19,044)	915	10%	881	10%	60	7%
70-80th (IL: >$17,232 to $18,324; WI: >$16,572 to $17,652)	907	10%	1,010	11%	68	8%
60-70th (IL: >$16,320 to $17,232; WI: >$15,660 to $16,572)	942	11%	964	11%	35	4%
50-60th (IL: >$15,540 to $16,320; WI: >$14,700 to $15,660)	908	10%	927	10%	72	9%
40-50th (IL: >$14,592 to $15,540; WI: >$13,692 to $14,700)	873	10%	905	10%	86	10%
30-40th (IL: >$13,464 to $14,592; WI: >$12,614 to $13,692)	909	10%	801	9%	85	10%
20-30th (IL: >$11,988 to $13,464; WI: >$11,316 to $12,614)	871	10%	819	9%	106	13%
10-20th (IL: >$9,900 to $11,988; WI: >$9,771 to $11,316)	850	10%	806	9%	122	14%
0-10th (IL: $0 to $9,900; WI: $0 to $9,771)	848	10%	908	10%	134	16%
Data Combinations						
Distribution according to the presence of SSA and/or Census Data (D)						
SSA Data=Y/Family Size=1/Census Data=Y/Dx Data=Y	84,477	65%	84,477	65%	2,718	39%
SSA Data=Y/Family Size=1/Census Data=Y/Dx Data=N	23,490	18%	23,490	18%	1,655	24%
SSA Data=Y/Family Size=1/Census Data=N/Dx Data=Y	6,348	5%	6,348	5%	867	12%
SSA Data=Y/Family Size=1/Census Data=N/Dx Data=N	573	0%	573	0%	128	2%
SSA Data=Y/Family Size>1/Census Data=Y/Dx Data=Y	6,388	5%	6,388	5%	469	7%
SSA Data=Y/Family Size>1/Census Data=Y/Dx Data=N	1,587	1%	1,587	1%	207	3%
SSA Data=Y/Family Size>1/Census Data=N/Dx Data=Y	915	1%	915	1%	136	2%
SSA Data=Y/Family Size>1/Census Data=N/Dx Data=N	34	0%	34	0%	31	0%
SSA Data=N/Census Data=Y/Dx Data=Y	4,913	4%	4,913	4%	384	6%
SSA Data=N/Census Data=Y/Dx Data=N	1,164	1%	1,164	1%	226	3%
SSA Data=N/Census Data=N/Dx Data=Y	299	0%	299	0%	102	1%

Appendix Table A-3 Profile of Illinois-Ohio Matched Cohort – Part 10

Profile of Illinois-OH Matched Cohort

D=Direct Matching Variable; P=Propensity Model Variable

Based on full selection of state Rx participants (cases) and non-Rx participants (comparisons)

H:\S\Technology\RxDrugs\IllWIRxEvalCMS\Tasks4&5\[ILWI Propensity Matching 20061101cb.xls]IL-OH Matched

**MCD variables updated to only capture those with full MCD benefits*

	IL-OH Matched Cohort				IL Unmatched Cases	
	IL CASES		OH COMPARISONS		IL CASES	
	130,207		130,207		6,957	
SSA Data=N/Census Data=N/Dx Data=N	19	0%	19	0%	34	0%
Propensity Matching						
Distribution according to type of propensity matching						
Exact	2,816	2%				
Within Decile Nearest Neighbor	121,840	94%				
General Nearest Neighbor	5,551	4%				
Absolute Difference in Propensity Scores between cases and comparisons						
N	130,207					
Mean	0.03592					
100% Max	2.88062					
99%	0.79105					
95%	0.18333					
90%	0.05520					
75% Q3	0.00547					
50% Median	0.00063					
25% Q1	0.00012					
10%	0.00003					
5%	0.00001					
1%	0.00000					
0% Min	0.00000					

Appendix Table A-4 Profile of WI-OH Matched Cohort – Part 1

Profile of WI-OH Matched Cohort
D=Direct Matching Variable; P=Propensity Model Variable
Based on full selection of state Rx participants (cases) and non-Rx participants (comparisons)
**MCD variables updated to only capture those with full MCD benefits*
H:\S\Technology\RxDrugs\IllWIRxEvalCMS\Tasks4&5\[ILWI Propensity Matching 20061101.xls]WI-OH Matched

	WI-OH Matched Cohort				WI Unmatched Cases	
	WI CASES 49,811	% 49,811	OH COMPARISONS		WI CASES 1,125	%
General Population Variables (Present for all observations)						
Gender (D, P)						
Female	38,258	77%	38,258	77%	755	67%
Male	11,553	23%	11,553	23%	370	33%
Age (D, P)						
<65	5	0.0001	5	0.0001	0	0
65-69	6,855	14%	6,855	14%	197	18%
70-74	9,667	19%	9,667	19%	257	23%
75-79	11,880	24%	11,880	24%	271	24%
80-84	10,820	22%	10,820	22%	209	19%
85+	10,584	21%	10,584	21%	191	17%
Race/Ethnicity (D, P)						
White	48,829	98%	48,829	98%	1,001	89%
Black	687	0.0138	687	0.0138	51	0.0453
Other/Unknown	295	1%	295	1%	73	6%
County Setting (D, P)						
Urban	25,361	51%	25,361	51%	389	35%
Rural	24,447	49%	24,447	49%	732	65%
Unknown	3	0.0001	3	0.0001	4	0.0036
MCR HMO Participation in Index Month (D, P)						
Yes	2,689	5%	2,689	5%	222	20%
MCR HMO Participation 1-3 months prior to Index (D, P)						

Appendix Table A-4 Profile of WI-OH Matched Cohort – Part 2

Profile of WI-OH Matched Cohort

D=Direct Matching Variable; P=Propensity Model Variable

Based on full selection of state Rx participants (cases) and non-Rx participants (comparisons)

**MCD variables updated to only capture those with full MCD benefits*

H:\S\Technology\RxDrugs\IllWIRxEvalCMS\Tasks4&5\[ILWI Propensity Matching 20061101.xls]WI-OH Matched

	WI-OH Matched Cohort				WI Unmatched Cases	
	WI CASES 49,811		OH COMPARISONS 49,811		WI CASES 1,125	
Yes	2,707	5%	2,707	5%	184	16%
MCR HMO Participation 4+ months prior to Index (D, P)						
Yes	2,615	5%	2,615	5%	149	13%
MCD Eligibility in Index Month (D, P)						
Yes	48	0.001	48	0.001	195	0.1733
MCD Eligibility 1-3 months prior to Index (D, P)						
Yes	79	0%	79	0%	268	24%
MCD Eligibility 4-12 months prior to Index (D, P)						
Yes	326	0.0065	326	0.0065	483	0.4293
Utilization in 0-3 months prior to Index (P)						
Inpatient	5,208	10%	4,493	9%	192	17%
Home Health	1753	0.0352	2069	0.0415	69	0.0613
Index Month (D)						
2-Jun		0%		0%		0%
2-Jul		0%		0%		0%
2-Aug		0%		0%		0%
2-Sep	33,353	67%	33,353	67%	730	65%
2-Oct	8,725	18%	8,725	18%	198	18%
2-Nov	4,749	10%	4,749	10%	132	12%
2-Dec	2,984	6%	2,984	6%	65	6%
Original Entitlement (D)						
Age	46,274	93%	46,274	93%	854	76%
Disability	3,519	7%	3,519	7%	251	22%

Appendix Table A-4 Profile of WI-OH Matched Cohort – Part 3

Profile of WI-OH Matched Cohort

D=Direct Matching Variable; P=Propensity Model Variable

**MCD variables updated to only capture those with full MCD benefits*

Based on full selection of state Rx participants (cases) and non-Rx participants (comparisons)

H:\S\Technology\RxDrugs\IllWIRxEvalCMS\Tasks4&5\[ILWI Propensity Matching 20061101.xls]WI-OH Matched

	WI-OH Matched Cohort				WI Unmatched Cases	
	WI CASES 49,811		OH COMPARISONS 49,811		WI CASES 1,125	
ESRD	10	0%	10	0%	12	1%
Disability and ESRD	8	0%	8	0%	8	1%
ESRD (D)						
No	49,700	100%	49,700	100%	1,052	94%
Yes	111	0%	111	0%	73	6%
MCR Eligibility in Index Month (D)						
Part A Only	92	0%	92	0%	8	1%
Part B Only	13	0%	13	0%	1	0%
Parts A & B	47,915	96%	47,915	96%	733	65%
Part A Only/State Paid Premium	1	0%	1	0%	5	0%
Part B Only/State Paid Premium	0	0%	0	0%	0	0%
Parts A & B/State Paid Premium	1,790	4%	1,790	4%	378	34%
Months of Pre-index MCR Eligibility (D)						
0	212	0%	212	0%	4	0%
1-3 Months	246	0%	246	0%	8	1%
4+ Months	49,353	99%	49,353	99%	1,113	99%
Type of Pre-index MCR Eligibility (D)						
Same as Index Month	48,112	97%	48,112	97%	765	68%
Variable Eligibility	1,487	3%	1,487	3%	356	32%
No Pre-index Eligibility	212	0%	212	0%	4	0%
Index Month Nursing Home Status/Hierarchical (D)						
Long-term Nursing Home (JAI nursing home)	711	1%	711	1%	39	3%
SNF/MDS Nursing Home	437	1%	437	1%	71	6%

Appendix Table A-4 Profile of WI-OH Matched Cohort – Part 4

Profile of WI-OH Matched Cohort

D=Direct Matching Variable; P=Propensity Model Variable

**MCD variables updated to only capture those with full MCD benefits*

Based on full selection of state Rx participants (cases) and non-Rx participants (comparisons)

H:\S\Technology\RxDrugs\IllWIRxEvalCMS\Tasks4&5\[ILWI Propensity Matching 20061101.xls]WI-OH Matched

	WI-OH Matched Cohort				WI Unmatched Cases	
	WI CASES 49,811		OH COMPARISONS 49,811		WI CASES 1,125	
None	48,663	98%	48,663	98%	1,015	90%
Nursing Home Status 0-3 months prior to Index /Hierarchical (P)						
Long-term Nursing Home (JAI nursing home)	824	2%	792	2%	43	4%
SNF/MDS Nursing Home	979	2%	1,114	2%	86	8%
None	48,008	96%	47,905	96%	996	89%
Impairment/Disease Variables (Present observations with diagnostic data)						
Observations with Disease Information (D)						
Yes	43,294	87%	43,294	87%	896	80%
2001 JAI Morbidity Score (P)						
Mean	2.99		2.93		3.83	
Median	3.00		3.00		4	
2001 Chronic Disease (P)						
Diabetes	9,758	23%	8,478	20%	311	35%
CHD	14,851	34%	14,587	34%	406	45%
CVD	4,736	11%	5,389	12%	152	17%
COPD	7,772	18%	7,996	18%	228	25%
Arthritis	11,415	26%	13,166	30%	293	33%
CHF	6,175	14%	5,091	12%	255	28%
2001 Count of Selected Chronic Diseases (D)						
0	13,353	31%	13,353	31%	168	19%
1	14,434	33%	14,434	33%	264	29%
2	8,921	21%	8,921	21%	199	22%
3	4,447	10%	4,447	10%	129	14%

Appendix Table A-4 Profile of WI-OH Matched Cohort – Part 5

Profile of WI-OH Matched Cohort

Based on full selection of state Rx participants (cases) and non-Rx participants (comparisons)
H:\S\Technology\RxDrugs\IllWIRxEvalCMS\Tasks4&5\[ILWI Propensity Matching 20061101.xls]WI-OH Matched

D=Direct Matching Variable; P=Propensity Model Variable
**MCD variables updated to only capture those with full MCD benefits*

	WI-OH Matched Cohort				WI Unmatched Cases	
	WI CASES 49,811		OH COMPARISONS 49,811		WI CASES 1,125	
4	1,670	4%	1,670	4%	91	10%
5	404	1%	404	1%	38	4%
6	65	0%	65	0%	7	1%
Census Variables (Restricted to those with census data)						
Observations with Census Information (D)						
Yes	47,622	96%	47,622	96%	928	82%
% Census Block: Income $0-$10,000 (P)						
Mean	13%		12%		15%	
Median	11%		0.1015		0.1299	
% Census Block: Income $10,000-$20,000 (P)						
Mean	26%		24%		27%	
Median	26%		0.2414		0.2617	
% Census Block: Income $20,000-$30,000 (P)						
Mean	20%		0.2115		0.1881	
Median	20%		0.201		0.1813	
% Census Block: Income $30,000-$40,000 (P)						
Mean	14%		13%		14%	
Median	13%		0.1299		0.125	
% Census Block: Income >$40,000 (P)						
Mean	25%		29%		24%	
Median	23%		0.2687		0.2222	
% Census Block: HMO Participant (P)						
Mean	12%		0.2444		0.1294	

Appendix Table A-4 Profile of WI-OH Matched Cohort – Part 6

Profile of WI-OH Matched Cohort

Based on full selection of state Rx participants (cases) and non-Rx participants (comparisons)
H:\S\Technology\RxDrugs\IllWIRxEvalCMS\Tasks4&5\[ILWI Propensity Matching 20061101.xls]WI-OH Matched

D=Direct Matching Variable; P=Propensity Model Variable
**MCD variables updated to only capture those with full MCD benefits*

	WI-OH Matched Cohort				WI Unmatched Cases	
	WI CASES		OH COMPARISONS		WI CASES	
	49,811		49,811		1,125	
Median	1%		0.0194		0.0097	
SSA Variables (Restricted to those with SSA data)						
Percent with SSA Information (D)						
Yes	48,271	97%	48,271	97%	1,052	94%
Dependent Count (based on # contributing to Family SSA) (D)						
1	43,472	90%	43,472	90%	842	80%
2	4,721	10%	4,721	10%	187	18%
3	77	0%	77	0%	22	2%
4	1	0%	1	0%	0	0%
5	0	0%	0	0%	1	0%
6	0	0%	0	0%	0	0%
7	0	0%	0	0%	0	0%
8	0	0%	0	0%	0	0%
9	0	0%	0	0%	0	0%
10	0	0%	0	0%	0	0%
	4,799		4,799		210	
BIC Category (D)						
(1) Primary Beneficiary	35,972	75%	35,972	75%	748	71%
(2) Spouse	1,901	4%	1,901	4%	70	7%
(3) Divorced Spouse	57	0%	57	0%	4	0%
(4) Child	40	0%	40	0%	8	1%
(5) Widow(er)	9,751	20%	9,751	20%	164	16%

Appendix Table A-4 Profile of WI-OH Matched Cohort – Part 7

Profile of WI-OH Matched Cohort

Based on full selection of state Rx participants (cases) and non-Rx participants (comparisons)
H:\S\Technology\RxDrugs\IllWIRxEvalCMS\Tasks4&5\[ILWI Propensity Matching 20061101.xls]WI-OH Matched

D=Direct Matching Variable; P=Propensity Model Variable
**MCD variables updated to only capture those with full MCD benefits*

	WI-OH Matched Cohort				WI Unmatched Cases	
	WI CASES 49,811		OH COMPARISONS 49,811		WI CASES 1,125	
(6) Surviving Divorced Widow(er)	385	1%	385	1%	34	3%
(7) Parent	0	0%	0	0%	0	0%
(8) Special Age 72 Benefit	0	0%	0	0%	0	0%
(9) Special age 72 Benefit Spouse	0	0%	0	0%	0	0%
(10) Medicare Only	165	0%	165	0%	23	2%
(11) Disabled Widow(er)	0	0%	0	0%	1	0%
(12) Surviving Divorced Disabled Widow(er)	0	0%	0	0%	0	0%
Invalid	0	0%	0	0%	0	0%
Distribution of Family SSA Payment by Family Size						
Family Size=1						
2001 Family SSA Payment (P)						
N	43,472		43,472		842	
Mean	$8,843		$8,989		$16,152	
100% Max	$22,842		$22,548		$15,120	
99%	$15,216		$17,064		$12,924	
95%	$13,548		$14,904		$12,060	
90%	$12,588		$13,656		$10,620	
75% Q3	$11,112		$11,904		$9,043	
50% Median	$9,324		$9,598		$6,636	
25% Q1	$6,684		$6,168		$4,224	
10%	$4,812		$3,756		$0	
5%	$3,216		$0		$0	

Appendix Table A-4 Profile of WI-OH Matched Cohort – Part 8

Profile of WI-OH Matched Cohort

D=Direct Matching Variable; P=Propensity Model Variable

**MCD variables updated to only capture those with full MCD benefits*

Based on full selection of state Rx participants (cases) and non-Rx participants (comparisons)

H:\S\Technology\RxDrugs\IllWIRxEvalCMS\Tasks4&5\[ILWI Propensity Matching 20061101.xls]WI-OH Matched

	WI-OH Matched Cohort				WI Unmatched Cases	
	WI CASES		OH COMPARISONS		WI CASES	
	49,811		49,811		1,125	
1%	$0		$0		$0	
0% Min	$0		$0			
Decile Distribution (P)						
Above State Rx Max (IL: >$23,466; WI: >$22,842)	0	0%	0	0%	0	0%
90-100th (IL: >$12,972 to $23,466; WI: >$12,588 to $22,842)	4,341	10%	7,491	17%	57	7%
80-90th (IL: >$11,772 to $12,972; WI: >$11,532 to $12,588)	4,357	10%	5,341	12%	69	8%
70-80th (IL: >$10,944 to $11,772; WI: >$10,752 to $11,532)	4,361	10%	4,129	10%	68	8%
60-70th (IL: >$10,224 to $10,944; WI: >$10,056 to $10,752)	4,378	10%	3,058	7%	85	10%
50-60th (IL: >$9,468 to $10,224; WI: >$9,312 to $10,056)	4,333	10%	2,588	6%	94	11%
40-50th (IL: >$8,628 to $9,468; WI: >$8,460 to $9,312)	4,298	10%	2,431	6%	118	14%
30-40th (IL: >$7,620 to $8,628; WI: >$7,344 to $8,460)	4,346	10%	3,179	7%	92	11%
20-30th (IL: >$6,300 to $7,620; WI: >$6,024 to $7,344)	4,358	10%	4,931	11%	81	10%
10-20th (IL: >$4,812 to $6,300; WI: >$4,800 to $6,024)	4,370	10%	4,425	10%	73	9%
0-10th (IL: $0 to $4,812; WI: $0 to $4,800)	4,330	10%	5,899	14%	105	12%
Family Size>1						
2001 Family SSA Payment (P)						

Appendix Table A-4 Profile of WI-OH Matched Cohort – Part 9

Profile of WI-OH Matched Cohort

D=Direct Matching Variable; P=Propensity Model Variable

**MCD variables updated to only capture those with full MCD benefits*

Based on full selection of state Rx participants (cases) and non-Rx participants (comparisons)
H:\S\Technology\RxDrugs\IllWIRxEvalCMS\Tasks4&5\[ILWI Propensity Matching 20061101.xls]WI-OH Matched

	WI-OH Matched Cohort				WI Unmatched Cases	
	WI CASES		OH COMPARISONS		WI CASES	
	49,811		49,811		1,125	
N	4,799		4,799		210	
Mean	$14,580		$14,833		$13,923	
100% Max	$24,240		$24,240		$23,580	
99%	$22,752		$23,580		$22,940	
95%	$20,292		$21,612		$21,324	
90%	$19,044		$19,800		$18,866	
75% Q3	$17,064		$17,412		$16,452	
50% Median	$14,760		$14,964		$13,812	
25% Q1	$12,048		$12,480		$11,144	
10%	$9,804		$9,972		$9,294	
5%	$8,652		$7,896		$8,120	
1%	$6,516		$3,696		$4,944	
0% Min	$0		$0		$0	
Decile Distribution (P)						
Above State Rx Max (IL: >$24,238; WI: >$24,240)	0	0%	0	0%	0	0%
90-100th (IL: >$19,806 to $24,238; WI: >$19,044 to $24,240)	478	10%	618	13%	20	10%
80-90th (IL: >$18,324 to $19,806; WI: >$17,652 to $19,044)	477	10%	485	10%	19	9%
70-80th (IL: >$17,232 to $18,324; WI: >$16,572 to $17,652)	495	10%	408	9%	9	4%
60-70th (IL: >$16,320 to $17,232; WI: >$15,660 to $16,572)	491	10%	518	11%	13	6%
50-60th (IL: >$15,540 to $16,320; WI: >$14,700 to $15,660)	483	10%	497	10%	17	8%

Appendix Table A-4 Profile of WI-OH Matched Cohort – Part 10

Profile of WI-OH Matched Cohort

D=Direct Matching Variable; P=Propensity Model Variable

**MCD variables updated to only capture those with full MCD benefits*

Based on full selection of state Rx participants (cases) and non-Rx participants (comparisons)
H:\S\Technology\RxDrugs\IllWIRxEvalCMS\Tasks4&5\[ILWI Propensity Matching 20061101.xls]WI-OH Matched

	WI-OH Matched Cohort				WI Unmatched Cases	
	WI CASES 49,811		OH COMPARISONS 49,811		WI CASES 1,125	
40-50th (IL: >$14,592 to $15,540; WI: >$13,692 to $14,700)	464	10%	537	11%	32	15%
30-40th (IL: >$13,464 to $14,592; WI: >$12,614 to $13,692)	487	10%	466	10%	20	10%
20-30th (IL: >$11,988 to $13,464; WI: >$11,316 to $12,614)	474	10%	433	9%	27	13%
10-20th (IL: >$9,900 to $11,988; WI: >$9,771 to $11,316)	475	10%	394	8%	27	13%
0-10th (IL: $0 to $9,900; WI: $0 to $9,771)	475	10%	443	9%	26	12%
Data Combinations						
Distribution according to the presence of SSA and/or Census Data (D)						
SSA Data=Y/Family Size=1/Census Data=Y/Dx Data=Y	35,846	72%	35,846	72%	548	49%
SSA Data=Y/Family Size=1/Census Data=Y/Dx Data=N	5,716	11%	5,716	11%	142	13%
SSA Data=Y/Family Size=1/Census Data=N/Dx Data=Y	1,733	3%	1,733	3%	124	11%
SSA Data=Y/Family Size=1/Census Data=N/Dx Data=N	177	0%	177	0%	28	2%
SSA Data=Y/Family Size>1/Census Data=Y/Dx Data=Y	4,124	8%	4,124	8%	147	13%
SSA Data=Y/Family Size>1/Census Data=Y/Dx Data=N	451	1%	451	1%	32	3%
SSA Data=Y/Family Size>1/Census Data=N/Dx Data=Y	214	0%	214	0%	24	2%
SSA Data=Y/Family Size>1/Census Data=N/Dx Data=N	10	0%	10	0%	7	1%
SSA Data=N/Census Data=Y/Dx Data=Y	1,324	3%	1,324	3%	41	4%
SSA Data=N/Census Data=Y/Dx Data=N	161	0%	161	0%	18	2%
SSA Data=N/Census Data=N/Dx Data=Y	53	0%	53	0%	12	1%

Appendix Table A-4 Profile of WI-OH Matched Cohort – Part 11

Profile of WI-OH Matched Cohort

Based on full selection of state Rx participants (cases) and non-Rx participants (comparisons)
H:\S\Technology\RxDrugs\IllWIRxEvalCMS\Tasks4&5\[ILWI Propensity Matching 20061101.xls]WI-OH Matched

D=Direct Matching Variable; P=Propensity Model Variable
**MCD variables updated to only capture those with full MCD benefits*

	WI-OH Matched Cohort				WI Unmatched Cases	
	WI CASES		OH COMPARISONS		WI CASES	
	49,811		**49,811**		**1,125**	
SSA Data=N/Census Data=N/Dx Data=N	2	0%	2	0%	2	0%
Propensity Matching						
Distribution according to type of propensity matching						
Exact	1,015	2%				
Within Decile Nearest Neighbor	47,162	95%				
General Nearest Neighbor	1,634	3%				
Absolute Difference in Propensity Scores between cases and comparisons						
N	49,811					
Mean	0.17418					
100% Max	2.52486					
99%	0.75928					
95%	0.55522					
90%	0.40941					
75% Q3	0.24024					
50% Median	0.13734					
25% Q1	0.02924					
10%	0.00021					
5%	0.00004					
1%	0.00000					
0% Min	0.00000					

Medicare Savings*: *First Difference Model Regression Results

Appendix Table A- 5. Coefficients and standard errors from first difference model using quarterly data for Illinois-OH first month cohorts

$Outcome_{it} = \beta_1 \Delta\, Age\ squared_{it} + \beta_2 \Delta\, program_{it} + \beta_3 \Delta\, program_{it-2} + \beta_4 \Delta\, program_{it-3} + \beta_5 \Delta\, program_{it-4} + \beta_6 \Delta\, program_{it-5} + \delta \Delta\, quarter_t$

Coefficient	(1) Medicare Spending	(2) Inpatient days	(3) Any inpatient utilization
Δ Age squared	0.000	0.000***	0.000***
	(0.000)	(0.000)	(0.000)
Δ program $_{it}$	32.725	0.007	0.002
	(27.098)	(0.012)	(0.001)
Δ program $_{it-1}$	4.862e+01*	3.487e-02***	1.815e-03
	(2.705e+01)	(1.256e-02)	(1.405e-03)
Δ program $_{it-2}$	-61.782**	-0.003	-0.002
	(27.056)	(0.014)	(0.001)
Δ program $_{it-3}$	15.648	-0.003	0.000
	(27.883)	(0.016)	(0.002)
Δ program $_{it-4}$	-21.088	-0.020	-0.002
	(27.926)	(0.016)	(0.002)
Δ program $_{it-5}$	5.023	0.028*	0.001
	(28.015)	(0.015)	(0.002)
Δ quarter 3	9.954	0.026***	0.004***
	(20.599)	(0.009)	(0.001)
Δ quarter 4	45.275	0.084***	0.011***
	(32.681)	(0.015)	(0.002)
Δ quarter 5	233.777***	0.133***	0.018***
	(44.615)	(0.020)	(0.002)
Δ quarter 6	252.539***	0.127***	0.017***
	(57.879)	(0.026)	(0.003)
Δ quarter 7	376.315***	0.189***	0.023***
	(69.773)	(0.031)	(0.004)
Δ quarter 8	474.396***	0.331***	0.037***
	(81.586)	(0.037)	(0.004)
Δ quarter 9	656.406***	0.394***	0.046***
	(93.564)	(0.042)	(0.005)
Δ quarter 10	662.997***	0.372***	0.044***
	(105.376)	(0.047)	(0.006)
Δ quarter 11	716.998***	0.372***	0.046***
	(117.451)	(0.053)	(0.006)
Σ Δ program	14.120	.0145	.000
Observations	2139685	2142220	2142220

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix Table A-6. Coefficients and standard errors from first difference model using quarterly data for Illinois-OH first month and later month cohorts

$Outcome_{it} = \beta_1 \Delta\, Age\ squared_{it} + \beta_2 \Delta\, program_{it} + \beta_3 \Delta\, program_{it-2} + \beta_4 \Delta\, program_{it-3} + \delta \Delta\, quarter_t$

Coefficient	(1) Medicare Spending	(2) Inpatient days	(3) Any inpatient utilization
Δ Age squared	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)
Δ program $_{it}$	-17.126	-0.010	-0.001
	(24.742)	(0.011)	(0.001)
Δ program $_{it-1}$	4.174e+01*	3.055e-02***	1.479e-03
	(2.466e+01)	(1.148e-02)	(1.272e-03)
Δ program $_{it-2}$	-57.567**	-0.003	-0.002*
	(24.789)	(0.013)	(0.001)
Δ program $_{it-3}$	12.704	0.002	0.000
	(25.379)	(0.014)	(0.001)
Δ quarter 3	9.572	0.024***	0.003***
	(18.338)	(0.008)	(0.001)
Δ quarter 4	72.124**	0.082***	0.011***
	(29.102)	(0.013)	(0.002)
Δ quarter 5	244.981***	0.121***	0.017***
	(39.698)	(0.018)	(0.002)
Δ quarter 6	274.713***	0.120***	0.016***
	(51.540)	(0.023)	(0.003)
Δ quarter 7	381.100***	0.179***	0.021***
	(62.058)	(0.028)	(0.003)
Δ quarter 8	472.231***	0.300***	0.033***
	(72.594)	(0.033)	(0.004)
Δ quarter 9	608.812***	0.337***	0.038***
	(83.177)	(0.037)	(0.005)
Σ Δ program	-20.253	.019	-.001
Observations	2065855	2068528	2068528

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix Table A-7. Coefficients and standard errors from first difference model using quarterly data for WI-OH first month cohorts

$Outcome_{it} = \beta_1 \Delta Age\ squared_{it} + \beta_2 \Delta program_{it} + \beta_3 \Delta program_{it-2} + \beta_4 \Delta program_{it-3} + \beta_5 \Delta program_{it-4} + \delta \Delta quarter_t$

Coefficient	(1) Δ Medicare Spending	(2) Δ Inpatient days	(3) Δ Any inpatient
Δ Age squared	-0.000	0.000**	0.000***
	(0.000)	(0.000)	(0.000)
Δ program $_{it}$	32.110	0.028	0.004*
	(47.329)	(0.021)	(0.003)
Δ program $_{it-1}$	-8.393e+00	-1.651e-02	1.013e-03
	(4.850e+01)	(2.385e-02)	(2.615e-03)
Δ program $_{it-2}$	-8.852	0.003	-0.002
	(50.081)	(0.026)	(0.003)
Δ program $_{it-3}$	-53.926	-0.026	-0.005*
	(49.140)	(0.027)	(0.003)
Δ program $_{it-4}$	-53.767	0.006	0.002
	(47.434)	(0.025)	(0.003)
Δ quarter 3	-11.223	0.007	-0.002
	(35.964)	(0.016)	(0.002)
Δ quarter 4	13.861	0.058**	0.004
	(56.922)	(0.025)	(0.003)
Δ quarter 5	222.223***	0.122***	0.009**
	(77.411)	(0.034)	(0.004)
Δ quarter 6	259.371***	0.115***	0.009*
	(97.770)	(0.043)	(0.005)
Δ quarter 7	368.212***	0.147***	0.007
	(120.525)	(0.053)	(0.007)
Δ quarter 8	458.193***	0.297***	0.019**
	(141.770)	(0.062)	(0.008)
Δ quarter 9	616.708***	0.334***	0.022**
	(162.564)	(0.072)	(0.009)
Δ quarter 10	635.673***	0.307***	0.020**
	(183.167)	(0.081)	(0.010)
Δ quarter 11	687.371***	0.314***	0.018
	(204.545)	(0.090)	(0.011)
Σ Δ program	-92.828*	-.006	-1.65e-06
Observations	665766	666860	666860

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix Table A- 8. Coefficients and standard errors from first difference model using quarterly data for WI-OH first month and later month cohorts

$Outcome_{it} = \beta_1 \Delta\, Age\ squared_{it} + \beta_2 \Delta\, program_{it} + \beta_3 \Delta\, program_{it-2} + \delta \Delta\, quarter_t$

	(1)	(2)	(3)
Coefficient	**Δ Medicare Spending**	**Δ Inpatient days**	**Δ Any inpatient**
Δ Age squared	0.000	0.000***	0.000***
	(0.000)	(0.000)	(0.000)
Δ program $_{it}$	-63.436	-0.013	-0.003
	(39.269)	(0.018)	(0.002)
Δ program $_{it-1}$	-5.116e+01	-2.585e-02	7.132e-04
	(3.965e+01)	(1.990e-02)	(2.152e-03)
Δ program $_{it-2}$	-23.093	-0.007	-0.004*
	(40.143)	(0.021)	(0.002)
Δ program $_{it-3}$	-47.824	-0.021	-0.004*
	(40.377)	(0.021)	(0.002)
Δ quarter 3	10.942	0.021	0.000
	(29.024)	(0.013)	(0.002)
Δ quarter 4	69.490	0.082***	0.007***
	(45.945)	(0.020)	(0.003)
Δ quarter 5	261.992***	0.131***	0.011***
	(62.665)	(0.027)	(0.003)
Δ quarter 6	352.474***	0.156***	0.015***
	(78.976)	(0.035)	(0.004)
Δ quarter 7	461.557***	0.204***	0.016***
	(97.420)	(0.043)	(0.005)
Δ quarter 8	552.088***	0.330***	0.027***
	(114.489)	(0.051)	(0.006)
Δ quarter 9	694.777***	0.359***	0.030***
	(131.130)	(0.058)	(0.007)
Δ quarter 10	728.250***	0.337***	0.028***
	(147.866)	(0.065)	(0.008)
Σ Δ program	-185.513***	-.066***	-.010 ***
Observations	893413	895032	895032

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix 6: Appendix Tables for Medicaid Entry

Appendix Table B-1: Proportion Entering Medicaid among All SeniorCare Enrollees

	IL Enrollees	OH Comparisons	WI Enrollees	OH Comparisons
N	129,283	129,283	49,724	49,724
Total Observation Time (months)[†]	16	16	13	13
Medicaid Entry[§]	8,068	5,238	2,196	1,292
	6.2%	4.1%	4.4%	2.6%
Regression-adjusted Odds of Medicaid Entry[§]	1.58	1.00	1.76	1.00
Nursing Home Entry	1,497	1,761	684	408
	1.2%	1.4%	1.4%	.8%
Regression-adjusted Odds of Nursing Home Entry	.94[#]	1.00	1.81[§]	1.00
Percent Medicaid Entrants in Nursing Homes	18.6%	33.6%	31.1%	31.6%

[†]Medicaid entry is observed from start of programs through September 2003.

[§]Differences between enrollees and comparisons are significant at p<.001.

[#]Significant only at p<.13

Appendix Table B-2: Illinois: Medicaid Expenditures through September 2003 for those with Medicaid Entry (Illinois-OH Matched Cohort)

Item	IL CASES	OH COMPARISONS	% Difference IL vs. OH
All			
N	8,068	5,238	54.0%
Months of MCD Eligibility through Sep 2003	49,840	35,148	41.8%
Total MCD Expenditures	$26,057,998	$63,930,753	-59.2%
MCD Expenditures per MCD Eligible Month	$523	$1,819	-71.3%
Net: Less average program monthly expense ($116)	$407		
Net for all participants in group	$20,276,558	$63,930,753	-68.3%
Rollover (Index = June 2002)			
N	6,951	4,430	56.9%
Months of MCD Eligibility through Sep 2003	44,319	30,345	46.1%
Total MCD Expenditures	$24,108,114	$57,333,874	-58.0%
MCD Expenditures per MCD Eligible Month	$544	$1,889	-71.2%
Net: Less average program monthly expense ($116)	$428		
Net for all participants in group	$18,967,110	$57,333,874	-66.9%
New Entrants (Index > June 2002)			
N	1,117	808	38.2%
Months of MCD Eligibility through Sep 2003	5,521	4,803	14.9%
Total MCD Expenditures	$1,949,884	$6,596,880	-70.4%
MCD Expenditures per MCD Eligible Month	$353	$1,373	-74.3%
Net: Less average program monthly expense ($116)	$237		
Net for all participants in group	$1,309,448	$6,596,880	-80.2%
Buy-in in Index Month			
N	2,592	1,991	30.2%
Months of MCD Eligibility through Sep 2003	18,620	13,220	40.8%
Total MCD Expenditures	$6,152,404	$16,374,815	-62.4%
MCD Expenditures per MCD Eligible Month	$330	$1,239	-73.3%
Net: Less average program monthly expense ($116)	$214		
Net for all participants in group	$3,992,484	$16,374,815	-75.6%

Appendix Table B-3: Wisconsin: Medicaid Expenditures through September 2003 for those with Medicaid Entry (WI-OH Matched Cohort

Item	WI Cases	OH Comparisons	% Difference WI vs. OH
All			
N	2,196	1,292	70.0%
Months of MCD Eligibility through Sep 2003	11,554	7,004	65.0%
Total MCD Expenditures	$12,564,200	$10,520,330	19.4%
MCD Expenditures per MCD Eligible Month	$1,087	$1,502	-27.6%
Net: Less average program monthly expense ($86)	$1,001		
Net for all participants in group	$11,570,556	$10,520,330	10.0%
Start-up (Index = September 2002)			
N	1,471	957	53.7%
Months of MCD Eligibility through Sep 2003	8,078	5,319	51.9%
Total MCD Expenditures	$8,817,589	$7,894,774	11.7%
MCD Expenditures per MCD Eligible Month	$1,092	$1,484	-26.5%
Net: Less average program monthly expense ($86)	$1,006		
Net for all participants in group	$8,122,881	$7,894,774	2.9%
New Entrants (Index > September 2002)			
N	725	335	116.4%
Months of MCD Eligibility through Sep 2003	3,476	1,685	106.3%
Total MCD Expenditures	$3,746,610	$2,625,556	42.7%
MCD Expenditures per MCD Eligible Month	$1,078	$1,558	-30.8%
Net: Less average program monthly expense ($86)	$992		
Net for all participants in group	$3,447,674	$2,625,556	31.3%
Buy-in in Index Month			
N	227	405	-44.0%
Months of MCD Eligibility through Sep 2003	1,096	2,336	-53.1%
Total MCD Expenditures	$536,497	$2,662,294	-79.8%
MCD Expenditures per MCD Eligible Month	$490	$1,140	-57.0%
Net: Less average program monthly expense ($86)	$404		
Net for all participants in group	$442,241	$2,662,294	-83.4%

Appendix 7: Task 1-I: Program Description and Process Evaluation: Illinois

Illinois SeniorCare Program Description*

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Executive Summary of Illinois Implementation Report

Illinois SeniorCare is a five-year demonstration project funded through a Medicaid 1115 demonstration, and the first state pharmacy assistance program started through the Centers for Medicare & Medicaid Services (CMS) Pharmacy Plus program. Illinois SeniorCare provides outpatient prescription drug assistance to low-income seniors in the state of Illinois who are not enrolled in Medicaid. As part of the Medicaid expansion 1115 demonstration agreement terms and conditions for funding the Illinois SeniorCare program, the state of Illinois agreed to budget neutrality (to spend no more in Medicaid services expenditures for enrollees age 65 and older than it would have without SeniorCare), by the end of five years.

Illinois SeniorCare began operation on June 1, 2002, and as of December 2, 2003, it covers 172,333 seniors.[12] As part of a CMS mandated evaluation of the Illinois SeniorCare demonstration, which will examine SeniorCare costs, access, and its impact on Medicaid and Medicare expenditures, Brandeis researchers conducted site visits to Springfield in January 2003, and followed up with phone interviews and background documentation in order to prepare a description of the program. The aim of this paper is to summarize our understanding of the program and its features, its history and its first year of implementation, and identify challenges and key issues for the broader evaluation. Thus, this is a background document with more analytical reports to follow.

Illinois SeniorCare is run by the Illinois Department of Public Aid (DPA) Medical Programs Division in conjunction with the Illinois Department of Revenue (IDR). It covers individuals age 65+ whose incomes are at or below 200 percent of the federal poverty level (FPL), are U.S. citizens or eligible noncitizens, and are not enrolled in Medicaid. IDR conducts all intake and enrollment related activities for SeniorCare, and DPA oversees all program activities. In the first year of SeniorCare operations, an outside entity was involved, Express-Scripts Inc. (ESI), a pharmacy benefit manager (PBM) that administered the SeniorCare benefit and processed claims. The contract with ESI ended on June 30, 2003 and was not renewed. Claims processing and drug management activities are now being conducted for Illinois SeniorCare through the Illinois Medicaid program.

Illinois SeniorCare is an expansion of an earlier program, Circuit Breaker (CB) Prescription Assistance Program (PAP). Circuit Breaker is an IDR program started in 1979 in Illinois (as well as many other states) to provide property tax relief for low-income seniors. In 1985, a prescription assistance program was added to Illinois Circuit Breaker, which gradually grew in size and scope, providing prescription drug coverage for designated chronic diseases. SeniorCare represents an expansion of benefits beyond PAP; its coverage is not limited to certain chronic diseases; it covers all medications in the Medicaid formulary including some over the counter (OTC) drugs.

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[12] This includes 166,040 individuals receiving SeniorCare drug benefits, and 6,293 taking a $25 per month rebate if they are eligible for SeniorCare and do not take the insurance.

When the SeniorCare demonstration program began operation, all members of CB-PAP who were age 65 or older with incomes up to 200 FPL and below (and not enrolled in Medicaid) were rolled over into the SeniorCare program, and now CB-PAP (a state-only financed program) only covers those individuals who are aged or disabled under age 65, at specified dollar income levels between 200 percent and approximately 250 percent FPL (approximately 50,000 members). Individuals must re-enroll in SeniorCare or Circuit Breaker each year.

As of the first "year" of operation (June 1, 2002-June 30, 2003[13]), Illinois Senior Care implementation has followed the design laid out in the operational protocol that Illinois Department of Public Aid submitted to CMS as part of its demonstration. As of the end of the first full fiscal year of the program (through June 30, 2003), 174,250 individuals enrolled, including: 121,000 "roll over members" from Circuit Breaker PAP,[14] 47,782 new enrollees, and 5,468 taking the rebate. SeniorCare program expenditures for the full fiscal year of operation (July 1, 2002 through June 30, 2003) were $215 million total as of June 30, 2003 (not including an additional savings of approximately 21% in price rebates from drug manufacturers). Costs of the first year of Illinois SeniorCare are close to initial state demonstration projections for the first year of the program of $193 million (excluding rebate savings), which were based on estimates calculated early in the demonstration approval process for an initial 12-month period.[15]

Illinois SeniorCare has succeeded in providing outpatient prescription drug benefits to a large number of the state's low-income seniors, within the cost originally anticipated. Several issues emerged, however, during the first year of operation, and some significant changes have been made to the program in its first year. These issues either have been resolved, or are now being addressed, and will be the focus of further analysis during this evaluation. They include: initial problems with customer assistance in enrollment related to communication problems with the public and the dual involvement of IDR and DPA; program shift from use of PBM services to internal management of the benefit through the Medicaid program after the first year of operation; and lower-than-expected re-enrollment by initial SeniorCare members, which necessitated extension of their June 2003 reenrollment deadline by three months, and warranted increased outreach efforts. By October 2003, all but 2600 of the individuals who were granted extensions and still eligible for SeniorCare (and still using the benefits) had re-enrolled in the program. The Medicare Prescription Drug Improvement and Modernization Act enacted in December 2003 is designed to provide prescription drug coverage for a portion of seniors covered through Illinois SeniorCare. At present, the Illinois DPA is reviewing the impact this will have on the program.

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[13] Even though SeniorCare became operational on June 1, 2002, the first program year was adjusted to end on June 30, 2003, so that the SeniorCare program year will correspond with the Illinois state fiscal year (SFY) (July 1- June 30). The remainder of this report and all tables refer to statistics as they are reported by the state (usually from July 1, 2002 through June 30, 2003); exact time periods are noted along with statistics in each table and text.

[14] Some members of Circuit Breaker PAP who were "rolled over" into SeniorCare had joined PAP in the months prior to implementation of SeniorCare, expressly in anticipation of becoming SeniorCare members.

[15] See full estimate calculations at www.cms.hhs.gov//medicaid/1115/ilrxbudgetnew.pdf.

Introduction

This report, describing the Illinois SeniorCare demonstration program's development and its first year of implementation, is part of a Centers for Medicare & Medicaid Services (CMS)-sponsored multi-year evaluation of Illinois SeniorCare. The overall evaluation of the Illinois SeniorCare program, conducted by a team from Brandeis University, is charged with examining several aspects of the program, including its design, implementation, cost and utilization patterns, impact on low-income seniors in Illinois, and impact on the state Medicaid budget and Medicare costs for enrollees.

In order to prepare a description of the Illinois SeniorCare program in its first year, Brandeis researchers conducted a site visit to Springfield on January 16-17, 2003. During the site visit, we interviewed SeniorCare officials and representatives of other state and external agencies that have been affiliated with SeniorCare, and obtained consumer perspectives on the program and its implementation. These interviews were followed up with additional series of phone interviews and review of background documentation. The purpose of this paper is to summarize our understanding of the Illinois SeniorCare demonstration program, its history, its design, and its first year of implementation, and to identify challenges and key issues for the evaluation.

Background: Origin of Illinois SeniorCare

The Circuit Breaker Pharmacy Assistance Program (CB-PAP)

Prior to SeniorCare's implementation, Illinois had a state pharmacy assistance program in place connected to its Circuit Breaker tax relief program. The main purpose of the Circuit Breaker program has been to provide relief to low-income seniors and the disabled from the burden of property taxes and rent.[16] Eligibility for Circuit Breaker is based on income and property taxes or rent, and is administered by the Illinois Department of Revenue (IDR). Income levels for eligibility for Circuit Breaker and its associated programs are dollar amounts set by statute; the income limit for the program was $21,218 for a single individual in SFY 2003, approximately 250 percent of the federal poverty level (FPL).

[16] Circuit Breaker tax relief programs were started in many states in the 1970's to address the needs of low-income residents. There are now 35 states with Circuit Breaker programs. Circuit Breaker sets an upper limit on the percent of income that a residential homeowner is required to pay in taxes on an owner-occupied residence, and in some cases (Illinois included) provides rent relief for low-income residents who do not own property.

Appendix Table I-1.1: Timeline of Illinois Circuit Breaker Pharmacy Assistance Program growth[17]

Years	Change
1979	Illinois Circuit Breaker program for tax relief for low-income seniors initiated: Income limit for singles = $10,000
1985	Pharmacy Assistance Program (PAP) added to Circuit Breaker, covering cardiovascular medications only
1987	PAP expanded to cover arthritis and diabetes
1992-1993	Modifications to benefit: Cap of $800 for prescription drugs added, then changed to percent coverage after $800, and deductible of $25 per month. Single benefit changed to several levels based on income. Copayment up to $10, and annual fee up to $80.
1998	Income limit for single = $16,000 (gradually increased each year)
2000	Income limit for single raised to $21,218 (near 250% FPL), several levels of eligibility defined
2001	Major eligibility and coverage changes: Added Alzheimer's disease, cancer, glaucoma, lung disease, smoking related illnesses, Parkinson's disease, osteoporosis. Annual fee decreased, copayments reduced, and cap increased to $2,000. Brand drugs with equivalent generics are covered if physician writes "Dispense as Written." Eligibility now based on projected income.

Although Circuit Breaker Property Tax Assistance began in 1979 as a tax and rent relief program, in 1985 it added the Pharmaceutical Assistance Program (PAP) as a result of consultation with pharmacists and the Department of Public Health regarding the most common and burdensome diseases in terms of outpatient medication needs. The General Assembly of Illinois sets both the income threshold and covered diseases eligible under CB-PAP. Initially in 1985, PAP covered only medications for cardiovascular disease. As Table I-1.1 shows, the legislature added more chronic illnesses to the covered list over time and expanded eligibility, with a major increase in the number of drugs covered occurring in 2001.

Diseases included for pharmacy coverage in CB-PAP represent several chronic conditions with the most prominent medication utilization. However, mental illness is not a covered disease in CB-PAP. Neither is ulcer disease, a very common condition treated with some of the most expensive outpatient medications. Outpatient drugs commonly used by seniors for episodes of acute illness are also not covered, regardless of expense, but selected over the counter drugs for covered diseases are. Since the program began, the Illinois General Assembly has also raised the dollar income threshold several times (eligibility is not automatically adjusted for inflation or for

[17] Source: Illinois Department of Revenue, Circuit Breaker Tax Relief and Pharmaceutical Assistance Programs, 2002 Annual Report.

changes in FPL). The PAP pharmacy benefit has developed independently of the Medicaid pharmacy benefit (with a separate formulary and somewhat different pharmacy network), and the IDR has utilized a third party claims processor for CB-PAP (Express Scripts, Inc., a major national PBM) since inception of the program.

IDR has seen a big increase in requests for pharmacy assistance through the Circuit Breaker program in just the past few years. According to program officials, the proportion of Circuit Breaker applicants who also seek prescription assistance (by checking off a box in the Circuit Breaker application) grew from 17 percent in 1999 to 48 percent in 2001. Increasing enrollment, increasing numbers of drugs consumed as the range of covered diseases was increased, and increasing prices for prescription drugs have combined to lead to burgeoning cost of the program. In 1997 Circuit Breaker Pharmacy Assistance covered drugs cost $31.6 million with 52,000 enrollees, and by 2002, after major expansions in 2001 (and prior to implementation of SeniorCare), CB-PAP cost $140 million, with nearly 200,000 enrollees.[18]

Goals and Development of the Senior Care Demonstration Application

Circuit Breaker PAP is a state-funded program, with limited coverage, and no Federal matching funds. According to SeniorCare program managers, state officials reasoned that there was little hope of improvement in the budget outlook for this program, because the population base of relatively sick elders was likely to grow with the aging of the general population, the formulary would likely continue to expand, and the cost of pharmaceuticals was sure to increase. The potential for a Federal match through a demonstration program provided an opportunity to find a financing partner while expanding coverage to include a broader array of important pharmaceuticals. Senior members of the Division of Medical Programs developed the idea of applying for a Medicaid 1115 demonstration in discussions with the state budget office as Circuit Breaker-PAP was becoming increasingly costly.

The initial conceptualization, budget neutrality projections, and data analyses were conducted by the DPA Division of Medical Programs (DMP). The goal of the demonstration approach and basis for budget neutrality projections was to improve health outcomes and to allow individuals remain in the community and be diverted from institutional care and Medicaid. Goals of the SeniorCare program, as stated in the initial 1115 demonstration application submitted by Illinois were as follows:[19]

- To help preserve health of the senior population by providing financial assistance for costly but essential drugs, thereby providing a more comprehensive primary care benefit
- Improve the quality of life of Illinois' seniors, thereby allowing them to remain in less costly home settings and avoid expensive acute or long-term care services resulting from a lack of access to necessary drugs

[18] Source: Illinois Department of Revenue, Circuit Breaker Tax Relief and Pharmaceutical Assistance Programs, 2002 Annual Report.

[19] See CMS website, (http://ww.cms.gov/medicaid/1115/ilrxap.pdf).

- Reduce the speed at which seniors "spend down" and become entitled to all benefits available through the Medicaid program
- Reduce Medicaid expenditures for the dual-eligible population
- Save the Federal government money by improving the health of seniors, resulting in savings to the Medicare program.

In initial development of the demonstration application, DPA officials projected that the benefit would cost about $1,500 per person per year, net of patient cost sharing and rebates. In Illinois, institutional care costs $32,000 to $33,000 per year. The annual cost of prescription drug coverage is only about five percent of the annual cost of institutional care. Thus, this relationship meant that if SeniorCare could divert even a few near-poor elders from entering a nursing home, it would save considerable money for Medicaid.

DMP began discussing the SeniorCare demonstration in early 2001, and had considerable support on both policy and financial grounds. AARP, as an example, was a strong supporter of the demonstration, as were state legislators.

The demonstration application was submitted in July 2001 and approved in January 2002. Illinois originally requested an eligibility level for the SeniorCare demonstration of up to 250 percent of FPL but CMS approved an eligibility level at or below 200 percent FPL. The approval of a lower eligibility criterion factors in several ways. First, as income levels grow, it is presumed that seniors are more likely to have their own resources, are better able to afford private prescription drug coverage. Second, individuals at a higher income are less likely to enter Medicaid, and the budget neutrality cost model is built upon the premise the demonstration enrollees would have become Medicaid eligible. Other demonstration projects in CMS are approved at this ceiling for a similar reason. Third, a lower eligibility level reduces the cost of the program to CMS. Illinois DPA still believes that it would be cost effective to Medicaid to provide coverage to individuals at higher income levels, and has a pending request to CMS with supporting data to expand eligibility of SeniorCare to 250 percent FPL.

The demonstration as approved was designed to require "maintenance of effort" – the state would still pay as much for prescription drugs for seniors as it had before. This level was easily maintained, because the state was responsible not only for fifty percent of the cost of an expanded drug list for the eligible seniors, but also for the full cost of CB-PAP, which still covered the disabled and individuals age 65 and older between 200 percent and approximately 250 percent FPL.

Expansion of Benefits: from Circuit Breaker Prescription Assistance to Illinois SeniorCare

The Circuit Breaker Program is still in effect for disabled non-elderly up to 250 percent FPL, and for seniors between 200 percent and 250 percent FPL. Table I-1.2 lists differences in program features between CB-PAP and Illinois SeniorCare, as of September 2003. The major expansion of Illinois SeniorCare over CB-PAP is its coverage of all outpatient prescription drugs, not just those for specified conditions as in CB-PAP.

Appendix Table I-1.2: Summary of differences in major features between Circuit Breaker Pharmacy Assistance Program and Illinois SeniorCare[20]

Features	Circuit Breaker Pharmacy Assistance Program (CB-PAP)	Illinois SeniorCare
Eligibility	Disabled up to 250% FPL, Aged between 200-250% FPL.	Aged at or below 200% FPL and not eligible for Medicaid pharmacy benefits
	Do not have to be citizen, must be resident	Must be resident and citizen or qualified equivalent
Members (as of 9/30/2003)	50,000	185,000
Program management	Illinois Department of Revenue	Illinois Department of Revenue and Illinois Department of Public Aid
Formulary – diseases covered	Alzheimer's Disease, Arthritis, Cancer, Cardiovascular, Diabetes, Glaucoma, lung disease and smoking related illness, Osteoporosis, Parkinson's Disease (not restricted to Medicaid rebatable drugs)	All diseases/ Medicaid formulary/specified OTC drugs
Enrollment fee	$5 or $25 (income based)	None
Benefits – member cost sharing	$3 for all prescriptions (waived for income <100% FPL)	$1 for generic, $4 for brand (waived for income <100% FPL)
Maximum annual benefit	$2,000 drug expenditures "soft cap" after which copay[21] + 20% coinsurance	$1,750 drug expenditures "soft cap" after which copay[1] + 20% coinsurance
Claims administration	Pharmacy Benefits Manager (ESI)	Illinois Medicaid
Incentive to keep private insurance	None	$25 monthly rebate if eligible but do not join
Estimated annual program costs for state fiscal year (through June 30, 2003)	$65 million (not net rebates)[22] $64.4 million estimated including rebates	$215 million (not net manufacturer rebates).[23] For first full fiscal year of program through 6/30/03. Approximately $178 million estimated by program including effect of manufacturer drug rebates.

[20] Source: Illinois Department of Revenue, Circuit Breaker Tax Relief Program and Pharmaceutical Assistance Program 2002 Annual Report, and interviews with DPA officials.

[21] Copayment waived for low-income individuals, but 20% coinsurance still required.

[22] Circuit Breaker PAP manufacturer rebates are approximately one percent overall.

[23] SeniorCare manufacturer rebates are approximately 21 percent overall.

Design of the Illinois SeniorCare Program

Illinois SeniorCare Eligibility

Table I-1.3 details the current eligibility requirements for Illinois SeniorCare, with Illinois Circuit Breaker Prescription Assistance program and Illinois Medicaid program as comparisons:

Appendix Table I-1.3: Detailed eligibility criteria for Illinois Medicaid, Illinois Circuit Breaker Pharmacy Assistance, and Illinois SeniorCare[24]

	Illinois Medicaid program	CB-PAP	Illinois SeniorCare
Age 65+	Yes	Yes	Yes
Disabled under age 65	Yes	Yes	No
Percent FPL eligibility	0-100% FPL	At or below approximately 250% FPL	At or below 200% FPL
Income level eligibility (2003)	Up to $8,980 single, $12,120 married	Up to $21,218 single/ $28,480 married	Up to $17,960 single/ $24,240 married
Asset test	Yes ($2,000 for an individual)	No	No
Illinois resident	Yes	Yes	Yes
U.S. citizen	Citizen or qualified resident	Citizen or qualified resident	Citizen or qualified resident

To summarize the differences in eligibility between Illinois SeniorCare and Circuit Breaker Prescription Assistance Program, SeniorCare covers seniors age 65+ with incomes at or below 200 percent FPL and not eligible for Medicaid, due to income above 100% FPL or income below 100% FPL but with assets above the Medicaid threshold. Illinois SeniorCare does not cover the disabled under age 65. In contrast, CB-PAP covers seniors age 65+ between approximately 200 and 250 percent FPL, and the disabled under age 65 with income up to 250 percent FPL. The application form is the same for both programs, and when submitted, IDR assigns the individual to the appropriate program. The application does not require information about assets, nor does it evaluate Medicaid eligibility. If an individual appears likely to be Medicaid eligible, the individual will be referred to Medicaid.

[24] Source: Illinois Department of Revenue, Circuit Breaker Tax Relief Program and Pharmaceutical Assistance Program 2002 Annual Report, and interviews with DPA officials.

SeniorCare Program Administration

As noted, Illinois SeniorCare is a joint program of the Illinois Department of Public Aid Division of Medical Programs and the Illinois Department of Revenue. IDR conducts all intake and enrollment related activities for SeniorCare, and DPA oversees all program activities. Policy makers named several reasons for using the Illinois Department of Revenue for the SeniorCare demonstration program rather than designing a new enrollment process within DPA:

- Because CB-PAP enrollment was determined through the Department of Revenue, it was logical that the responsibility for enrollment in the associated Pharmacy Assistance Program was also the responsibility of IDR.
- A single application for both property tax relief and pharmacy assistance would make the process simpler for poor elders.
- A DPA process would have required development of a separate unit with DPA
- A DPA application process would have required clients to apply to the local human services office, and the application for Senior Care would have been embedded within a cumbersome and complex welfare intake system encompassing many programs; officials wanted to have Senior Care viewed as separate from Medicaid, and did not want seniors to have to visit welfare office to enroll.
- The IDR already has established procedures and data sources for verification of income and citizenship.

Within the DPA, several divisions that support Illinois Medicaid are also involved in SeniorCare operations, including: the Bureau of Technical Support, Bureau of Comprehensive Health Services, Bureau of Rate Development and Analysis Bureau of Medical Administrative Support, Bureau of Program Reimbursement Analysis, and the Bureau of Contract Management. The function of each division is described in detail in the SeniorCare operational protocol submitted as part of the Medicaid 1115 demonstration agreement.

As the program was being designed, according to Illinois SeniorCare officials, several PBMs expressed interest in management and claims administration for Illinois SeniorCare. The decision to go with ESI to administer the drug benefit was based on to two main factors: 1) PBMs paid much lower prices to pharmacies than did Medicaid; and 2) ESI was already the PBM for Circuit Breaker Pharmacy Assistance Program. The state could modify the ESI contract without a lengthy bidding process, saving both time and money. The relationship between DPA and Express Scripts Inc. during the first year of operation, is detailed in the following sections of the report. Several of the above divisions within DPA have now taken on some of the tasks originally conducted by the PBM claims administration, drug management, and member support, as described below.

Illinois SeniorCare Benefit Design Development

The SeniorCare benefit is designed to provide enrollees with incentives toward lower cost drug choices (through tiered copayments and higher cost sharing beyond a dollar limit), but give first dollar help to enrolled seniors. Thus, Illinois SeniorCare has several design strengths that

officials believe will lower the cost risk for the demonstration, and that reflect what they viewed as an improvement in terms of cost management incentives over Circuit Breaker PAP.

The SeniorCare enabling legislation mandated that SeniorCare could be no more restrictive than Circuit Breaker PAP, and eliminating an enrollment fee was balanced by lowering the "soft cap" from $2,000 to $1,750.[25] The $1 and $4 copayments per one-month prescription average close to $3, which is the CB-PAP copayment for all drugs. SeniorCare has the same network pharmacies as are in the Medicaid network. The SeniorCare benefit is shown in Table I-1.4, with differences by income level noted in **boldface** type.

[25] The "soft cap" is a threshold of individual member drug spending in both Illinois CB-PAP and Illinois SeniorCare, beyond which members pay a higher copayment for prescriptions.

Appendix Table I-1.4: Illinois Senior Care Pharmacy Benefit Description

Item	Individuals up to 100% FPL	Individuals above 100% FPL
Enrollment fee	None	None
Covered prescriptions	All Medicaid formulary prescriptions	All Medicaid formulary prescriptions
Covered over the counter (OTC) medications	With MD prescription: analgesics, antacids, laxatives, stool softeners, smoking cessation products	With MD prescription: analgesics, antacids, laxatives, stool softeners, smoking cessation products
Copayment	None	**$1 generic, $4 brand**
Maximum benefit	**$1,750 "soft cap" per person; above that amount, member pays 20 percent of the drug ingredient cost.**	**$1,750 "soft cap" per person; above that amount, member pays the copayment ($1 or $4) plus 20 percent of the drug ingredient cost.**
Pharmacy network	All Illinois Medicaid enrolled pharmacies	All Illinois Medicaid enrolled pharmacies
Additional feature to discourage dropping private insurance (discourage "crowd out")	**none**	**$25 monthly rebate for eligible seniors who have other coverage and do not choose to enroll in the benefit program**

The "soft cap" is designed to encourage seniors to limit overall drug expenditures (choose lower cost drugs to postpone higher cost sharing level). It also restrains program costs by increasing member share at higher expenditure levels. SeniorCare officials also thought that the absence of an enrollment fee, along with first dollar coverage, would encourage relatively healthy individuals to join the program.

Illinois SeniorCare also has a feature intended to limit the number of individuals who might drop private coverage to join SeniorCare. This is called the "SeniorCare rebate"[26] and offers applicants eligible for SeniorCare $25 per month if they are willing to forego enrollment in the

[26] This use of the term "rebate," should be distinguished from its use in several sections of this paper with reference to pharmaceutical "manufacturer rebates, " or payments to insurers to lower the aggregate cost of particular prescription drugs.

program and maintain their private coverage.[27] The rebate amount was calculated based on an assumption that the senior's share of a prescription drug insurance premium is about twenty percent. Thus, if the overall premium for private prescription drug insurance were about $1,500 or $125 per month, the senior's share ($25) would be the same as the rebate amount.

Illinois SeniorCare Formulary

While a PBM initially managed the SeniorCare drug benefit, coverage has always followed the Medicaid formulary. This is made up of "manufacturer rebatable" drugs and selected over the counter medications. These are determined by DPA Medical Programs officials and approved by a medical advisory group (volunteers from the Illinois Medical Society). Pharmacies are reimbursed for the ingredient cost of generic drugs based on the lower of the following amounts: the usual and customary price for the drug at that pharmacy, the Medicaid maximum allowable cost (MAC) list, the Federal Upper Limit, or the average wholesale price (AWP) less 25 percent. In addition, they are paid a dispensing fee of $2.25 per item. Reimbursement for brand drugs is the AWP less 14 percent, plus the dispensing fee of $2.25. The Medicaid manufacturer rebate is not included in this formula, and it applies (at varying percentages) to all brand and generic drugs. A SeniorCare preferred drug list is used for several drug classes (all other medications in that class require prior authorization), and new drugs are covered if the manufacturer pays the national Medicaid rebate. Coverage in most therapeutic classes includes virtually all drugs from all manufacturers except for some generic manufacturers. When ESI was managing the benefit, the state of Illinois determined the preferred drug list, but ESI provided management, such as prior authorization services and pharmacy edits for drug utilization management. An additional four percent rebate beyond the 17 percent Medicaid rebate was negotiated for SeniorCare (this accounts for the total rebate estimated at 21 percent noted in tables in this report). This was provided directly to the state and shared evenly with the Federal government.

Five classes of over the counter (OTC) drugs that are covered by Medicaid are also covered by SeniorCare (see Table I.-1.4). According to SeniorCare officials, covering OTC drugs is not a huge burden for the program, as it comprises only one percent of all drug costs.

The SeniorCare (and Medicaid) formulary is enforced through the prior approval process. All nonpreferred drugs in therapeutic classes that have preferred drugs now require prior approval through the Medicaid program. Also certain drugs may be on prior approval for reasons other than formulary management, such as those that have high abuse potential or that require particular medical monitoring. Many therapy classes do not have a preferred drug list, so most drugs in classes that do not appear on the preferred list are automatically on the formulary and are available without prior approval. This procedure has caused some confusion for enrollees and consumer advocates, who have mistakenly thought that some drugs were not covered because they are not listed on the preferred drug list. Illinois Medicaid is charged with prior authorization functions as of July 2003; prior to that, the PBM managing the benefit (Express Scripts, Inc) had a preferred drug list for several classes of drugs, and conducted prior approval for selected drugs.

[27] Application for the rebate is a two-step process: after a SeniorCare enrollment form is sent in, SeniorCare eligibility is established by IDR, the individual is sent another form to apply for the rebate instead of benefits.

Illinois SeniorCare Benefit Management

Year 1 of SeniorCare – Pharmacy Benefits Management by Express Scripts, Inc.

ESI was responsible for drug management and claims processing for the first year of SeniorCare operation, ending June 30, 2003. The SeniorCare contract with Express Scripts Inc. (ESI) was an amendment to the Circuit Breaker PAP contract with IDR. By contracting with ESI, DPA was able to implement SeniorCare faster. By using the existing contractor, Illinois also saved the procurement process, as CB-PAP had been competitively procured, and this was a contract extension. When SeniorCare was started, the contractual relationship between the state and ESI did not change, but the volume of business for ESI increased over its volume with CB-PAP alone. ESI also had to implement a new benefit package, differing in coverage details from that of CB-PAP.

ESI negotiated rates with the pharmacies, paid claims, conducted concurrent and retrospective drug utilization review, and provided weekly invoices for claims as well as monthly invoices for prior approval calls. ESI had an 800 telephone line for members with questions about drugs. ESI's pharmacy network was largely the same as the Medicaid network and included nearly all pharmacies in Illinois. ESI provided SeniorCare counts on claims rejections and reversals, documented in SeniorCare quarterly reports. Illinois also contracted with ESI to send letters to physicians and consumers as patient provider education programs. ESI also offered a menu of pharmacy utilization management programs to the state, like those offered to private insurers. The DPA could institute these programs for additional fees.

Like most PBMs and other insurers, ESI also had a specific program that helped Illinois coordinate benefits with Medicare and thus avoid the costs of drugs covered under Medicare Part B (for specified diagnoses or administered in a special setting). Examples are diabetic supplies, cancer chemotherapy drugs and anti-nausea drugs, and asthma medications. This management of specialty drugs, along with other drug and disease management techniques (such as targeted programs to increase use of generics or preferred drugs, in which physicians are sent letters to encourage cost-effective prescribing for specific patients), was employed for the SeniorCare population, and incurred additional costs to the contracted base cost of the PBM's service.

The base administrative cost contracted by Express Scripts was fifteen cents per prescription claim. Prior approvals were reimbursed at $20 per prior approval request. SeniorCare chose interventions from ESI's menu at a set price per prescription claim, such as 1 cent to 4 cents for each intervention. SeniorCare also paid a $2.55 per prescription dispensing fee[28]. ESI SeniorCare claims administration costs for the state fiscal "year" 2003 were estimated by SeniorCare officials to be $15 million.

Express Scripts managers had frequent interaction with SeniorCare officials during its year of involvement. There were regularly scheduled quarterly meetings, and as necessary, daily discussions. These interactions focused on updates to preferred drug list and sorting out data problems. According to SeniorCare officials, Express Scripts had been easy to work with, information exchange has worked smoothly and the data generated by ESI were generally clean.

[28] Amendment to contract between State of Illinois and ESI parent company DPA contract 2002-24-019.

ESI took care of all claims processing, drug utilization review and management (including prior authorization). ESI also took care of monitoring whether a senior was reaching his or her limit, and maintained a customer support hot line and a website that was designed to be user-friendly but received little use (only 286 log-ons in the first six months of the program).

Pharmacy Benefits Management Changes

After June 30, 2003, the ESI contract was not renewed. The original decision to contract with a PBM for management of the SeniorCare drug benefit had been based in part on the fact that the end price that the state would pay for prescriptions (including the impact of dispensing fees) was lower through the PBM than through the Medicaid program, considering the additional rebate discussed earlier. However, when the PBM was eliminated, the state was able to both lower the dispensing fee to $2.25 per prescription and obtain improved prices for generic drugs through the Medicaid MAC list--changes that resulted in programs savings. SeniorCare also saved an immediate $15 million in PBM management costs, so that overall drug expenditures would be lower with the new internal management arrangement. Enrollees also benefited, according to SeniorCare officials. Under direct DPA administration, SeniorCare members would now use the SeniorCare drug cost (excluding former ESI administration costs per claim) to meet their cap, so enrollees would take longer to meet the $1,750 target "soft cap."

Pricing of SeniorCare drugs was converted from ESI pricing in the following manner, and described in a memo to all pharmacists dated June 25, 2003: "…The department has a report of the aggregate amount of money paid to pharmacies by Express Scripts, Inc. (ESI) during the period SeniorCare was administered by ESI. In addition, the department has complete utilization data for SeniorCare. The department developed rates and ran them through a utilization model based on this data. The rates were developed so that for the exact same volume and distribution of drugs experienced in SeniorCare during the past year, the department would pay out in aggregate the exact amount of money ESI paid."[29]

With the change in management, new membership cards were sent to all SeniorCare enrollees. Management tasks and claims administration were turned over to the DMP divisions that support the Illinois Medicaid program as of July 1, 2003. According to SeniorCare officials, Medicaid pharmacy management features are similar to those of the PBM, in terms of concurrent review and prior authorization for certain medications. The Bureau of Contract Management (BCM), within the DMP, now performs these functions, with the exception of retrospective review and letters to physicians for utilization management (which is being planned at present). Table I-1.5 summarizes changes in claims administration and management with transition away from ESI.

[29] www.seniorcareillinois.com/062503_revision_sc.html

Appendix Table I-1.5: SeniorCare compared to Express Scripts, Inc. PBM claims management[30]

Item	Express Scripts Inc. Pharmacy Benefits Manager (June 1, 2002-June 30, 2003)	Medicaid management of SeniorCare (July 1 2003-present)
Covered drugs	Medicaid formulary	Medicaid formulary
Preferred drug list	Medicaid PDL	Medicaid PDL
Pricing for generic drugs	Lower of ESI MAC list pricing, Federal Upper Limit, or (AWP less 14%)	Lower of Medicaid MAC list, Federal Upper Limit, or (AWP less 25%)
Brand drug pricing	AWP less 14%	Medicaid price: AWP less 14%
Dispensing fee	$2.55 per rx	$2.25 per rx
Utilization management: point of service (e.g. refill edits, prior authorization calls)	ESI	Medicaid (BCM)
Retrospective review, physician directed programs	Yes	No
Claims administration costs	ESI per claim, total $15 million	Medicaid staff and resources
Member support	ESI member support line and website, DOR for eligibility	DOR for eligibility, DPA for coverage and claims
Quality assurance	ESI plus Medical Programs Division	Medical Programs Division

Challenges in Transfer of Drug Benefit Management.

SeniorCare administrators report that the transition from ESI to internal management has been generally smooth, but several issues arose that had to be resolved. These issues, which included higher than expected volume of prior authorization calls in the first month and some problems with variables in the eligibility files, were noticed immediately, as soon as enrollees began using their benefit at the pharmacy. As of October 2003, SeniorCare is in the process of resolving these issues. SeniorCare officials approached these problems (and other problems like them) in two steps: an immediate fix to maintain continuity of access (immediate override of drug rejections that appear to be problematic) and within days or weeks, a restructuring of the data

[30] Sources: Amended contract between state of Illinois and ESI parent company; Interviews with ESI senior account representatives; Interviews with Illinois DPA officials.

system to resolve the problem permanently. DPA has used this approach in addressing the high volume of calls for prior authorization around June and July, when most people need approvals. Temporary approvals were given when the problem was first noticed as SeniorCare switched from ESI management, and then systems were changed to stagger the dates on which approval will be required in the future.

In addition, some negotiation occurred regarding dispensing fees for SeniorCare prescriptions. Initially Illinois proposed a tiered dispensing fee to encourage use of generic drugs. However, pharmacists objected, and a $2.25 dispensing fee was agreed upon by DPA through a compromise.

SeniorCare Data Systems and Internal Monitoring

Illinois pays its own Medicaid claims and does not contract services to a third party fiscal intermediary as do many state Medicaid programs. In Illinois, 1.5 million people are on Medicaid at any one time, with 2.1 million during some time of the year. With the addition of less than 200,000 more people through Senior Care, no increase in staff or resources was required to handle the added claims volume with the implementation of SeniorCare, especially as an external PBM was administering the benefit.[31] The Medicaid data warehouse is used by SeniorCare program officials to perform analyses and reports for regular monitoring, to check whether payments are correct, and to generate data for the quarterly and annual reports regularly provided to CMS.

If a SeniorCare enrollee becomes Medicaid eligible during the year, Medicaid assumes primary responsibility for paying claims; the integrated system facilitates administering that policy. During this period, while Medicaid pays for his or her drugs, the individual does not give up SeniorCare enrollment; the enrollee uses the same card but Medicaid pays for the prescriptions. Then, if the enrollee goes off Medicaid during the year, he or she is automatically placed back on SeniorCare without re-enrolling in the program until the standard enrollment year has ended.

Illinois SeniorCare Member Support

There are several support vehicles in the program, and several advocacy groups in the community also address members' questions and concerns. They include:

- IDR has a hot line to call for assistance and questions with enrollment
- DPA has a health benefits hot line
- Department on Aging has an advocacy network that provides support (see later discussion of this)
- ESI (during year 1 of SeniorCare operation) had a hot line for prescription cost sharing related issues.

[31] SeniorCare program administration costs may increase with in-house drug management starting July 2003, but may in part be offset by savings accrued from eliminating PBM administrative costs.

The support lines within the state agencies (IDR and DPA) were heavily staffed and trained to respond to questions regarding enrollment and benefits. The Department on Aging worked in partnership with Illinois DPA to provide enrollment support (See later discussion). ESI's support role during the first year was directly related to issues regarding the benefit, in particular assisting enrollees in understanding copayment requirements, issues regarding coverage, and how close individuals were to the cap.

Illinois Context for Prescription Drug Coverage for Low-income Seniors

Prescription Drug Coverage for Seniors

According to the 2000 U.S. Census, approximately 274,576 Illinois residents age 65 and older fall in the income range between 100-199 percent FPL.[32] Several recent sources are available to provide information that is useful in examining the prescription drug coverage status of this population within Illinois: the Medicare Current Beneficiary Survey (MCBS), and a recent survey of low-income seniors in eight states including Illinois, conducted in 2001 by the Kaiser Family Foundation (KFF).[33] This was conducted prior to implementation of Illinois SeniorCare, but while the Illinois Circuit Breaker Pharmacy Assistance Program was in place.

JEN Associates, Inc. has provided a preliminary analysis of the year 2000 Medicare Current Beneficiary Survey (MCBS) examining the sources of prescription drug coverage for Medicare seniors, in the North Central region states, in the income category between $10,000 and $20,000, a similar level to that of SeniorCare enrollees.[34] This is compared to the KFF study noted earlier. Table I-1.6 provides a comparison of prescription drug insurance coverage status reported in each survey, as a means of estimating the size of the population that may be eligible for Illinois SeniorCare. Groups that would be likely to enroll in Illinois SeniorCare are in **boldface** type.

[32] Source: U.S. Census Bureau, 2000 Census, Summary File 3.

[33] Safran et al, "Prescription Drug Coverage and Seniors: How Well are States Closing the Gap?" *Health Affairs Web Exclusive*, July 31, 2002. (www.healthaffairs.org).

[34] States in the East North Central region include: Illinois, Wisconsin, Ohio, Michigan, and Indiana.

Appendix Table I-1.6: Prescription drug insurance coverage estimates from two sources

Type of Insurance	2000 MCBS North Central Region ($10,000 to $20,000 annual income) (n=639 weighted)	Eight state survey of low-income seniors: Illinois findings for near-poor (101-200% FPL) (n=292)
Employer based (retiree) with prescription drug coverage	31%	27%
Medicaid	3%	1%
Medicare HMO	20%	11%
VA	Included in other categories	2%
Medigap with rx coverage	**6%**	**11%**
No supplemental rx insurance coverage	**36%**	**34%**
Public state rx	**1%**	**12%**
Other purchased rx coverage	**3%**	**2%**
Total estimated to have no coverage, had CB-PAP at time of survey that would roll-over, or insurance individuals might drop for SeniorCare.	**56%**	**59%**

These numbers are only rough estimates to provide a context for prescription drug coverage for the population covered by SeniorCare, and serve as a guide to potential take-up rates for Illinois SeniorCare for further analysis. Enrollment in Illinois SeniorCare through November 2003 includes 144,000 members within the income group 100-200 percent FPL (see later details), and suggests that over half of seniors in this income category have joined to date. It should be remembered that all individuals in the income category are eligible to enroll in Illinois SeniorCare members by either taking the rebate offer or enrolling for the drug benefit, but the groups noted in the above table would be most likely to need and choose the drug benefit. Finally, these estimates reflect the prescription drug coverage environment when SeniorCare was implemented, and do not take into account coverage changes associated with the enactment of the Medicare Prescription Drug Improvement and Modernization Act after 2005.

Illinois Medicaid and Impact of SeniorCare

In 2002, the total Medicaid population age 65 + for the state of Illinois was approximately 145,000 each month, and a total of 165,000 annually.[35] These seniors who are Medicaid beneficiaries make up nine percent of Illinois Medicaid enrollees.[36] In addition to a relatively low managed care penetration for Medicare Plus Choice in Illinois, managed care penetration for all Medicaid enrollees (all programs, all ages) is also quite low, at 7.4 percent compared to a national average of 57.5%.[37]

The impact of the SeniorCare program on Illinois Medicaid is an issue of critical importance, as CMS requires Medicaid federal budget neutrality for the population age 65 and older by year five of the demonstration. This puts the state of Illinois at risk for the costs associated with implementation of the demonstration and expansion of benefits, as some analyses have noted.[38] Thus, estimates are made at the outset of how the SeniorCare program will impact Illinois Medicaid.

For the SeniorCare demonstration application, Medicaid projections were calculated both with and without SeniorCare. According to a senior program official, determining inputs for the budget neutrality calculations was the biggest hurdle to the demonstration application. Program costs could not be modeled after the CB-PAP program, as several important features were very different, as discussed in the previous section. Information that fed into the budget projections were a combination of historic data from Medicaid and assumptions regarding future growth and expenditures and take-up rates. Using a base year of the state fiscal year (SFY) 2001(which ended June 30, 2001), five year enrollment and cost trend rates were developed for Illinois Medicaid. At the time the pharmacy program was being developed, the income threshold for Medicaid eligibility was 70 percent FPL, but this has risen from 70 percent to 85 percent to 100 percent of FPL in the past three years, adding to the difficulties in arriving at budget neutrality estimates.

The following summarizes some important assumptions and components of Federal budget neutrality for Illinois SeniorCare:[39]

1. Medicaid program growth and expenditures for beneficiaries age 65 and older, without SeniorCare: 5.5 percent expenditure growth per eligible per year, based on historic growth years 1997-2001; five percent growth in eligibles, increasing rate from 1997.
2. SeniorCare program costs:
    a. Enrollment: based on KidCare experience (as it is a program recently implemented enrolling low-income families), 75 percent of eligible seniors by year five.

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[35] Illinois Department of Public Aid, Division of Medical Programs, *Illinois Medical Programs: A Primer*, 2002.

[36] www.kff.org/statehealthfacts

[37] http://www.cms.hhs.gov/medicaid/managedcare/mmcpr02.pdf

[38] Kaiser Commission on Medicaid and the Uninsured, The Financing of Pharmacy Plus Waivers: Implications for Seniors on Medicaid of Global Funding Caps, May 2003.

[39] See CMS website (http://www.cms.gov/medicaid/1115/ilrxbudgetnew.pdf) for budget neutrality worksheet and notes

b. Drug expenditures per person: based on Medicaid prescription costs to community residents per eligible age 65+, but five percent lower drug costs because of the expected response of SeniorCare members to the per-prescription cost sharing
c. Enrollment rebate provided to twenty percent of eligible population (this is conservative, based on national Current Population Survey estimates of the number of elders in this income range who hold private insurance coverage for prescription drugs).

3. Medicaid program growth with SeniorCare
   a. SeniorCare program costs, as above.
   b. Less the decrease in Medicaid enrollment, which was estimated at five percent less than historic growth due to diverted eligibles. The diversion from nursing homes was based on literature,[40] the NYS EpiCare experience,[41] and some anecdotal reports from providers and others.

It is important to note that there are several cost-related items that were not included in budget assumptions, but that could have considerable impact on the budget neutrality of SeniorCare in both directions over the next few years. In particular:

1. The year 2003 began with rate cuts in payments to all providers. This change will have created savings to the Medicaid program that are unrelated to the existence of SeniorCare. This cost saving was not included in the projections for budget neutrality, but it improves the chances for Medicaid saving (total expenditures for 65+ population less than projections) over the evaluation period.
2. Illinois negotiated additional manufacturer's rebates for some drugs, beyond the Medicaid rebate. These additional rebates equal approximately four percent of drug spend in the program and are split evenly between the state and federal government. These rebates were not included in budget projections. This reduced program costs only in the first year of the project.
3. Inflation in general health care services (excluding prescription drugs) had been relatively low over the historic period on which these projections were based, and recently (since 2002) has risen much more rapidly.
4. Price changes in prescription drugs may fluctuate higher or lower based on generic availability in the coming years and approval of medications for over the counter status.
5. The impact of a Medicare drug benefit could be significant, and will depend on the eventual role of state pharmacy assistance programs.

To assure Medicaid budget neutrality during the demonstration, a federal budget cap was agreed upon and stated in the Terms and Conditions of Approval for the Illinois SeniorCare

[40] Soumerai et al., "Effects of Medicaid drug-payment limits on admission to hospitals and nursing homes," NEJM 325(15):1072-1077., 1991.

[41] NYS Epicare experience (cite).

demonstration. The cap is the Federal share of a projected total cost of the Medicaid program (including the SeniorCare component) at the end of the five-year demonstration, and is $14,046,722,751. While the cap is a cumulative five-year target, the Terms and Conditions of Approval also lists a schedule of annual cumulative target expenditures. If the state exceeds the cumulative cap at any point, it must submit a corrective plan to CMS. The budget cumulative target for the first year of the SeniorCare demonstration is $3.034 billion, with an eight percent allowable margin.[42] This is discussed further in first year implementation and program costs.

Implementation of Illinois Senior Care Year 1

Enrollment

When SeniorCare began operation on June 1, 2002, 121,000 enrollees "rolled over" to SeniorCare.[43] As of June 30, 2003, the end of the first year of operation, there were a total of 177,000 people enrolled in SeniorCare.[44]

Table I-1.7 shows enrollment by category as of December 2, 2003:

[42] http://www.cms.gov/medicaid/1115/ilrxtcs.pdf

[43] According to early reports, 148,000 people shifted from Circuit Breaker Prescription Assistance Program to SeniorCare. However, the number was actually lower, due to some of the following problems with the CB-PAP enrollment file: deceased people were still on the rolls due to lack of matches with vital statistics, some people also fully enrolled in Medicaid were mistakenly on the rolls, some people were mistakenly in the files as duplicates.

[44] As of September 30, 2003: 185,000 enrollees.

Appendix Table I-1.7: Enrollment categories Illinois SeniorCare

Category	Number of enrollees
Rolled over from Circuit Breaker	121,000
New enrollees	45,040
Rebate takers	6,293
Total SeniorCare enrollees	172,333 total: 28,360 at or below 100% FPL (copayments waived)[45] 143,973 above 100% FPL

Enrollment in SeniorCare is comparable to the number originally predicted (originally estimated to be 208,000 by end of the second program year, June 30, 2004). The number of individuals that took the rebate is considerably lower than expected, at 2.8 percent of enrollees, rather than the seventeen percent originally predicted. SeniorCare officials suggest several reasons for this, relating to inadequate communication regarding the rebate, lack of interest by those with other coverage, or the two-step process of applying for the rebate.[46] (See June 2003 SeniorCare annual report for a more detailed discussion of this issue.) At the same time, it could be that seniors are supplementing other coverage with SeniorCare. The survey currently being conducted as part of this evaluation should reveal more about other coverage and why fewer individuals than expected applied for the rebate.

Renewing Membership in SeniorCare

Regardless of when during the year an individual signs up for Illinois SeniorCare, renewal is required by July 1 each year. If an individual initially enrolled after January 1, enrollment is good for the following year also (up to 18 months). Renewing membership in SeniorCare has been problematic, as a large portion of enrollees did not renew by the deadline of July 1, 2003 for the coming year. Re-enrollment is further complicated because the state cannot put an expiration date on a drug coverage card due to HIPAA, so individuals do not see their expiration date on their cards.

Enrollees are sent renewal forms six months before their enrollment year ends. Reminders are sent three months later to those who have not re-enrolled. Seniors must by statute reapply for enrollment each fiscal year before July 1, unless the date is extended. In 2003, approximately 140,000 seniors re-enrolled on time. The DPA sent out reminder notices to more than 40,000

[45] Enrollees might be less than 100% FPL but ineligible for Medicaid because of assets.

[46] As noted earlier, application for the rebate is a two-step process: after a SeniorCare enrollment form is sent in, SeniorCare eligibility is established by IDR, the individual is sent another form to apply for the rebate instead of benefits.

people who had not re-enrolled. About 28,000 seniors had still not reapplied as of July 1, 2003, so on July 18, 2003, the Governor of Illinois granted a temporary three-month extension of enrollment and the reenrollment deadline was extended until September 30, 2003 for SeniorCare (though not for the state-only program CB-PAP, which also requires re-enrollment).[47] On July 25, 2003, over 41,000 temporary cards were sent out to individuals who had not re-enrolled. Temporary re-enrollment was provided for three months, through September 30, 2003. According to Illinois DPA, as of October 2003, outreach efforts were successful, with the following resolution: 14,578 seniors granted an extension were reenrolled in SeniorCare, 11,861 were enrolled in Circuit Breaker PAP, 2,008 reapplied and were found ineligible for either program, and 1,052 had applications pending as of October 1. Of the remaining 13,343 seniors granted extensions, only 2,612 had filled prescriptions, and outreach efforts are continuing.[48]

According to SeniorCare officials, some of the problems regarding reenrollment were due to lack of communication on the part of the DPA with the outreach workers. The Department has resolved to be more proactive regarding getting out information to enrollees and those helping them, to avoid lack of communication in the future. Actions include reviewing the enrollment and reenrollment forms with community senior advocates prior to using them and reviewing the process of informing the public regarding SeniorCare enrollment and coverage issues.

Drug Utilization and Cost Estimates for the First Year of the Program

At the end of its first full fiscal year of program operation, July 1, 2002 through June 30, 2003, the SeniorCare program cost $215 million dollars in total drug costs (approximately $170 million net of rebate income). Table I.-1.8 lists utilization and expenditure highlights for the 177,000 members of the program at for the first full fiscal year, from July 1, 2002 through June 30, 2003:[49]

[47] Press release July 25, 2003, Illinois SeniorCare website (http://www.seniorcareillinois.com/072503_release_sc.html)

[48] Illinois DPA, Illinois SeniorCare Quarterly Progress Report, July2003-September 2003.

[49] Source: Illinois DPA, SeniorCare program status report

Appendix Table I-1.8: Utilization and expenditures for Year 1 Illinois SeniorCare

Item	First full fiscal year (July 1, 2002 – June 30, 2003)
Number of enrollees with prescription benefit	177,000
Average number of individuals using a prescription	117,802
Total program drug expenditures Year 1 in thousands (000)	$215 million (not net of rebates)
Average proportion of enrollees with at least one claim each month	69%
Plan expenditures per user per year	$1,832
Average number of prescriptions per user	52.3
Generics as a percent of claims	55.5%
Generics as a percent of state costs	26.6%
Average total cost per prescription (plan and member share)	$39.14
Average member cost share	10.64%
Average total cost per brand drug (plan + member share)	$64.52
Average member copayment per brand drug prescription	$6.86
Average total cost per generic drug prescription	$18.81
Average member copayment per generic drug	$2.05
Number of enrollees reaching $1,750 cap by end of year 1[50]	53,162 (approx. 30% of enrollees)

SeniorCare Program Costs and Overall Illinois Medicaid Budget

SeniorCare program drug costs for the first fiscal year were a total of $213 million (when rebates are calculated in, costs could be as low as $170 million), compared to $193 million total initially projected in the demonstration application. The overall number of claims (6.06 million for the first 12 months) was higher than the 4 million initial expectations, but the average program cost per prescription is somewhat less than projected because of higher-than-expected generic rates, making overall costs just above expectations.

Medicaid enrollment for age 65+ for the year was approximately 150,000 each month by the end of twelve months, lower than the 155,469 estimated without the demonstration, and very close to the 148,000 estimated in the demonstration projections by June 2003 with implementation of

[50] Expenditures from July 1, 2002 through June 30 2003 counted toward the "cap."

SeniorCare. Medicaid overall costs for the population age 65+ for FY 2003 are not yet finalized so no comparison can be made at this time to the $2.4 billion projected costs of Medicaid for end of year 1, or $3.08 billion budget neutrality target for end of year 1 of the demonstration.

Drugs Purchased through SeniorCare

A major objective of the Illinois SeniorCare demonstration was to expand the array of medications available to low-income seniors beyond the medications allowed in Circuit Breaker PAP for the designated medications. Table I-1.9 lists and ranks the top disease classes that have been provided under the SeniorCare benefit, to illustrate how SeniorCare enrollees have used this benefit to purchase drugs that might otherwise not be covered in the earlier CB-PAP.

Appendix Table I-1.9: Top ranked therapeutic classes (by total dollars) for SeniorCare members, October 1 through December 30, 2002[51]

Rank	Therapeutic Class	Percent of total SeniorCare drug expenditures for the quarter
1	High blood pressure/heart disease	18.7%
2	High cholesterol	12.7%
3	Diabetes	8.2%
4	**Ulcer disease**	**6.7%**
5	Pain and inflammation	6.5%
6	Asthma	4.4%
7	Blood modifying	4.2%
8	Osteoporosis	3.7%
9	Depression	3.1%
10	Severe pain	2.6%
11	Glaucoma	2.4%
12	Infections	2.3%
Total	Total top 12 classes	75.5%

Note: Drug classes not covered by CB-PAP are in bold.

[51] Source: Semi-Annual Strategic Planning Session Report, Express Scripts, Inc., January 15, 2003

As Table I-1.9 shows three of the drug classes in the top 12 expenditure categories for SeniorCare are not covered by CB-PAP, and do not appear on CB-PAP expenditure reports: ulcer disease, depression, and infections (in bold in Table I-1.8). These three drug classes together account for 12 percent of SeniorCare total drug expenditures for the quarter. In fact, Prevacid, an antiulcer drug not covered by CB-PAP, ranked second in SeniorCare total drug expenditures during the time period. This illustrates the substantial demand for prescription drugs to treat these conditions presently not covered through CB-PAP.

Outreach and Consumer Feedback

Outreach

The following agencies were involved in initial outreach efforts during year 1 of Illinois SeniorCare:

- DPA – held training sessions, including sessions for legislative staff
- Department on Aging – had funds allocated for outreach, through 13 Senior Area Agencies on Aging.
- Department of Insurance – has counselors who help seniors with insurance.

The Bureau of Contract Management (BCM) maintains a hotline for seniors to ask enrollment and program questions for SeniorCare. Staff can look up callers' accounts and answer questions related to eligibility, card replacement, what drugs are covered, and cost sharing. Staff of the Bureau trained staff at other agencies such as the Department on Aging and Department of Insurance to respond to inquiries about SeniorCare. DPA staff provided informational sessions to Illinois legislators and their staff.

The IDR has a hot line of its own that serves all 300,000 people receiving property tax relief and CB-PAP. The IDR hotline answers questions about SeniorCare eligibility and application status. It is helpful to some extent, but in the first months of the program, callers abandoned eighty percent of their calls due to congestion. According to officials, the proportion of calls regarding pharmacy assistance last year far outweighed the number of inquiries for the general taxpayer assistance.

The Bureau of Contract Management, in conjunction with the Department on Aging, also held meetings at senior centers, which were well attended. They often had 50-100 people attend the sessions even in small communities. A total of twelve informational sessions were held in July and August 2002, during the first few months of the program. The Department on Aging also provides information concerning SeniorCare and assistance for completing applications. The Department on Aging also conducted about 500 seminars in senior housing, places of worship, and health fairs. The agency works with pharmacists as well.

In state fiscal year 2003, Illinois DPA, through interagency agreement, sent $1,000,000 to the Illinois Department on Aging for SeniorCare outreach. Another $176,000 was given to Aging to

expand their senior helpline to accommodate additional capacity for SeniorCare related calls. In addition, DPA used $824,000 to pay telecommunication expenses incurred by the Department of Revenue's Circuit Breaker hotline.

Consumer and Advocate Feedback

Advocates from some of Illinois' thirteen Area Agencies on Aging say that this program has been of great benefit to many seniors, and seniors are thrilled about the program. Elder agency representatives and consumer advocates often look for a patchwork of benefits to pay for prescription drugs for their clients. There are rampant stories of people stretching out medications, or not taking any at all, concerning diabetic drugs (insulin and other medications) and treatment for cancer and heart disease. Illinois SeniorCare appears to be helping relieve this problem for a great number of people.

Several areas of confusion have been noted during the first year of implementation, including reenrollment and coverage questions. According to an advocate, a major problem encountered for SeniorCare enrollees was with Medicaid spend down – people who spent down became eligible for Medicaid for one month, but then subsequently were terminated from Medicaid but should remain eligible for SeniorCare. Spend down is a complex process, and enrollees found it difficult to understand. Out of 147,380 people with SeniorCare cards, 4,400 met spend down (temporarily in Medicaid in that month) as of January 2003, and 3,800 unmet spend down (in SeniorCare, are in Medicaid system but not Medicaid eligible that month). These people could become Medicaid eligible retroactively. While it is difficult for individuals to determine their status from month to month, with SeniorCare, they do not have to use a different drug access card depending on whether they become Medicaid eligible during the year, and the process of purchasing prescriptions is the same, as are pharmacy networks, although copayments for SeniorCare are higher.

Advocates report that some of the barriers to care faced by SeniorCare enrollees are health literacy as well as language barriers. One outreach worker was concerned about lack of customer service for the SeniorCare program and difficulties getting through to the IDR assistance line. Another confusing issue concerned the inconsistencies in caps between the state fiscal year and each individual's initial twelve-month eligibility period. The problem was resolved in spring 2003 when the timing of coverage and cap were changed to the start of the state's fiscal year, July 1. Now coverage and cap are based on the state's fiscal year. An important aspect of the program, knowing when a member is nearing the soft cap of $1,750 in expenditures, presents a challenge for individuals. The senior outreach workers, along with pharmacists, help with this information.

Finally, outreach workers noted that the application process (a two-page section in a 17 page booklet from IDR as part of the Circuit Breaker tax relief application) is cumbersome, and has presented problems, as the IDR is not set up in the same way as are human services agencies to be customer responsive.

Key Issues in Implementation of Illinois SeniorCare

SeniorCare is a popular program with considerable public support, according to both program officials and consumers. Consumer advocates have been quite candid in articulating problems encountered in the enrollment process and other aspects of the program, highlighting problems in

communication between the state, enrollees and the public. However, it was clear that this program has been extremely helpful to low-income seniors, and problems encountered initially (particularly regarding communication with consumers and advocates) are acknowledged by the program and are in the process of being addressed by a responsive senior management.

The Illinois SeniorCare program implementation appears to be consistent with the program's operational protocols. Several key issues have arisen during the first year, particularly difficulties in the enrollment and re-enrollment process. On the other hand, internal changes that had to be made during the year in member support and information dissemination indicate that program staff and senior management are responsive to issues as they come up. Officials understand the clinical and political importance of finding rapid solutions to enrollees' access problems, and have been able to make ongoing minor and major mid-course corrections as needed. The problems with re-enrollment in particular have been addressed and resolved, as discussed earlier.

Several additional areas will be the focus of further evaluation:

Budget projections: Budget neutrality projections were based on Medicaid historical enrollee and expenditure growth during the years preceding the start of the demonstration. The assumptions underlying this growth were jointly agreed between CMS and the states in the negotiations around approval of the demonstrations. Implicit in these calculations is the assumption that the historical trends would continue and that there are no other major factors causing major changes in Medicaid spending, such as a prescription drug benefit for Medicare. In the case of Illinois, a previously planned expansion in the income ceiling for Medicaid took effect on July 1, 2002 (one month after the start of the demonstration), raising the cutoff from 70 percent to 100 percent of the Federal Poverty Level. Changes in discretionary state services, and reduction of state controlled reimbursement rates (such as payments to providers) could slow the growth of Medicaid.[52] Changes in availability and payment for complementary services (by either Medicaid or Medicare) could affect use of community based long-term care services, and indirectly impact Medicaid (and Medicare) spending. Alternatively, future inflation in health services (excluding prescriptions) could also be higher than historical trends. Clearly, after 2005, the new Medicare drug benefit will have an impact on Illinois SeniorCare as with other state pharmacy assistance programs that serve low-income seniors.

Plan design: Several features of the plan design in Illinois SeniorCare provide an interesting area for further study, including: low copayment differentials between generic and brand prescriptions ($1 versus $4 for a one-month supply, respectively), and the soft cap (beyond $1,750 in expenditures, individuals go from a $1 or $4 copayment to the copayment plus 20 percent of ingredient costs). Research questions such as how enrollees change behavior before, or after meeting the cap, and how the copayment differential affects use of generics, would be interesting to address, both for this program and as lessons for other state programs. The Brandeis evaluation team has just been awarded a grant by the Robert Wood Johnson Foundation

[52] According to a July 2003 survey of 50 states, most states are restricting their Medicaid budgets through various means, including restricting provider payments, increasing cost containment for prescription drugs, reducing eligibility, reducing benefits, and increasing beneficiary cost sharing. (Kaiser Commission on Medicaid and the Uninsured, *State Budgets and Medicaid, preliminary results*, (www.kff.org/content/2003/20030815/prelimresults).

to explore this issue in more detail by comparing plan design features across different state programs.

Pharmacy benefits management changes: The transfer of administrative and management duties from Express Scripts to Medicaid is reported by SeniorCare officials to be generally smooth, with the largest hurdles around eligibility glitches and prior authorization volume. Medicaid has many of the utilization management programs that ESI does, and it will be important to look at how management or utilization may differ from one year to the next going from a PBM to in-house management. Express Scripts showed innovative systems (now common in the private sector) with letters to doctors and electronic communication with pharmacists to try to persuade doctors to switch patients to favored drugs, improve compliance when drugs were missed, etc. How often ESI pursued these strategies relative to the opportunities to do so, how drug management changed when moved from the PBM to Medicaid, and the impact of the end of the contract with the PBM would also be worthy of further study as lessons for other programs, public and private.

Joint program responsibility across two agencies: The Illinois Department of Public Aid and the Illinois Department of Revenue have different missions, staff, and information systems. The linkages between the two departments for the purposes of SeniorCare are well established at this point. However, initially, a particularly problematic area was the IDR customer assistance line, which was clogged for months due to callers asking about property tax rebates. The departments were aware of these problems with customer service, and met the need to some extent by increased staffing. SeniorCare managers seem to have good relationships with senior advocates, a fact that most likely helps DPA be responsive to consumer concerns. This is also a program area that we will follow during the course of the evaluation.

Additional federal and state prescription drug initiatives: In December, 2003, the Medicare Prescription Drug Improvement and Modernization Act was enacted, providing a prescription drug benefit for Medicare. Depending on final rules, all state pharmacy assistance programs will be affected, and state pharmacy assistance programs under Medicaid 1115 demonstrations may have particular rules in providing assistance in cost sharing for those receiving pharmacy benefits. At present, Illinois SeniorCare is evaluating options for how to respond to the new legislation.

In addition to federal policy, several new state policies will be interesting to follow during the course of this evaluation. One, a new prescription drug discount "club" for seniors and the disabled, provides for discounts of 20 to 30 percent off the cost of prescription drugs. This program started in January 2004, and is open to all seniors for an annual fee of $25. While this program may not have direct immediate effects on Illinois SeniorCare because SeniorCare is a more generous program and limited to those seniors with low income, it may affect the overall picture of prescription drug purchasing for seniors in Illinois.

Another policy that may have an impact is the approach recently investigated by the Illinois Special Advocate's Office to purchase drugs from Canada for retirees and state employees. As well, the state is investigating further negotiations with drug manufacturers to obtain increased discounts from manufacturers for the nine state programs that purchase medications. SeniorCare

and CB-PAP could be affected by this potential change in the drug pricing environment if either are included in this initiative. Depending on how any of these policies develops, Illinois SeniorCare and other prescription drug programs could see an impact.

Brandeis Site Visit Details

Schedule

Site visit to Springfield, IL January 16-17, 2003

Phone calls and documents exchanged over the course of the year

Brandeis Site Visit Team

Cindy Thomas, Task leader for site visit

Donald Shepard, Principal Investigator of State Pharmacy Assistance Evaluation

Christine Bishop, Task leader for economic evaluations

Roberta Constantine, Project manager (at time of site visit)

Interviewees

Illinois Department of Public Aid
Nine senior managers in the Department of Public Aid, various program offices.

Department of Revenue
Program Administrator

Express Scripts
Three Senior Account Managers

Consumers
Representativ***e*** from the Suburban Area Agency on Aging

Appendix 8: Task 1-W: Program Description and Process Evaluation: Wisconsin

Wisconsin SeniorCare Program Description*

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Executive Summary

Wisconsin SeniorCare is a program designed to provide expanded prescription drug assistance to low-income seniors in the state of Wisconsin who are not enrolled in Medicaid. A portion of the Wisconsin SeniorCare program (enrollees with incomes up to 200 percent of the federal poverty level [FPL]) is financed through a Medicaid 1115 five-year demonstration. Wisconsin is the second state, after Illinois, to implement a Medicaid 1115 demonstration, or "waiver," for a pharmacy assistance program through the Centers for Medicare & Medicaid Services (CMS) Pharmacy Plus program. Wisconsin SeniorCare benefits became effective on September 1, 2002, and as of August 31, 2003, the program covered approximately 93,000 Wisconsin seniors.

An important component of the Medicaid demonstration agreement is an independent program evaluation, which will examine SeniorCare program costs, access, and impact on Medicare and Medicaid expenditures. CMS has contracted with Brandeis University to conduct the Wisconsin SeniorCare evaluation, and Wisconsin has fully cooperated. As part of the evaluation, Brandeis researchers conducted a site visit to Madison in March 2003 and followed up with phone interviews and background documentation in order to prepare a description of the program. The aim of this paper is to summarize our understanding of the program, its design, history and first year of implementation, and to identify challenges and key issues for the broader evaluation. This is thus a background document with more analytical reports to follow. Several portions of this report draw upon the substantial documentation provided by the Wisconsin Department of Health and Family Services (DHFS) in quarterly and annual reports to CMS on the SeniorCare program.

Wisconsin SeniorCare was developed and is operated by the Wisconsin DHFS, the state agency that administers Wisconsin Medicaid. It is a newly initiated program, rather than being an expansion or follow-up to a related existing program, as is the case with Illinois SeniorCare. The full Wisconsin SeniorCare program provides prescription drug benefits to Wisconsin residents age 65 or older with incomes up to 240 percent of federal poverty level (FPL) and not enrolled in Medicaid. However, the Medicaid 1115 demonstration matching program covers only those enrolled individuals who are at or below 200 percent FPL, with the remaining portion of the program financed through state funds, and participant cost sharing.

As part of the Wisconsin state legislation in 2001 creating a prescription drug assistance program for seniors, officials were directed to apply for a Medicaid 1115 demonstration to cover the costs of the eligible portion of the program. The demonstration application, CMS approval, and implementation of the program were achieved rapidly, with initial enrollment within nine months after legislation passed. This was remarkable in light of all of the preparations necessary, from designing enrollment forms and data management systems, to educating the public about the new program. Successful and rapid ramp up to implementation was achieved largely due to thorough communication by program officials with consumer networks, the involvement of the senior area network benefits specialists who signed up individuals, a strong mandate from high levels within the state DHFS, and the capacity of the state Medicaid pharmacy point-of-sale (POS) claims system to be adapted to support the program.

Wisconsin SeniorCare has several levels of eligibility depending on income, with different cost sharing at each level. All members have an application fee, and most have a deductible and tiered copayments, with no maximum to the benefit. Claims are administered through the Medicaid POS claims system, rather than being carved out to a pharmacy benefits manager (PBM);

SeniorCare follows the Wisconsin Medicaid formulary, and all Medicaid pharmacies participate in SeniorCare.

A unique feature of the Wisconsin SeniorCare program is that any state resident age 65 or older at any income level can enroll. Seniors who enroll are assigned to one of the following eligibility levels, based on income: level 1, income <= 160 % FPL; level 2a, income >160 – 200% FPL; level 2b, income > 200 – 240% FPL; or level 3, income > 240% FPL. Participants in level 3 are considered in "spend down" and must purchase prescription drugs at the retail rate in an amount equal to the amount that his/her income exceeds 240 percent FPL. These drug purchases are tracked in the SeniorCare claims system. When the participant spends down to 240 percent FPL eligibility level, his or her benefit takes effect, after a deductible. Differences between the state-only portion of the program (above 200 percent FPL) and the 1115 demonstration portion (up to 200 percent FPL) are apparent to enrollees and the general public only in terms of the different deductible requirements; the program is treated for enrollment and management purposes as one combined program, in spite of the differences in program financing.

Implementation of Wisconsin SeniorCare has gone smoothly in its first year. The overall enrollment as of August 31, 2003 included 68,292 participants for the 1115 demonstration portion of the group and 93,552 for the full program. SeniorCare reported program costs (for drugs and dispensing fees, net of member cost sharing, and before manufacturer rebates) were $79.5 million as of August 31, 2003 (with the Medicaid demonstration portion of the program $62.2 million before rebates). Reenrollment in the first few months of year 2 has also been successful, with over 90 percent of SeniorCare enrollees who received any benefits through the program during the first membership year reenrolling in the program.

During the first year of operation, Wisconsin SeniorCare program activities have gone according to the operational protocols provided to CMS and mandates set forth by state legislation. Wisconsin SeniorCare succeeded in providing access to prescription drug benefits to all Wisconsin low-income seniors, enrolling a large group, and providing them with coverage for prescription drugs, within the projected budget.

During the year, however, several challenges emerged that were addressed. First, a potential problem arose regarding pharmacist participation in SeniorCare, because pharmacists' reimbursement rates for SeniorCare are pegged to the Medicaid reimbursement rates, and these payment rates were threatened in a Medicaid budget negotiation. Perhaps in part due to the very strong public and political support of the SeniorCare program, a legislative compromise was made that was acceptable to pharmacists. Reenrollment presented a challenge as data systems had to be developed to support the process, and a major focus was placed on making reenrollment easily accessible to members. Also, the active involvement of, and collaboration with, the Wisconsin senior advocacy network was very important in facilitating successful enrollment and reenrollment**.**

Introduction

This paper describing the Wisconsin SeniorCare demonstration program's development and its first year of operation is part of a CMS sponsored three-year evaluation of the Medicaid 1115 SeniorCare demonstration. The overall evaluation project, conducted by a team from Brandeis University, is charged with examining several aspects of the program, including its design, implementation, impact on low-income seniors in Wisconsin, and its impact on the state Medicaid budget and on Medicare costs for enrollees. In order to prepare a description of the Wisconsin SeniorCare program, Brandeis researchers conducted a site visit to Madison on March 12-14, 2003, to interview SeniorCare officials and representatives of other state and external agencies that have been affiliated with SeniorCare, and to get consumer perspectives on the program and its implementation. These interviews were followed up with additional series of phone interviews and review of background documentation. The purpose of this paper is to summarize our understanding of the Wisconsin SeniorCare demonstration program, its history and its first year of implementation, and to identify challenges and key issues for the evaluation. Our study has benefited from the full cooperation of Wisconsin officials.

Background: Origin of the Wisconsin SeniorCare Program

Development of Wisconsin SeniorCare and Medicaid 1115 Demonstration Application

Initial efforts to create a prescription drug assistance program for Wisconsin seniors (and thus the origins of Wisconsin SeniorCare) were generated at the community level, and were in large part spearheaded by the strong and well-established network of advocacy agencies, the Coalition of Wisconsin Aging Groups (CWAG), Wisconsin Citizen Action, and interested state legislators. In response to the rising cost of prescription drugs, especially in the absence of a Medicare drug benefit, senior advocates identified prescription drug assistance for low-income seniors as a top priority by 2000. The coalition, in conjunction with leadership in the Wisconsin legislature, designed the program during the winter and summer of 2000. The Wisconsin Governor's office and DHFS were involved, but several groups, including CWAG and AARP, also worked closely with legislators to develop the legislation. Discussions regarding the program design and operations included groups as divergent as CWAG, AARP, the Pharmacy Society of Wisconsin (independent pharmacists), the Wisconsin Medical Society, chain pharmacies, and drug manufacturers (PhRMA) representatives. Essentially, stakeholders whose opposition could threaten the legislation were consulted in the design of Wisconsin SeniorCare to create a program that would help seniors with as much public support as possible.

According to Wisconsin officials, and corroborated by legislators interviewed from both political parties, the program enjoyed widespread support in the state legislature. Legislators also assumed at the time that Wisconsin would receive approval of an 1115 Pharmacy Plus demonstration, as an earlier demonstration waiver for Badger Care had been successfully negotiated. If the demonstration application had not been approved by CMS, the program would likely have been prohibitively expensive, a possibility that concerned everyone.

The legislation passed as a part of the 2001 – 2003 biennial budget; however, it passed late, in August 2001, shortening the time line for planning operations. The benefit design for Wisconsin SeniorCare was spelled out in great detail in the authorizing legislation, and reflects

compromises in approach, eligibility levels, and reimbursement. Consumer groups had initially proposed a higher income eligibility level, to provide more middle class seniors access, but finally limited benefits to seniors with incomes at or below 240 percent FPL. Other areas of considerable discussion and compromise included: discounts for individuals in the spend down phase (eliminated); dollar vs. percentage copayments (dollar amounts were adopted); and the proposed legislation originally included the disabled covered by Medicare, but in final rules they were excluded because costs would have been prohibitive. Further, pharmacy reimbursement for legend drugs was initially linked to Medicaid rates, but interest groups successfully sought the Medicaid reimbursement rate plus five percent, to compensate for the administrative costs relating to coordination of benefits at point of service,[53] and providing guidance to participants regarding the current status of their benefit. To fund estimated benefits, $49.9 million in general fund revenues were appropriated in fiscal year 2002-2003, with an additional $1 million for initial administrative startup costs.[54] The legislation mandated that the program apply for a Medicaid 1115 demonstration to obtain federal matching funds for a portion of the program participant costs.

The SeniorCare Advisory Committee, comprised of the aging network (CWAG), AARP, the Pharmacist Society of WI, a physician, and other consumer advocates who had been active in development of the legislation, was convened to provide a consumer and stakeholder perspective to the program. The advisory group continues to meet regularly, and is still active in ongoing monitoring of access by seniors and communication to the public on enrollment processes and issues regarding the program. This group has been vocal in both promoting Wisconsin SeniorCare to the public, as well as communicating concerns about the program to SeniorCare staff.

The Wisconsin SeniorCare demonstration was approved based on the assumption that providing expanded prescription drug benefits to low-income seniors would keep them healthy, decreasing the number who would spend down and become eligible for Medicaid due to the high cost of prescription drugs. In addition, provision of a prescription drug benefit to seniors would also delay the need for costly nursing home care. The demonstration was approved with several terms and conditions, similar in concept to the earlier Pharmacy Plus demonstration approved in Illinois: a five year cap on Medicaid benefits costs for the aged to ensure budget neutrality over the demonstration years; federal funds would cover enrollees with incomes up to 200% FPL; enrollment fees were not matched; and rebate agreements had to be signed separately for the state-only program as Medicaid rebate agreements did not apply.[55] Details of the budget neutrality calculations and impact of Wisconsin SeniorCare on the Medicaid program are presented in later sections of this report.

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[53] Legislation indicated that SeniorCare is a payer of last resort, and the coordination of benefits (COB) was one of the more complicated elements of the program and discussions with pharmacists. COB required additional information about the spending from other prescription drug insurance beyond what Medicaid had required from pharmacists, so this was an issue in the original design, and still is for pharmacists at point of service.

[54] Another $900,000 was later appropriated for start-up.

[55] Source: Interviews with Wisconsin SeniorCare officials, CMS Terms and Conditions of Agreement for Wisconsin SeniorCare Medicaid 1115 waiver. See http://www.cms.gov/medicaid/1115/wi1115sc.asp for waiver application, terms and conditions

Planning and preparing for implementation

SeniorCare legislation set forth that the program had to develop rules and begin operation on September 1, 2002. Wisconsin was the only state to date that created a new pharmacy program through a Medicaid demonstration program; other states (for example Illinois and Vermont) used existing programs as a basis for designing and launching a new pharmacy program for low-income seniors. The federal demonstration application also had to be submitted as mandated in the legislation. As such, the development and planning activities were formidable, especially in the short time period stipulated. The federal demonstration application was submitted in March 2002, and was awarded four months later in July 2002, just as enrollment in Wisconsin SeniorCare began.

The time line below of Wisconsin SeniorCare implementation indicates how rapidly Wisconsin SeniorCare was planned, established and implemented:

Appendix Table W-1.1: Wisconsin SeniorCare implementation schedule

Date	Activity
August 2001	Legislation appropriates $49 million for Wisconsin SeniorCare, mandates application for Medicaid 1115 Pharmacy Plus demonstration
March 2002	CMS demonstration application submitted
July 1, 2002	Enrollment begins for Wisconsin SeniorCare
July 1, 2002	CMS demonstration approved
September 1, 2002	Program operation begins, benefit starts with 40,000 enrollees

DHFS undertook numerous major tasks in preparing for implementation, including: defining income eligibility levels for the state-only portion of the program; developing cost containment procedures within the parameters of the legislated plan design, such as reimbursement and cost sharing; and designing information systems. DHFS convened senior staff from several department bureaus to staff a core team that would be responsible for writing administrative rules to satisfy legislation and designing an implementation plan. Due to the considerable amount of work involved, DHFS officials report that a substantial number of DHFS Health Care Financing staff were in some way involved in the program planning process. In order to get the program operating quickly, Medicaid was to become the claims administrator for SeniorCare, incorporating SeniorCare into its drug utilization review (DUR) and point of service claims system. DHFS decided to use the existing fiscal agent for the Medicaid system because it worked well and officials perceived there to be insufficient time or no obvious advantages to entering a contract with a pharmacy benefits manager (PBM) to administer the benefit. The Medicaid fiscal agent, Electronic Data Systems (EDS) (and their vendor Deloitte Consulting), was helpful in modifying the Medicaid CARES data system to accommodate SeniorCare volume and a different plan design. These decisions resulted in a complex system crystallizing relatively quickly.

Wisconsin SeniorCare started accepting applications on July 1, 2002, and by September 1, when the program began operation, the program had processed 40,000 applications. The partnership between the DHFS and the Wisconsin aging coalition was instrumental in achieving initial enrollment success. The aging network employed an enrollment assistance model of "train the trainer" – DHFS taught advocates to understand the eligibility process and how to fill out applications, and advocates, in turn, assisted the public in community settings during special programs and as part of their regular advocacy work. Speed and success were also partially inspired by the fact that an election was looming.

Design of the Wisconsin SeniorCare Program

Wisconsin SeniorCare Eligibility Levels and Associated Benefits

The Wisconsin SeniorCare program is unique in its benefits design, having several levels of eligibility based on income, with different participant cost sharing at each level. Essentially, any Wisconsin resident age 65 and older and not enrolled in Medicaid[56] can enroll in the program, but will not be eligible for covered drug costs unless income goes below 240 percent FPL. There is no asset test for eligibility in SeniorCare, as there is for Wisconsin Medicaid. Enrollment can be done any time during the year, and must be renewed each year, on or before the membership anniversary. Table W-1.2 shows the cost sharing requirements for different levels of enrollment and reenrollment effective September 1, 2003:[57]

[56] Wisconsin Medicaid eligibility extends to 100 percent FPL, or $8,980 per individual, $12,120 per couple in 2003 with assets below $2000 for an individual.

[57] Prior to September 1 2003, the enrollment fee was $20, and the deductible for all income levels with a deductible was $500.

Appendix Table W-1.2: Eligibility levels for Wisconsin SeniorCare and associated cost sharing

Financing	Eligibility level	Eligibility definition and annual income for singles in 2003	Cost Sharing
Medicaid 1115 Demonstration portion	Level 1	Income up to 160% FPL ($14,368)	Enrollment fee $30, no deducible Copayment $5 for generic drugs, $15 for brand drugs
	Level 2a	Income between 160%FPL and 200% FPL ($14,369-$17,960)	Enrollment fee $30 Deductible $500 Copayment $5 for generic drugs, $15 for brand drugs
State only portion[58]	Level 2b	Income between 200% FPL and 240% FPL ($17,961-$21,552)	Enrollment fee $30 Deductible $850 Copayment $5 for generic drugs, $15 for brand drugs
	Level 3 ("Spend down")	Income above 240% FPL ($21,553 or more)	Enrollment fee $30 No covered benefits until member incurs prescription drug expenditures to meet 240% FPL requirement[59]

The SeniorCare and Medicaid management information system (MMIS) data system tracks participant prescription drug expenditures in the spend-down phase. Once a participant has spent enough on prescription drugs to meet the "spend down" level (240% FPL), MMIS will keep track of the deductible, and then copayments. Participants at the "spend down" level must pay the full retail price for drugs. However, while in the deductible phase of coverage, they are able to purchase drugs at the SeniorCare discounted price. The copayment amounts of $5 for generic drugs and $15 for brand name drugs and the deductible amounts are written into state statute. Cost sharing requirements for Wisconsin SeniorCare are similar to many private sector prescription drug insurance programs; in contrast, the Medicaid copayment is $1 per prescription

[58] State only portion is financed by state funds only, no federal matching funds.

[59] When a "spend down" member meets 240% FPL (at any point during the year), the deductible then begins, and after the first $850 in out of pocket expenditures, drugs are covered with participant cost sharing limited to a $5 generic and $15 brand per prescription copayment.

for generics and $3 per prescription for brand name drugs and $0.50 for over the counter (OTC) medications, with a $12 per recipient per provider per month out of pocket maximum. Mail order supply is not an option for Wisconsin SeniorCare at this time, but according to officials, it is being examined as a potential future feature.

Because SeniorCare enrollees may have other insurance, SeniorCare serves as the "insurer of last resort" and coordinates benefits with other insurance. Coordination of benefits works in a similar way for SeniorCare as it does for the Wisconsin Medicaid program, at the point of purchase. SeniorCare bills insurers and managed care plans with online billing capacity directly, and for those not able to be billed directly at point of purchase, SeniorCare pays and then bills the other insurer. Payments by other insurers are subtracted from accumulated out of pocket costs required to meet the deductible, but cost sharing required by other insurers will contribute to the participant's accumulated deductible amount. After the deductible is met, SeniorCare copayments remain $5 and $15, even if a participant's other insurance requires higher copayments.

Wisconsin SeniorCare Drug Benefit

The SeniorCare prescription drug benefit is based on, and largely mirrors, the Wisconsin Medicaid drug benefit, which includes drugs from manufacturers that have rebate agreements with Medicaid.[60] SeniorCare does not cover over the counter (OTC) drugs, except for insulins. For all prescription drugs, Wisconsin SeniorCare pays the lower of the Medicaid maximum allowable cost (MAC), the usual and customary price for that drug at the pharmacy, or average wholesale price (AWP) less seven percent. DHFS officials believe that the Wisconsin Medicaid MAC list prices prescription drugs more competitively than MAC lists commonly used in private sector PBMs.

By statute the SeniorCare pharmacy reimbursement rate is linked to Medicaid reimbursement, at a rate five percent higher than Medicaid, and changes with it. The 2003-2005 budget act revised pharmacy reimbursement for SeniorCare from AWP minus 6.25 percent to AWP minus 7 percent, effective August 15, 2003. Effective July 1, 2004, SeniorCare pharmacy reimbursement will decrease to AWP minus 8 percent. Pharmacy reimbursement rates are the same for both 1115 demonstration and non-1115 demonstration participant prescriptions.

One difference between demonstration and state-only SeniorCare that can affect covered benefits is the treatment of manufacturer rebates. Prescription drugs provided to participants covered under the Medicaid demonstration are covered by Medicaid manufacturer rebate agreements. This is not true for prescription drugs provided to non-demonstration (state-only funded) participants. Pharmaceutical manufacturers are required to sign separate SeniorCare rebate agreements with the state to ensure coverage of their products for non-demonstration participants. While most manufacturers have signed rebate agreements for the state-only

[60] The SeniorCare rebate agreements currently allow the programs to recover an average of approximately 18 percent of drug expenditures.

program, not all have done so. As of September 1, 2003, these manufacturers' products are no longer covered by Wisconsin SeniorCare.[61]

Wisconsin SeniorCare Benefit Management

The Wisconsin Medicaid program has in place a number of utilization management programs, including prospective and retrospective drug utilization review (DUR), prior authorization (PA), generic substitution requirements, supply limits and other claims system edits. Under one such drug management program, Pharmaceutical Care, pharmacists may be reimbursed an enhanced dispensing fee of up to $40 for therapeutic interchanges from more expensive to less expensive alternative drugs, along with patient education regarding the prescription. In addition, the Wisconsin Medicaid/SeniorCare system aggressively promotes the use of generics through use of its MAC list and through various utilization management strategies.

SeniorCare uses prior authorization to promote cost-effective quality care for participants. Most prior authorizations can be obtained through the online, real-time STAT-PA system. PA requests that fail to be approved through STAT-PA may be submitted on paper. Overall, the system works smoothly, according to DHFS staff, pharmacists, and several consumers interviewed. State staff report few complaints from constituents or providers about prior authorization. Wisconsin Medicaid and SeniorCare have implemented PA for several very commonly used classes of drugs (cholesterol reducing medications (statins), and proton pump inhibitors), such that only preferred agents are covered, and non-preferred agents require prior authorization.[62] For instance, Lipitor, the most commonly prescribed cholesterol reducing statin, is now subject to prior authorization.[63] The prior authorization requirement for statins applies only to new users; all individuals already stabilized on a non-preferred agent will receive a PA under a grandfather provision.[64] This reasonable approach slows the rate of savings to the program, but limits problems with individuals changing medications, and may eliminate the potential for increased physician visits sometimes associated with switching medications.

The SeniorCare program is not currently conducting retrospective DUR or profiling physicians to identify and influence prescribing patterns towards more cost-effective drugs. However, SeniorCare officials believe that the program's combined approach to drug management will generate savings greater than those achieved by many PBMs, which focus on encouraging preferred brand drugs. The Medicaid system is also set up to conduct quality checks and monitoring of recipients. Prospective DUR employs a system of alerts that may be activated when a claim is submitted by the pharmacy. These alerts check for drug/drug interactions, early or late refills, additive toxicity, and other DUR Board approved criteria. This approach to drug

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[61] A list of manufacturers with signed rebate agreements for Medicaid and SeniorCare can be found in Appendix 1 of the pharmacy data tables section of the Wisconsin Medicaid pharmacy handbook, which can be found on the internet at http://www.dhfs.state.wi.us/Medicaid2/handbooks/pharmacy/data_tables/datamainframe.htm.

[62] As of April 15, 2003, all cholesterol reducing medications, except lovastatin, became subject to prior authorization for participants not already stabilized on these medications. As of May 7, all proton pump inhibitor antiulcerants, except omeprazole and Protonix, were subject to prior authorization. (Source: Wisconsin Medicaid Pharmacy Handbook, revised March 2003).

[63] Because Prilosec, the most commonly prescribed proton pump inhibitor, is now approved for over the counter use and marketed as such, it is no longer covered through SeniorCare.

[64] ACE Inhibitors also include a grandfathering provision in the PA guidelines.

management is seen by officials as flexible and effective. We do not have data at this time to support this in a comparable environment, and it is a reasonable area to investigate further.[65]

The choice not to go with a prescription benefits manager (PBM) was relatively easy. As noted, DHFS already had a successful pharmacy management and claims processing system. Wisconsin Medicaid has a considerable MAC list, so SeniorCare designers were skeptical that a PBM would leverage better prices and might limit savings. With an outside vendor such as a PBM, the system would have been more complex, and might not be able to conform to the specific requirements of the statute. State internal management and claims processing ensured that their system would be Medicaid compatible**.**

Program Organization, Claims Administration and Management

Wisconsin SeniorCare is a program within the Department of Health and Family Services (DHFS). The core team that was responsible for developing, planning and now operating the SeniorCare program is comprised of individuals within several Department of Family and Health Services bureaus that also support the Medicaid program, including: the Bureau of Fee-For-Service Health Care Benefits, Health Care Systems and Operations, Program Integrity, Health Care Eligibility, and Managed Care Programs. The role of each of these is detailed in the Operational Protocol approved by CMS for the program. In order to implement the program and run it on an ongoing basis, six additional employees were hired within these bureaus to perform new functions associated with SeniorCare. The core team is a working group that takes responsibility for managing and monitoring the course of SeniorCare, under the direction of the Administrator of the Division of Health Care Financing.

Electronic Data Systems (EDS) manages claims processing for Medicaid and SeniorCare. Deloitte Consulting is the eligibility agent for both Medicaid and SeniorCare. Both of these entities have been involved in Wisconsin SeniorCare operations since the program started, and the state has not reported significant problems with either relationship or the claims processing system.

Regarding enrollment, EDS processes enrollment forms, which are available in several languages, and, according to SeniorCare officials, have been revised throughout the year as necessary to improve the form. EDS accepts the enrollment fee and sends applications into the scanning operation. Scanning operations were initially provided by the Wisconsin Department of Administration; however, as of January 13, 2003, scanning operations were brought in-house to EDS. The Client Assistance for Reenrollment and Economic Support (CARES) system, maintained by the state, supports the enrollment process and verifies applicant information. As noted, there was limited time to get the program up and running, and limited funds for implementation, which created a challenge in enrollment outreach. SeniorCare also needed a system to process applications quickly, with a scanning process, in order to obtain the specific needed data efficiently.

[65] The Brandeis evaluation team is applying for external foundation funding to evaluate the impact of various plan design and management features on SeniorCare enrollment, utilization and expenditures. The proposed research uses an approach of matching eligible individuals and enrollees across two states for comparison on several plan dimensions.

Claims and Data Monitoring Systems

The SeniorCare claims system was built on the existing Medicaid system, but it is more complex, because the Medicaid pharmacy benefit does not have spend-down levels and deductibles. Pharmacists may be asked to carry out tasks both in terms of coordination of benefits and member support -- in particular, with the claims tracking information provided through the real-time POS claims system, pharmacists can assist SeniorCare participants understand how close they are to meeting deductibles and other details of the benefit. Further, chain drug stores had to make some changes in software to accommodate SeniorCare needs (i.e., coordination of benefits). However, the point of sale system used by SeniorCare is one that is familiar to pharmacists, and the pharmacists have reported that the claims system works without problems.

The SeniorCare data management information system developed for the program ("datamart") is sophisticated and flexible, with near real time enrollment, expenditure, and utilization data available for reports that can be generated easily without analysts going into the main Medicaid/SeniorCare claims system. In building the SeniorCare datamart, data from the application and claims goes into a data warehouse, which had been built earlier to support Wisconsin Medicaid reporting functions, and the datamart is able to generate reports as needed.[66] The datamart allows analysts to monitor the program on an ongoing basis rather than relying on periodic reports as PBMs generate for their customers. SeniorCare officials designed the system so they would know at any point all information about enrollment, claims, and reimbursement. The datamart provides good decision support information, and it is set up to cost out budget options, as well as being able to aggregate drug use and costs by therapeutic class.

Wisconsin SeniorCare Enrollment Outreach and Customer Support

In Wisconsin, six regions (made up of 72 counties plus tribal areas) contract with benefit specialists, and distribute funds available for senior programs. Senior services are delivered at the county level. There is at least one benefit specialist or aide in each county, with aides in some counties. These trained personnel are experienced in assisting seniors on various issues, including housing evictions, tax credits, food stamp enrollment, etc.

The senior network is well established with a long history of providing support and advocacy.[67] Advocates report a generally positive relationship between DHFS and elderly networks. These networks at the county level were a main resource for providing information and enrolling seniors in SeniorCare, and also for providing ongoing support to enrollees.

Initial marketing of SeniorCare included brochures and television spots for the program, the 800 number was repeatedly announced through the aging network and the AARP, and stations to help people sign up were set up in pharmacies and clinics and at safety net providers. AARP volunteers set up publicity at meal sites to enroll people in the program. DHFS maintains a website with a very user-friendly preapplication guide that calculates an individual's eligibility, with a worksheet that indicates whether they should join.

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[66] SeniorCare datamart reports have provided supporting data for this evaluation.

[67] As an example of how stable the aging networks are, a community options program for elders has been in existence for 21 years.

The SeniorCare application is submitted through the mail. Area benefits specialists are available to seniors to assist them in filling out the forms. As in other states, the SeniorCare program in Wisconsin did not want to associate the program with Medicaid thus avoiding the "welfare" stigma. Therefore, managers were careful to keep the process separate from Medicaid.

DHFS had 68 staff dedicated to SeniorCare early in the year when SeniorCare started, mostly involved in customer service, with 20 customer representatives dedicated to answering the phones. Temporary staff was hired by the fiscal agent at the outset to accommodate heavy call volume; later the staff was scaled back, with 15-20 staff running day-to-day customer support. This number has again been increased to support reenrollment during the months before the anniversary of the program. The DHFS website also provides ongoing information regarding coverage and news.

Pharmacists play a large role in Wisconsin SeniorCare in terms of ongoing customer support. It is at the pharmacy that enrollees can find out where they are in terms of spend down, or the deductible. The SeniorCare website includes a drug inquiry tool for pharmacies and other health care providers to identify and calculate ingredient rates of drugs covered by SeniorCare.

Wisconsin Context for Prescription Drug Coverage for Low-income Seniors

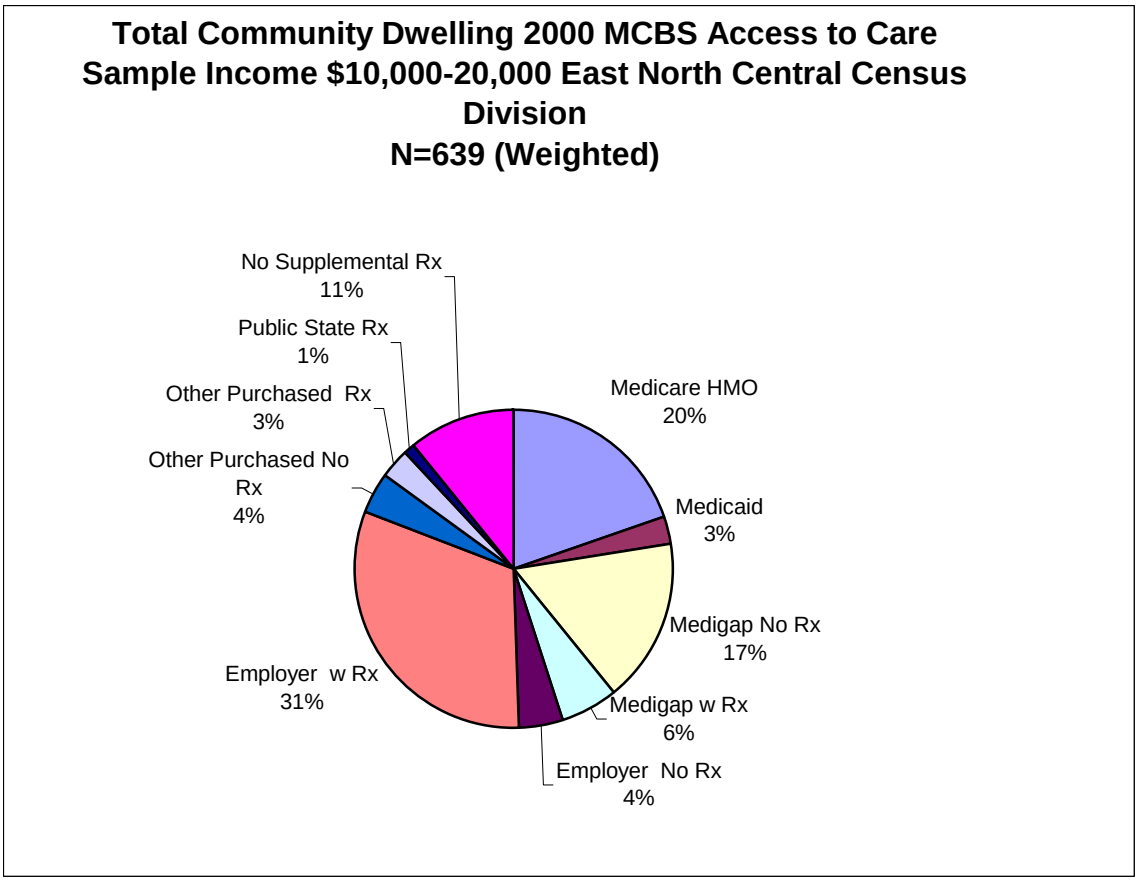
Prescription Drug Coverage for Wisconsin Seniors

According to the U.S. Census 2000, approximately 147,133 Wisconsin residents age 65 and older fall within the income range of 100-200 percent FPL.[68] JEN Associates, Inc. has provided a preliminary analysis of the year 2000 Medicare Current Beneficiary Survey (MCBS) examining the sources of prescription drug coverage for Medicare seniors, in the North Central region states, in the income category between $10,000 and $20,000, a similar level to that of SeniorCare enrollees.[69] See Figure W-1.1.

[68] Source: U.S. Census Bureau, 2000 Census, Summary File 3.

[69] States in the East North Central region include: Illinois, Wisconsin, Ohio, Michigan and Indiana.

Appendix Figure W-1. 1: 2000 Prescription drug coverage status of community dwelling Medicare beneficiaries age 65+, with incomes between $10,000 and $20,000[70]



Assuming that these regional data roughly apply to Wisconsin, approximately 36 percent of this group (approximately 53,000) reported no prescription drug coverage (no supplemental insurance, or supplemental medical without prescription drug coverage, and no state prescription drug coverage program before SeniorCare). A considerable portion of individuals with additional coverage (Medigap, Medicare HMO, or other purchased insurance, 30 percent total), could be expected to drop coverage or enroll in Wisconsin SeniorCare in addition to maintaining current coverage, adding further to the pool of seniors who might enroll in SeniorCare. Thus, over half of seniors in this income category would potentially enroll in the demonstration portion of SeniorCare, or more than 73,000 individuals (.50 x147,133). These numbers are only rough estimates for the purpose of providing a context for prescription drug coverage for the population covered by Wisconsin SeniorCare and as a guide for potential take-up rates for further analysis. It is also important to note that these estimates reflect the prescription drug coverage environment when SeniorCare was first implemented, and they do not take into account coverage changes associated with the Medicare drug benefit after 2005.

[70] Source: JEN Associates, Inc, preliminary analysis.

Wisconsin Medicaid and the Projected Impact of SeniorCare

In 2002, the total Medicaid population age 65 + for the state of Wisconsin was approximately 66,223, or 9.5 percent of Medicare seniors, and 13 percent of the total state Medicaid population.[71] Managed care penetration for Medicare in Wisconsin is relatively low (one percent of Medicare beneficiaries with all incomes, compared to 12 percent nationally).[72] Managed care penetration for all Medicaid enrollees (all programs, all ages) is below the national average, at 48.6 percent compared to the U.S. average of 57.5%.73

The impact of the SeniorCare program on Wisconsin Medicaid is an important component of the SeniorCare demonstration, as CMS requires Medicaid budget neutrality at the end of the five year demonstration. Thus, estimates are made at the outset of the 1115 demonstration application of how the SeniorCare program will impact Wisconsin Medicaid. For the SeniorCare demonstration application, Medicaid expenditures were projected both with and without SeniorCare.

Officials within DHFS calculated the budget impact and neutrality projections for the SeniorCare Medicaid demonstration, based on several sources in the literature and state data. Historical expenditure information was required for the budget neutrality assumptions; cost of care for Medicaid enrollees age 65+ for all services was modeled with and without the Medicaid 1115 demonstration program. Expected costs of the SeniorCare program itself were also modeled. However, modeling the fiscal details of a new program that had never existed required economists, actuaries, and budget analysts to make various assumptions regarding likely enrollment and utilization, fine-tuned to apply to Wisconsin circumstances.

Some of the major budget assumptions and sources include:

1. Medicaid growth without the demonstration was based on trending forward of historic data, but with some assumptions regarding likely enrollment increases moving forward (raising enrollment trend by close to 2%). The agreed upon rates were that Medicaid enrollment without the demonstration program would increase at two percent annually, and expenditures per person at 6.3 percent annually.

2. SeniorCare program costs: The basis for cost projections was in part the senior prescription assistance program from New York, which covered 170,000 people. Cost projections were also based on Medicare Current Beneficiary Survey (MCBS) national estimates.

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[71] Kaiser Family Foundation State Health Facts (http://www.statehealthfacts.kff.org/cgi-bin/healthfacts.cgi?action=compare&category=Medicaid+%26+SCHIP&subcategory=Medicaid+Enrollment&topic=Distribution+by+Enrollment+Group&link_category=&link_subcategory=&link_topic=&viewas=&showregions=0&sortby=&printerfriendly=0&datatype=number)

[72] Kaiser Family Foundation State Health Facts (http://www.statehealthfacts.kff.org/cgi-bin/healthfacts.cgi?action=compare&category=Medicare&subcategory=Managed+Care&topic=Enrollees+as+%25+Total+Beneficiaries)

[73] http://www.cms.hhs.gov/medicaid/managedcare/mmcpr02.pdf

3. The Medicaid enrollment diversion rate was the "break even" decrease in Medicaid enrollment necessary to accomplish budget neutrality. Annual diversion rates of 2.5 to five percent were reasonable and accepted. Diversions were assumed to be permanent over the remainder of SeniorCare (i.e. without diversion, once entering a nursing home, a senior would have remained alive and on Medicaid throughout the remainder of the program years).

Enrollment numbers were developed from the Medicare Current Beneficiary estimates of cost and other insurance in this population, Social Security Administration sources, published information from other similar state pharmacy assistance programs and the Wisconsin Family Health Survey. Estimates assumed that the program could enroll most eligible seniors very quickly during the first year (no ramp up in numbers). DHFS consultant pharmacists contributed to the diversion savings estimates, by calculating the implications of averting a major event like a stroke, with likely volumes. Scenarios included: stroke, diabetes management, and other major medical conditions.

Cost estimates for senior drug spending in SeniorCare relied primarily on data reported for Medicare beneficiaries in the 1995 MCBS. Medicaid data for enrollees age 65 and older was available but not used, as DHFS analysts believed the elderly Medicaid population to be too different from the population likely to enroll in SeniorCare. DHFS assumed that the benefit design would encourage greater use of low-cost drugs (particularly considering the potential effect of cost sharing in a tiered formulary with considerable generic incentives [$5/$15], and use of prior authorization). Those assumptions were built into projections. An inflation rate of about 18 percent was used to project 2002 drug costs. (This was within a reasonable range, as actual national expenditure growth on prescription drugs for the insured population has been close to this rate.[74])

The assumptions for enrollment, cost and budget neutrality were accepted by CMS, but CMS did not allow federal matching funds for the additional administrative costs of the program, nor the enrollment fee. Wisconsin's 1115 demonstration program had been modeled to some extent after the Illinois information provided in its demonstration application, with the exception of several items. One example is that in the Wisconsin demonstration, lower enrollment growth rates for Wisconsin Medicaid were allowed than had been allowed for Illinois.

To preserve Medicaid budget neutrality during the demonstration, a budget cap was agreed upon and stated in the Terms and Conditions of Approval of the Medicaid 1115 demonstration for the SeniorCare demonstration. The cap is the federal share of a projected total cost of the Medicaid program (including the SeniorCare component) at the end of the five-year demonstration, and is $8,378,335,931. While the cap is a cumulative five-year target, the Terms of Agreement also lists a schedule of annual cumulative target expenditures. If the state exceeds the cumulative cap at any point, it must submit a corrective plan to CMS. The budget cumulative target for the first year of the Wisconsin SeniorCare demonstration is $1,809,720,561[75]

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[74] CMS projections suggest that drug expenditure growth will level off and growth rates will decline in the coming years. However, in the most recent data for insured programs for 2002, growth has remained close to 18 percent (Express Scripts Inc., 2002 Drug Trend Report).

[75] http://www.cms.gov/medicaid/1115/witc.pdf

Other Coverage Programs in Wisconsin That May Affect SeniorCare and Medicaid Costs

At present, Wisconsin has in place numerous Medicaid demonstration, or "waiver," programs that could have varying degrees of impact on Wisconsin SeniorCare, or that may in turn be affected by Wisconsin SeniorCare. The Wisconsin Health Insurance Risk Sharing Plan (HIRSP) insures over 17,000 individuals, with over 450 seniors who are not otherwise eligible for insurance elsewhere. While this program covers a very limited number of seniors, it may include several who have very high prescription drug expenditures, and who will not require SeniorCare. As well, some low-income seniors who otherwise would be eligible for SeniorCare may be enrolled in a Medicaid demonstration program for comprehensive community-based services, and thus would not enroll in Wisconsin SeniorCare. At the same time, if entry into demonstration programs available to dual eligible or other low-income seniors is alleviated or postponed for some individuals by the presence of SeniorCare, enrollment or selection into these demonstrations could be affected. Also, in terms of Medicaid enrollment and expenditures for the elderly population, ongoing demonstrations are likely keeping frail elderly out of nursing homes independent of the impact of SeniorCare. Some of the Medicaid demonstration programs in Wisconsin that are designed to keep the frail elderly in communities rather than nursing homes through care management and comprehensive coverage include:

- Programs for All Inclusive Care for the Elderly (PACE)
- Family Care (Milwaukee County and several other counties)
- Wisconsin Partnership
- Statewide Home and Community Based Services demonstrations

Finally, as of December 2003, legislation has passed creating a prescription drug benefit for Medicare, beginning in 2006. This addition to Medicare will very likely impact Wisconsin SeniorCare in the near future, and Wisconsin DHFS is currently assessing how the legislation will affect SeniorCare, and will be considering options for the future.

Implementation of Wisconsin SeniorCare in Year 1

In spite of the short development and planning time, Wisconsin SeniorCare has been implemented smoothly, with the only departure from expectations being the lower than projected enrollment. SeniorCare has had significant enrollment in the first 12 months of operation. At the same time, as in other states that have implemented meaningful pharmacy assistance for low-income seniors, the program has had a very beneficial effect on many seniors' lives. The consumer advisory group quite actively expresses the interests of program enrollees, and is involved in outreach and support. This group has been very complimentary and positive about the program in spite of various suggestions along the way for improvements. One state legislator involved with development of the plan said that no other legislation she has been involved in has generated more expressions of thanks than this one. In an example provided, one pharmacist in a rural area of the state reported that after the program became operational, the number of medications dispensed to his elderly customers tripled (this has not yet been corroborated).

Wisconsin SeniorCare Enrollment

The latest Wisconsin SeniorCare enrollment as of August 31, 2003 (one year into the program's implementation) is 93,552 persons, of which 68,292 are in the demonstration portion, broken down further in the following table:

Appendix Table W-1.3: Enrollment in SeniorCare as of August 31 2003[76]

	Enrollment level	Level Description	Enrollee numbers
Medicaid 1115 demonstration portion	Level 1	Up to 160% FPL	48,337
	Level 2a	160%-200% FPL	19,955
Total demonstration enrollment		**Up to 200% FPL**	**68,292**
State only portion	Level 2b	200%-240% FPL	18,134
	Level 3	over 240% FPL	7,126
Total all levels		All incomes	93,552

Overall program enrollment through August 31, 2003, or 12 months of the program (Medicaid demonstration plus state programs) reflects approximately 13 percent of all Wisconsin seniors. The Medicaid demonstration portion updated as of August 31, 2003 (a full year of the program) includes nearly half of seniors in the 100-200% FPL range when year 2000 census numbers are used.[77] Using data from the 2000 Medicare beneficiary survey shown earlier, Wisconsin SeniorCare enrollment likely reflects a vast majority of Wisconsin seniors between 100 and 200 percent FPL who do not have other sources of prescription drug coverage, or who might have been expected to drop other coverage to join SeniorCare. Thus, what was initially thought to be a low enrollment rate (initial projections suggested that over 100,000 individuals would join in the first year) may in fact be due to the initial projections being high due to the sources available at the time of the legislation and Medicaid demonstration application. Enrollment projections initially done by the Legislative Fiscal Bureau as part of legislation development were based on conservative assumptions developed with available resources, but prior to release of 2000 census data. Enrollment and cost projections for the next several years were updated in May 2003 to reflect new census data and enrollment.

[76] Source: Wisconsin DHFS Datamart.

[77] See previous section, U.S. Census Bureau, 2000 Census, Summary File 3.

Drug Utilization and Cost Estimates for the First Year of the Program

SeniorCare program costs for the first year of the program are $79.5 million (excluding patient deductibles and copayments, rebate income and including the demonstration and non-Medicaid proportions of the program). The Medicaid demonstration portion is $62.2 million total in drug costs for the first 12 months of the program, from September 1, 2002 through August 31, 2003. According to SeniorCare staff, the average cost per prescription is lower than expected, due to a higher than anticipated proportion of generic medications being used (52%). Some of the utilization and cost statistics for the first year of 2003, through August 31, 2003 are presented in Table W-1.4 below. [78]

[78] Source: Draft Annual and SeniorCare Quarterly Reports, August 2003, and interviews with SeniorCare officials. Reports include detailed breakdowns of age and gender composition of SeniorCare enrollment.

Appendix Table W-1.4: Wisconsin SeniorCare Program utilization and costs through August 31, 2003 (12 months of program)[80]

Item	Medicaid 1115 demonstration only (<200%FPL)	Full program (All income levels, including demonstration portion)
Total number of enrollees	68,292	93,552
Total expenditures on prescription drugs, including member share, and excluding spend down (>240%)	$90.7 million (not net of rebates)[79]	$125.9 million (not net of rebates)
Total state paid expenditures on prescription drugs, excluding member share, and excluding spend down (>240%)	$62.2 million (not net of rebates)	$ 79.5 million (not net of rebates)
Total number of prescriptions paid by all payers (includes all sources for members)	2.4 million	3.2 million
Total number of prescriptions paid by state, not including prescriptions paid by members and other insurance	1.9 million	2.4 million
Proportion of enrollees with at least one prescription during the year	98%	95%
Average total cost per enrollee (state and member share, excluding other insurance, through August 2003/total #enrollees)	$1,329	$1,345
Average annual state cost per enrollee (end total/end total)	$911	$850
Overall member cost share, excluding enrollment fee ([total allowable- state cost] / total allowable)	31.4%	37%

[79] Total rebate income averages an estimated 18 percent of drug costs.

[80] Source: Wisconsin SeniorCare Datamart, reviewed by SeniorCare program officials. Program administration costs are not included in this table. DHFS in large part leveraged the resources of the Medicaid program to ramp up and operate SeniorCare. DHFS is currently completing estimates of SeniorCare administrative cost.

Appendix Table W-1.4 Continued: Wisconsin SeniorCare Program utilization and costs through August 31, 2003 (12 months of program) [81]

Item	Medicaid 1115 demonstration only (<200%FPL)	Full program (All income levels, including demonstration portion)
Average annual number of prescriptions per enrollee (all sources) (total rx allowable/participants enrolled)	34.6	34.0
Average total cost per brand drug	$64.91	$66.08
Average total cost per generic drug	$14.09	$14.65
Average total price per prescription (includes member share, total$/total rx)	$38.41	$39.58
Generic use rate	52.2%	51.5%
Average price paid by state per prescription (excludes member and other insurance [COB-recovered] share)	$31.98	$33.35

Program Costs and Medicaid Expenditures

Due to the lower cost of the program (stemming partly from lower than anticipated enrollment, and lower cost per prescription), Wisconsin Medicaid is well under the budget neutrality cap for the first budget period of Wisconsin SeniorCare. According to Wisconsin SeniorCare officials, Medicaid program expenditures for recipients age 65+ were $1.38 billion as of June 30, 2003; combined with the $47.1 million expended on the Medicaid demonstration portion of the SeniorCare program, the total cost is $1.43 billion, which is below the first period budget neutrality threshold of $1.8 billion.

One unanticipated cost emerged in the program's first year, as reported by SeniorCare officials. This was related to coordination of benefits, as SeniorCare is insurer of last resort. The expectation was that 38 percent of Medicaid demonstration population enrollees would have other coverage that could be the first payer through coordination of benefits. It appears that this

[81] Source: Wisconsin SeniorCare Datamart, reviewed by SeniorCare program officials. Program administration costs are not included in this table. DHFS in large part leveraged the resources of the Medicaid program to ramp up and operate SeniorCare. DHFS is currently completing estimates of SeniorCare administrative cost.

estimate was likely too high; it turned out that a much smaller proportion of Medicaid demonstration enrollees (seven percent) had other insurance for prescription drugs.

Medications Purchased Through Wisconsin SeniorCare

Table W-1.5 lists the top medications purchased through Wisconsin SeniorCare, in terms of total spending.

Appendix Table W-1.5: Top medications purchased through SeniorCare, as of August 31, 2003[82]

Medication or group	Percent of total drug expenditures
Atorvastatin (Lipitor)	5.64%
Amlodipine (Norvasc)	3.40%
Simvastatin (Zocor)	2.96%
Clopidogrel (Plavix)	2.95%
Alendronic acid (Fosamax)	2.49%
Fluticasone (Flovent)	2.36%
Lansoprazole (Prevacid)	2.05%
Omeprazole (Prilosec & generics)	2.02%
Celecoxib (Celebrex)	1.72%
Pantoprazole (Protonix)	1.65%
Diltiazem (Cardizem & generics)	1.51%
Metroprolol (Lopressor & generics)	1.46%
L-thyroxine (thyroid)	1.43%
Donepezil (Aricept)	1.42%
Pravastatin (Pravachol)	1.36%
Paroxetine (Paxil)	1.36%
Losartan (Cozaar)	1.20%
Warfarin (Coumadin & generics)	1.19%
Sertraline (Zoloft)	1.17%
Rofecoxib (Vioxx)	1.15%
Top 20 drugs	40.5%

As Table W-1.5 shows, the top 20 drugs account for nearly half of SeniorCare drug expenditures. The fact that the majority of these expenditures are for cardiovascular drugs, many of which have generic equivalents, contributes to the high generic use rate reported by SeniorCare. Also

[82] Wisconsin SeniorCare Data Mart analysis.

indicated in the table, only two of the top expenditure-generating drugs are antidepressants (paroxetine [Paxil] and sertaline [Zoloft]).[83] Low use of antidepressants, which are often expensive, also contributes to lower expenditures in this population. Prilosec is now available over the counter, so, in effect, it will no longer be covered by SeniorCare, and as more brand drugs are placed on prior authorization (as discussed earlier), further savings may be realized.

Wisconsin SeniorCare Customer Support and Feedback

DHFS division has approximately 15-20 staff involved in customer service and hired temporary staff during the first months of the program. This number has again been increased to support reenrollment during the months before the anniversary of the program. The DHFS internet site has served 26,000 seniors as of March 2003.

The reasons for calls to the technical support line during the year include: how to fill out the application; the status of applications; benefits, and why the pharmacy is charging a certain amount. The Wisconsin SeniorCare Quarterly Reports document customer service calls for eligibility determination and member appeals. In the quarter ending June 2003, for instance, 14,000 customer service calls were received to determine eligibility. There were fewer than 60 appeals for benefits or eligibility determination, most of which were resolved prior to a hearing. Reasons are listed in the June 2003 Quarterly Report.

Wisconsin SeniorCare Renewal Process

Enrollment for SeniorCare is on an annual basis[84], with the anniversary the date of enrollment staggered throughout the year as is the deductible periods for enrollees. Preparing for the renewal process, including developing a system prompting enrollees, and creating a pre-printed renewal process, all had to be completed in the months prior to September 1, 2003, when the bulk of enrollees had to reenroll. Reenrollment applications are sent out the month prior to the final month of their coverage year. Several changes were made to the enrollment form, with input from the aging networks. Additionally, the final form was shared with aging network representatives, so that advocates could be trained before the reenrollment forms went out. Enrollees are required to estimate their income prospectively, updating their income with reenrollment.

The state reports that reenrollment has gone as planned, in spite of the challenges inherent in designing reenrollment procedures prior to the state budget just recently being finalized. As of November 2003, the renewal process has been quite successful. Over 95 percent of SeniorCare enrollees who received any benefits through the program during the first membership year have reenrolled in the program. Non-renewals each month comprise between ten and sixteen percent

[83] In the Medicaid program as a whole, mental health drugs are highly represented, but not in SeniorCare.

[84] An applicant is eligible for one year of enrollment the first month following that month in which all enrollment requirements are satisfied.

of all renewal forms sent out for the first few months of SeniorCare's second year of implementation. [85]

Additional Challenges

In the middle of the first year of operation (March 2003), pharmacy reimbursement was thought by pharmacists to be at risk, as the Wisconsin state budget was being negotiated. The state faced a structural deficit, but there was a general feeling that legislators would maintain the priority of health and benefit programs.

One proposal would have cut pharmacy reimbursement for ingredient cost of medications from 105 percent to 100 percent of the Medicaid reimbursement. Simultaneously, the pharmacists were facing a decrease in the Medicaid reimbursement rate. Perhaps attesting to the popularity of SeniorCare, the importance of the pharmacists' role in providing customer support, and the strength of the state pharmacy association, a compromise was made, which maintained SeniorCare reimbursement at five percent above Medicaid. Medicaid cut its pharmacy payments from average wholesale price (AWP) less 11.25 percent to AWP less 12 percent effective August 2003, and then AWP less 13 percent after July 2004. Therefore, SeniorCare reimbursement is currently AWP less 7 percent through July 2004.

Representatives of the Pharmacy Society of Wisconsin indicate that SeniorCare is an efficiently run program that has made a real difference in the lives of seniors. An issue arose during the implementation year, in which pharmacists voiced concern that manufacturer rebates for the state-only portion of SeniorCare were slow to come in, and pharmacists wanted increased pressure on manufacturers of the drugs that did not have a rebate agreement. However, as of September 2003, the issue has been resolved, as these drugs without a rebate agreement will no longer be covered.

[85] Source: DHFS internal analysis of SeniorCare non-renewals.

Key Areas to Follow in Evaluation of Wisconsin SeniorCare

Legislators, consumer groups, and providers report that SeniorCare has considerable legislative support. Wisconsin SeniorCare has successfully leveraged Medicaid resources and federal matching funds to provide services to an expanded population of seniors, while limiting the state costs of pharmacy assistance. At the same time, the state fiscal environment can affect SeniorCare as it moves forward. As SeniorCare pharmacy reimbursement is linked to Medicaid reimbursement rates, decreases in Medicaid pharmacy reimbursement could potentially affect SeniorCare by lowering pharmacy reimbursement rates for SeniorCare. However, when the threat of lowered pharmacy reimbursement rates became an issue during the first year of Wisconsin SeniorCare, the popularity of the program allowed for a successful compromise. Depending on ongoing state fiscal conditions, the program could again be affected by further budgetary changes to Medicaid and the availability of Medicare Part D prescription drug benefits beginning 2006.

Medicaid 1115 demonstration budget neutrality is based on the premise that prescription drug access will divert some clients from admission into a nursing home. The amount of savings is based on numerous assumptions including: the rate of growth of Medicaid without SeniorCare, the expected diversion rate, and other factors. The principles are similar to those for Illinois and other states that have implemented a Medicaid 1115 demonstration through the Pharmacy Plus initiative for senior drug demonstrations. As CMS has had more experience with these demonstrations, and as successive states have committed to such agreements, its conditions for budget neutrality may have become more restrictive.[86] Various assumptions about future growth in Medicaid spending in Wisconsin without the SeniorCare demonstration and "diversion rates" may reflect evolution of CMS experience in other states when the Wisconsin 1115 demonstration was negotiated. Certainly the enactment of the Medicare prescription drug benefit in 2006 will likely have an effect on Medicaid expenditures and future SeniorCare budget, and is an area we will follow.

Prior to Wisconsin SeniorCare benefit taking effect, Wisconsin DHFS conducted a very extensive outreach program through existing county aging networks, which have facilitated the initial enrollment process. Enrollment to date was initially thought to be lower than anticipated in original projections, but it is clear now that enrollment appeared artificially low because of the earlier census data with which projections were made. Projections have now been updated based on 2000 census data, and Wisconsin SeniorCare has been quite successful in reaching the eligible population.

The decision for Wisconsin SeniorCare not to go with a PBM for drug management was based on demonstrated proficiency, the need for rapid start-up, and vendor flexibility to accommodate new program specifications. The Medicaid system performed well for the program and for pharmacies. The state Medicaid data vendor (EDS) assisted Wisconsin SeniorCare in

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[86] Kaiser Commission on Medicaid and the Uninsured, *The Financing of Pharmacy Plus Waivers: Tradeoffs Between Expanding Rx Coverage and Global Caps in Medicaid*, May 2003, shows that Medicaid growth allowed under Pharmacy Plus Waivers has decreased with successive state waiver approvals after the initial approval for Illinois.

developing data systems for the program, and the ongoing relationships appear to be without significant problems.

Community support has been a valuable resource for Wisconsin SeniorCare in its first year; collaboration with community advocates has worked well, and is an area that we will continue to follow as a successful partnership. The SeniorCare Advisory Committee is very actively involved in monitoring the impact of SeniorCare policies on the community and providing feedback to DHFS. While they have been vocal regarding concerns during program implementation (to the program officials and to Brandeis evaluators), they express strong support of the program and its approach, and are strong partners in enrollment, communication efforts, and ongoing consumer support for enrollees.

Brandeis Site Visit Details

Dates: Site visit to Madison, WI, March 13-14, 2003

Follow up phone conferences, data analyses.

Brandeis Site Visit Team:

Cindy Parks Thomas, Task leader for site visit

Donald Shepard, Principal Investigator of State Pharmacy Assistance Evaluation

Christine Bishop, Task leader for economic evaluations

Roberta Constantine, Project manager (at time of site visit)

Interviewees

SeniorCare/Wisconsin DHFS

17 Senior managers in the Division of Family and Health Services including the Wisconsin state Medicaid program

Legislators

State Representative and State Senator involved in leadership positions in health care committees.

Advisory group and aging network members

Two members, one MD Community Pharmacist

Representative of the Pharmacy Society of WI

Benefit Specialist