

**Evaluation of Wisconsin's BadgerCare Plus Core Plan for
Adults without Dependent Children
Report #3
Is Early Utilization Distorted by Pent-Up Demand?**



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EXECUTIVE SUMMARY

This report stands as the third of three that present findings from an evaluation of Wisconsin's BadgerCare Plus Core Plan - a 2009 expansion of coverage to low-income adults without dependent children (hereafter referred to as "childless adults"). The Project Goal is as follows:

To assess the effectiveness of the Wisconsin CORE plan in 1) delivering appropriate care to its members, 2) achieving DHS' goals for members' efficiency of service utilization and 3) promoting members' progress toward health improved outcomes.

The Core Plan launched with an automatic enrollment of approximately 12,000 very low-income uninsured childless adults from Milwaukee County's previous General Assistance Medical Program (GAMP). In July 2009, enrollment was opened statewide to low-income uninsured childless adults. Enrollment quickly surpassed state projections and, on October 9, 2009, enrollment was closed; applications made after that date were placed on a waiting list. Total enrollment with this cap reached a peak of 65,057 and then steadily declined with attrition.

This evaluation uses administrative claims to compare the medical care utilization of 9,619 prior GAMP-Core Plan childless adults both prior to and one year following their enrollment into the Core Plan. It also assesses the experience of 56,103 other Core Plan members who enrolled between July 15 and October 9, 2009.

Report #1 presents findings about the service utilization of the Core Plan population. Report #2 presents findings from an evaluation of the Health Needs Assessment, assessing its utility in identifying the presence of chronic conditions and other health needs, and of identifying future resource utilization.

The first report shows that enrollment into the Core Plan from GAMP brought significant changes in service utilization. In particular, Core Plan enrollment for the former GAMP population led to large increases in ED and outpatient visits and large decreases in hospitalizations for this population. Report #2 shows that the HNA, while its accuracy varies by condition, adds significant predictive value over the use of demographics alone to predict utilization at the upper percentiles.

This third report focuses on the following questions:

Does the Core Plan early utilization appear to be distorted by pent-up demand, suggesting that utilization (and thus cost) might change, level off or decline in later months?

- 1. How does the early enrollment utilization pattern compare for former GAMP members to their prior GAMP-program utilization?*
- 2. How does the early enrollment utilization pattern differ for former GAMP members and other Core members?*
- 3. How does the early enrollment utilization pattern of non-GAMP Core Plan members compare to a comparable matched group of early enrollees in BC Standard or Benchmark Plan?*

This study finds no transitory early spike in utilization for three types of utilization – office visits, emergency department, or hospitalization – during the study period. There may be several reasons for this lack of service response indicating pent-up demand. Regardless of the response, the findings hold several implications for new coverage expansions: some cohorts of new enrollees will maintain consistent and relatively low utilization. But for some groups of enrollees, particularly those that appear to come from a status of chronic or long-term uninsurance, the health care system and budgets will need to accommodate a sustained overall increase in outpatient utilization.

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I. Background

The State of Wisconsin in 2009 launched the BadgerCare Plus Core Plan for adults without dependent children (“childless adults”). Eligible individuals have incomes up to 200% of the Federal Poverty Line (FPL) and do not have access to other forms of health insurance. The Core plan’s program offers a pared down version of those benefits available through the State’s existing Medicaid/CHIP program (BadgerCare Plus). Enrollment for Core Plan opened in July 2009 and was ultimately capped at approximately 65,000 enrollees. In January 2009, prior to opening enrollment to all eligible persons, the State automatically transitioned twelve thousand low income childless adults from Milwaukee County’s General Assistance Medical Program (GAMP) to the Core Plan.

GAMP was established in 1997 in response to the closing of Milwaukee County’s Doyne Hospital, which had provided health care to the indigent population of Milwaukee County. GAMP primarily served to reimburse hospitals and other providers for their expenses related to providing care to chronically uninsured indigent adults with a need for health services. GAMP also contracted with community-based clinics to provide primary and specialty care for enrollees. Individuals could only apply if they were presenting themselves for health care services at a participating provider clinic or emergency department (which included all hospitals in Milwaukee County). To qualify for GAMP, an applicant’s income could not exceed 100% of the federal poverty level for most family sizes. Once approved, enrollment was for six months, after which a person would have to re-enroll.

All enrolled GAMP members as of December 26, 2008 were automatically transitioned to the BadgerCare Plus Core plan on January 1, 2009, at which point GAMP ceased to exist. General Core Plan enrollment opened on July 15, 2009.¹ Table 1a provides summary demographic characteristics of the former GAMP members who enrolled in the Core Plan and Table 1b provides the same information for other Core enrollees. In the GAMP sample, forty-two percent is female. The average age is 43.5 with 26.5% being less than age 35, 55% being between 35 and 55, and 18% being age 55 or older. As the race and ethnicity of a public health program member is not relevant to program eligibility, it is often not reported in the administrative file. Race / ethnicity is missing for 41% of the sample. 23% of the sample is reported as White, 36% as Black, and 7% as Hispanic. The main difference between the two samples: a smaller proportion of the GAMP sample is white and the GAMP sample is somewhat older than the Core sample.

The Core Plan differs from GAMP in several important ways. The Core Plan provides health care coverage to adults with no dependent children who have incomes below 200% FPL. Once enrolled, members receive a managed care benefit package and face little cost sharing. With some exceptions, coverage is not available to persons who already have any form of private health insurance, quit their job, or voluntarily dropped any health insurance in the last 12 months.

GAMP was a general relief program, rather than an insurance program. As such it differed from insurance coverage in two key features. First, application for the program occurred only upon presentation as an uninsured patient at a participating provider site, while the Core Plan, like other

¹Application levels for the Core Plan immediately exceeded projections and program budget. Total program enrollment reached a high of 65,057. As a result of this unanticipated demand for the program, an enrollment cap was imposed on October 9, 2009. Applications received after that date were placed on a waiting list and (with a few exceptions for cancer and heart disease patients) none of the waiting list applicants have been enrolled into Core Plan coverage.

public insurance programs allowed participants to enroll in advance of needing treatment. Interviews with program administrators indicate that GAMP consisted of two general types of enrollees. The first type came in through the emergency department and often transitioned out of coverage at the time of re-enrollment. The second type was more stable and used the program for obtaining needed prescriptions and management of chronic illness, generally requiring at least monthly contact with the health system.

Table 1: Demographic Characteristics of the Core Plan and BadgerCare Plus Populations

	Former GAMP Core Plan	Non-GAMP Core Plan	BadgerCare Plus Parents/Caretaker Adults
Number of Enrollees	9,619	56,1031	44,264
Female	41.98%	49.06%	79.30%
Age (Mean/average)	43.50	40.07	31.72
Age < 35	26.50%	38.35%	66.59%
Age >=35 & Age < 55	55.17%	41.42%	31.38%
Age >=55	18.33%	20.23%	2.03%
White	23.28%	77.30%	24.56%
Black	35.54%	14.51%	54.03%
Hispanic	6.74%	3.97%	15.21%
Race / Ethnicity Missing	41.48%	6.12%	3.20%

Source: *BadgerCare Plus Core Plan Enrollment File*

Note: Race/ethnicity percentages do not sum to 100% because of overlap among categories.

Second, GAMP served as a mechanism for providers to receive partial payment for services that would have otherwise been uncompensated, with providers typically paying any enrollment fees for beneficiaries. One goal under GAMP was an equitable distribution of burden among providers under the limited amount of money available for the program. Because total inpatient outlays were capped, after the point that the cap was reached hospitals no longer received payments on claims (though claims were submitted regardless of payment status). This means that treatment decisions were made in many cases without expectation of compensation for the providers. From a provider perspective, the Core Plan is superior because payments under Core are not capped or subject to priority setting. All emergency departments and hospitals in Milwaukee County were required or chose to accept GAMP as a payer. Federally-Qualified Health Centers acted as the principal primary care providers for GAMP. The network of primary care providers was small.

There are some key differences in terms of the services covered by GAMP and by the Core Plan but, as noted above, GAMP paid for services as a safety net program so the meaning of a covered service is less clear. Up until the exhaustion of the annual budget, GAMP paid for hospitalizations and physician visits. Emergency department visits were paid unless the visit was determined to be non-emergent. No payment was provided for services such as behavioral health, health education, physical or occupational therapy, or alcohol or substance treatment. Under the Core Plan, all of the services that GAMP paid for

are covered, as well as the additional services mentioned above that GAMP did not pay for. The Core Plan requires nominal co-payments for hospital stays and for physician office visits. Co-payments for emergency department visits apply only for those with income greater than 100% FPL (which is uncommon among the former GAMP population) and in the more likely scenario of the visit not resulting in a hospital admission.

II. Research Questions

Pent-up demand is a significant concern as the nation and states undertake expansions of health insurance coverage while facing limits both in health services capacity and in program budgets. Much has been written about the shortage of primary care physicians and the need to absorb 32 million newly insured persons into the health delivery system.² Those who gain health insurance coverage will have financial access to preventive services that they may have previously foregone, some of which will lead to new diagnoses and a newly recognized need for treatment. Others will present with pre-existing conditions that have not had proper treatment, and for which care has been delayed. The anticipated pent-up demand is expected to strain the health care workforce and possibly exceed budget and actuarial projections.

The first report submitted under the BadgerCare Core Plan evaluation observed that BadgerCare Plus Core Plan had a significant effect on the utilization of health care by the low-income, uninsured, childless adult population of Wisconsin:

1. This Core Plan population substantially increased their use of the emergency department. Much of this increase was for ambulatory care sensitive reasons, non-emergent care and for care related to mental health, drug, and alcohol treatment.
2. This Core Plan population had a sizeable reduction in their rate of hospitalizations. The fact that preventive quality indices also declined -- for example, admissions for hypertension -- suggests that the underlying health of this population may have improved, and that increased access to ambulatory care may have led to such improvement.
3. This Core Plan study found a large increase in the number of outpatient visits. However, this increase was driven entirely by increased use of specialty care; no increase in the use of primary and preventive care was observed.

Wisconsin's experience with covering uninsured childless adults, therefore, shows mixed results. On the one hand, hospitalizations declined substantially as did hospitalizations related to ACS conditions. This finding strongly suggests that the underlying health of this population improved as a result of increased access to outpatient care. On the other hand, the study finds a dramatic increase in emergency department visits for ACS conditions and no increase in the utilization of primary or preventive care in an outpatient setting. Public insurance coverage seems to be reducing hospitalizations and improving health through increased preventive care, but this care is being obtained in the emergency department rather than in a more appropriate primary care setting. Thus, despite the potential benefits of

² Hoffman C, Damico A, Garfield R. Research Brief: Insurance Coverage and Access to Care in Primary Care Shortage Areas. Kaiser Family Foundation. February 2011. Available at: <http://www.kff.org/insurance/upload/8161.pdf>

expanding public insurance, this population still faces challenges either with lack of access to and/or appropriate use of primary care in physician offices and community-based settings.

This third study was intended to address whether the observed utilization was a function of pent-up demand or other distortions in the early months of program enrollment. That is, would utilization level off or change to a more normalized pattern after a period of adjustment to the Core Plan coverage program?

Research Questions

Does the Core Plan early utilization appear to be distorted by pent-up demand, suggesting that utilization (and thus cost) might change, level off or decline in later months?

1. *How does the early enrollment utilization pattern compare for former GAMP members to their prior GAMP-program utilization?*
2. *How does the early enrollment utilization pattern differ for former GAMP members and other Core members?*
3. *How does the early enrollment utilization pattern of non-GAMP Core Plan members compare to a comparable matched group of early enrollees in BC Standard or Benchmark Plan?*

For this study, we measure service response that would be consistent with pent-up demand as follows:

1) We look for an early enrollment utilization spike followed by a later utilization drop-off, and 2) We compare Core Plan enrollees' early utilization trend to that of the normalized overall utilization (not early enrollment) of parents and caretaker adults in the BadgerCare Plus program.

III. Methods, Data, and Outcome Measures

The data for all analyses were drawn from the State's administrative claims database (called the InterChange system) and from the State's eligibility determination system (called the CARES database). The analyses consider two different samples of Core Plan enrollees. The first is the former-GAMP members who were automatically enrolled in the Core Plan in January 2009 (GAMP) who participated in the GAMP program before January 2009 and auto-enrolled to the CORE plan in January 2009 and remained until December 2010 or beyond. The second are those Core Plan members who enrolled voluntarily from an uninsured status, between July 1 and October 9, 2009, and stayed throughout December 2010 (NGC).³

In addition, both of these groups' utilization was compared to a third group – that of the parents and caretaker adults enrolled in BadgerCare Plus from January 2008 to December 2010 (BCP). This third comparison group, in that its coverage eligibility has existed for several years, provides a measure of utilization by a group of adults in a more steady state of access to public coverage – and thus theoretically not demonstrating pent-up demand.

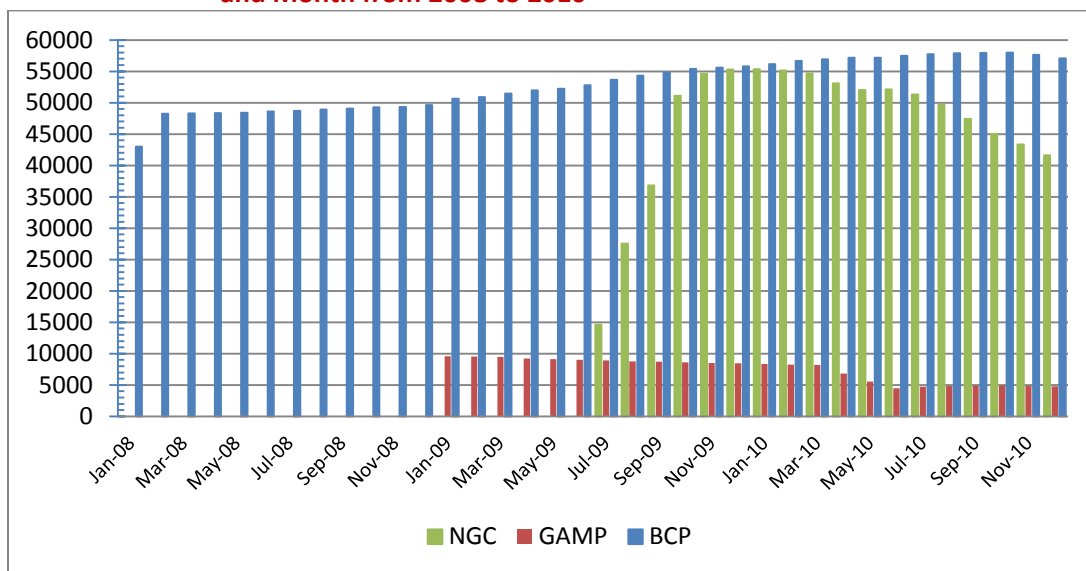
For the GAMP sample, claims data were merged from the GAMP program in 2008 with claims data from the Core Plan in 2009 and with demographic data from the Core Plan enrollment file. Claims were matched for the same set of individuals across years using social security numbers (SSN). For a subset of enrollees, SSN matches did not succeed: 3,333 individuals with GAMP claims in December 2008 (and who should have been automatically enrolled into the Core Plan) were not found in the Core Plan

³This study's claims data files go through June 2011, but because of potential lags in the filing of claims by providers, a more restricted time frame is used for analysis.

enrollment file; 3,600 Core Plan enrollees with medical status codes indicating that they are members of the former GAMP population had no GAMP claims in 2008 (it is possible, though unlikely, for an individual in GAMP not to have any claims over the course of a year). The individuals in these two samples of 'unmatched' claims are believed by the study team to be largely the same. However, the study limited the sample to the 9,619 individuals who were able to match, leaving a balanced panel. Outcomes were compared for the matched and unmatched samples in both 2008 and 2009 and no differences, on average, were found.

Figure 1 shows the monthly total numbers of BadgerCare enrollees by the plans. While most of the enrollees entered the program by mid-month, some entered in the end of the month.

Figure 1. Number of Enrollees in Wisconsin Medicaid by Programs and Month from 2008 to 2010



The number of non-GAMP Core (NGC) enrollees increased rapidly in the first four months so, for our subsequent analysis, we limit the observation of non-GAMP enrollees to those who entered between July and September 2009, and remained in the program up to December 2010. Thus, for our analysis of pent-up demand, we have 755,244 person-months in BCP sample, 90,648 in GAMP sample and 533,925 in NGC sample.

The outcomes for our pent-up demand analysis include three types of utilization: Emergency Department visits (ED), hospitalization admissions, and outpatient office visits. The number of emergency department (ED) visits was counted by the total number of days ever visiting the department within the month. The number of hospitalizations in a given month was calculated by the total number of spells staying in a hospital. The carried-over hospital stay from the prior month was not counted toward the utilization of the current month. The outpatient office visits were counted as the total number of visits within the month. The observed outcomes included ever use of ED, hospitalization and outpatient office visits and the average number of visits (admits) for the users. (BadgerCare Core Plan Evaluation Report #1 provides a more complete discussion of the outcome variables.)

One limitation of the administrative data is that it lacks a formal enrollment file for the GAMP program; as such we have only claims for this population for the year 2008. In order to account for exposure time enrollment status in GAMP is imputed. Imputation is done by allowing the first month in 2008 in which a claim was filed for a beneficiary to begin an enrollment spell. By this account, many spells begin in January but many also begin in December, with spells distributed fairly evenly across other months. The average length of enrollment in GAMP by this measure is 7.43 months.

We examined the utilization trends controlling for seasonal effects. The reasoning behind this analysis is as follows: if the transition to GAMP happened during a season in which utilization would have been higher than that for subsequent seasons *regardless* of the insurance transition – a hypothetical example is a flu season – any identified “pent-up demand” effect could not be separated from a seasonal effect. In this analysis we net out seasonal effects, allowing us to isolate any potential “pent-up demand” effects. Seasons were as four quarters of a year. Specifically, January, February, and March were the first quarter, April, May and June were the second quarter, July, August and September were the third quarter, and October, November, and December were the fourth quarter. We pooled the monthly records for all full-term enrollees from Medicaid programs together. We controlled for Medicaid plans, duration and interactions between plans and duration. The function was defined by the following equation:

$$Probit(Y_j = 1) = \alpha + \sum_{k=2}^4 \beta_k X_{kj}^q + \sum_{l=2}^3 \beta_l X_{lj}^p + \sum_{m=2}^{36} \beta_m X_{mj}^T + \sum_{n=2}^{72} \beta_n (X^P X^T)_{nj}.$$

In the equation, Y_j indicates the utilization of each person per month for the type of service. X_{kj}^q indicates three dichotomous variables for four quarters with the first quarter as the reference category; X_{lj}^p indicates two dichotomous variables for GAMP and NGC groups with BCP as the omitted group; X_{mj}^T indicates 35 dichotomous variables for the 36 months of observation; and $(X^P X^T)_{nj}$ indicates the interaction terms of Medicaid plans and the utilization months. We then predicted the probabilities by programs and types of utilization, net of quarterly effects.⁴

IV. Results

Figures 2 and 3 show the utilization trends by rates and numbers, and Figure 4 shows the predicted probabilities for each month by plans, net of the quarterly effects.

1. For full-term Wisconsin Medicaid adults in BadgerCare Plus and in Core Plan, the proportion of enrollees with emergency department visits, hospitalization, and outpatient office visits did not increase from 2008 to 2010. (Figure 2)
2. BadgerCare Plus adults show a slight decline in hospitalization, regardless of whether the quarterly seasonal effects were controlled for or not. This could indicate some improved health with longevity in the program, but would require further study in order to validate. (Figures 2b and 4b)

⁴ A similar equation of calendar-month effects was also analyzed. That is, instead of controlling for quarterly effects, we estimated the predicted probabilities of all outcome measures netting out calendar-month effects. Month by month patterns bounce up and down in a random fashion, again providing evidence against the presence of pent-up demand.

3. The predicted probability of utilization of ED visits was very similar between BadgerCare Plus and former GAMP Core Plan adults. The Non-GAMP Core Plan adults had lower probability of ED utilization and hospitalization than both the former GAMP Core Plan adults and the BadgerCare Plus adults. (Figure 4)
4. In any given month, the former GAMP Core Plan enrollees were more likely to have an outpatient office visit than Non-GAMP or BadgerCare Plus enrollees for any given month. (Figures 2c and 4c)
5. Among all adults, the average numbers of visits or admits were fairly steady throughout the observed period. There were no important differences between programs. (Figure 3)
6. Controlling for seasonal effects (quarterly), there was no evidence of a service response that would be consistent with pent-up demand – as would be indicated by an early enrollment utilization spike or a later utilization drop-off -- for three types of utilization – office visits, emergency department, or hospitalization -- for Core Plan enrollees. (Figure 4)

V. Discussion

This study finds no evidence of service response to relieve pent-up demand for three types of utilization – office visits, emergency department, and hospitalization – during the study period. This period through calendar year 2010 would allow 24 months of observed coverage for the former GAMP enrollees and 15-18 months of observed coverage for the non-GAMP enrollees.

Among all adults, the average numbers of outpatient and emergency department visits or hospital admits were fairly steady throughout the observed period. The lower utilization by the non-GAMP cohort may reflect the differences between the non-GAMP Core Plan cohort – those who enrolled voluntarily – and those coming from the GAMP. (see Table 1b) BadgerCare Core Plan Evaluation Report #1 (Table 7) details that the non-GAMP Core Plan enrollees are younger and about half as likely to enter the program with chronic health conditions. It is also possible that they enter the program from a relatively new status of uninsured, having lost jobs in the recent economic downturn. In this way, they represent a different user profile than that of a chronically uninsured, very low-income enrollee. If this is the case, the utilization experience of this group may reflect more closely what might be expected by the new enrollees in the PPACA coverage expansions, particularly for those beyond the lowest income ranges. Again, this would require further study in order to validate.

A 2011 study of the Oregon Health Insurance Experiment reported increases in hospital, outpatient and drug utilization but found no evidence of transiently large utilization response in that one-year period.⁵ Our Wisconsin's experience reported here are consistent in this regard. A 2002 study of use of medical services over nearly two years among newly insured children in CHIP programs in South Carolina and West Virginia also reports no evidence of pent-up demand for medical care among newly insured children.⁶

⁵ Finkelstein et al. 2011. "The Oregon Health Insurance Experiment: Evidence from the First Year" NBER Working Paper #17190.

⁶ Goldstein K, Goldstein RL. Demand for Medical Services Among Previously Uninsured Children: The Roles of Race and Rurality. South Carolina Rural Health Research Center. October 2002.

Wisconsin's experience might be compared to a study by Milliman of the Healthy Indiana Plan, which covered a similar population of previously ineligible adults in a pared-down Medicaid program.⁷ The earliest to enroll in Indiana's plan, similar to Wisconsin's Core Plan, had high prevalence of chronic conditions (thus, apparently, needing coverage most) and incurred high utilization of both inpatient and outpatient services at the outset. However, Indiana's utilization later declined, while showing increasing pharmacy drug costs – presumably as their conditions became stabilized on a medication regime. These new enrollees appeared to exhibit significant pent-up demand -- a need for immediate medical care particularly linked to conditions for which services had been deferred. Wisconsin's population exhibited no such decline in utilization over time.

The differences in the experiences of these various programs and with their populations may be due to several factors:

1. The status of the safety net services available to the population prior to their enrollment would affect the kind of services and utilization experiences of the previously uninsured population.
2. The availability of services within the program would affect the utilization within the early months of the program or determine whether utilization, even in a pent-up demand environment, might be constrained or delayed due to capacity limitations.
3. The duration of uninsured spells for the population prior their enrollment in the program: A program that enrolls large numbers of chronically or long-term uninsured might expect to see larger increases in some kinds of utilization that may not resolve within a year of enrollment (as in the case of the former GAMP Core Plan population). A program that enrolls cyclically uninsured persons who had only recently lost coverage due to recent unemployment may experience less significant increases in post-enrollment utilization (as in the case of the non-GAMP Core Plan population).

A newly released study of the impact of national CHIP coverage expansions on children's utilization of physician services between the years 1997-2009 finds no association between new coverage and aggregate physician utilization.⁸ The study finds instead that the generosity of provider payments primarily determines the overall quantity of and access to services. It appears then that that supply side effects – capacity limits, the use of managed care tools or relatively low reimbursement rates – limit the utilization effects of the coverage expansion and may have constrained the service response to any pent-up demand in the Core Plan population.

These findings suggest that utilization under new coverage expansions will not lead to early-enrollment spikes in demand and that observed utilization changes are not transitory. Rather, for some groups of enrollees, particularly those coming from a status of chronic or long-term uninsured, the health care system and budgets will need to accommodate a sustained overall increase in outpatient utilization.

⁷ Damler R. Experience under the Healthy Indiana Plan: The short-term challenges of expanding coverage to the uninsured. Milliman, Inc. August 2009. Available at: <http://publications.milliman.com/research/health-rr/pdfs/experience-under-healthy-indiana.pdf>

⁸ White C. 2012. A Comparison of Two Approaches to Increasing Access to Care: Expanding Coverage versus Increasing Physician Fees. Health Services Research Vol. 47(3.1): 893-1223. <http://www.hschange.org/CONTENT/1273/1273.pdf>

Figure 2. Observed health service utilization among Wisconsin Medicaid enrollees from 2008 to 2010, by type of service and plan

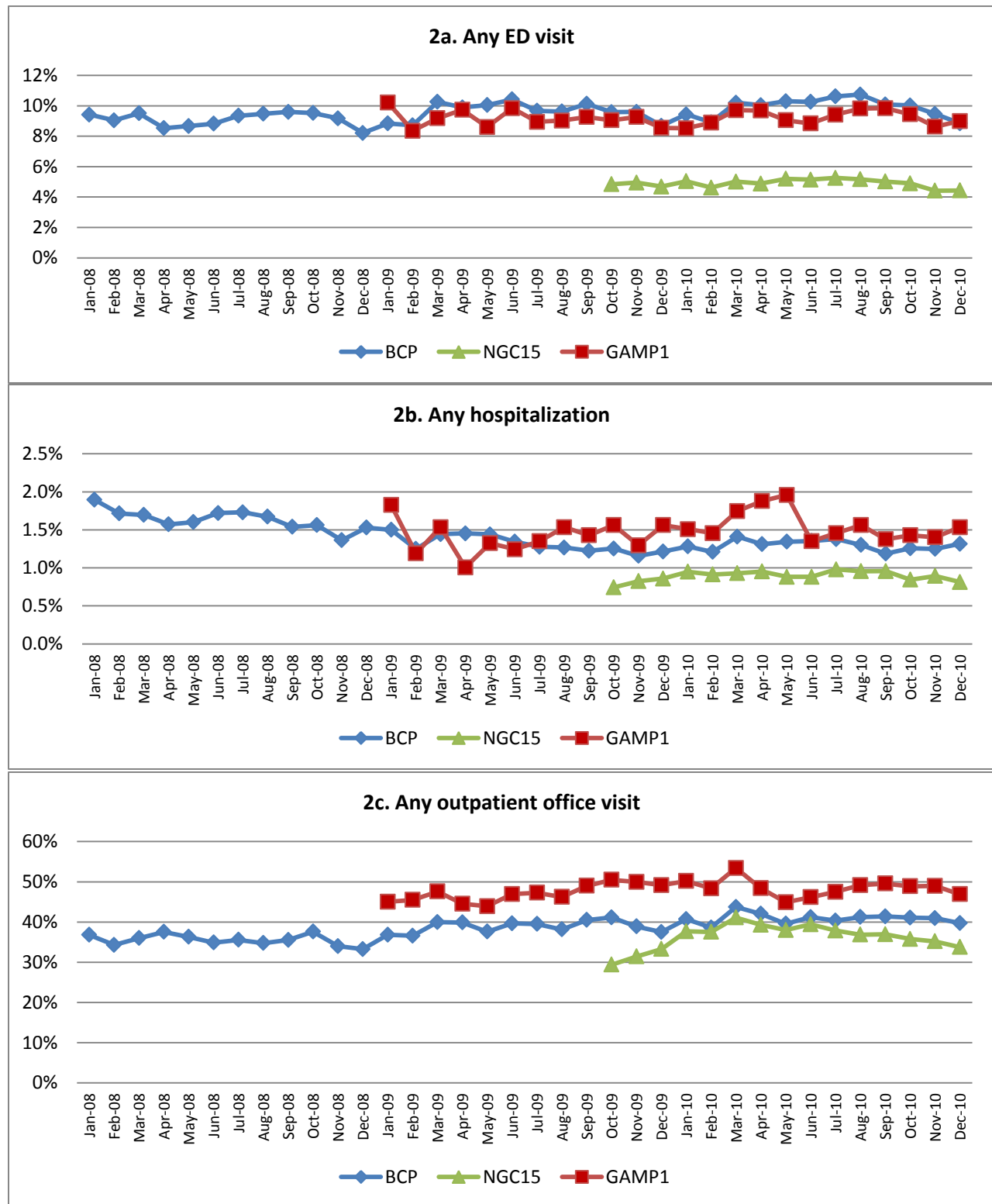


Figure 3. Average (observed) average number of services among Wisconsin Medicaid enrollees by type of service and plan

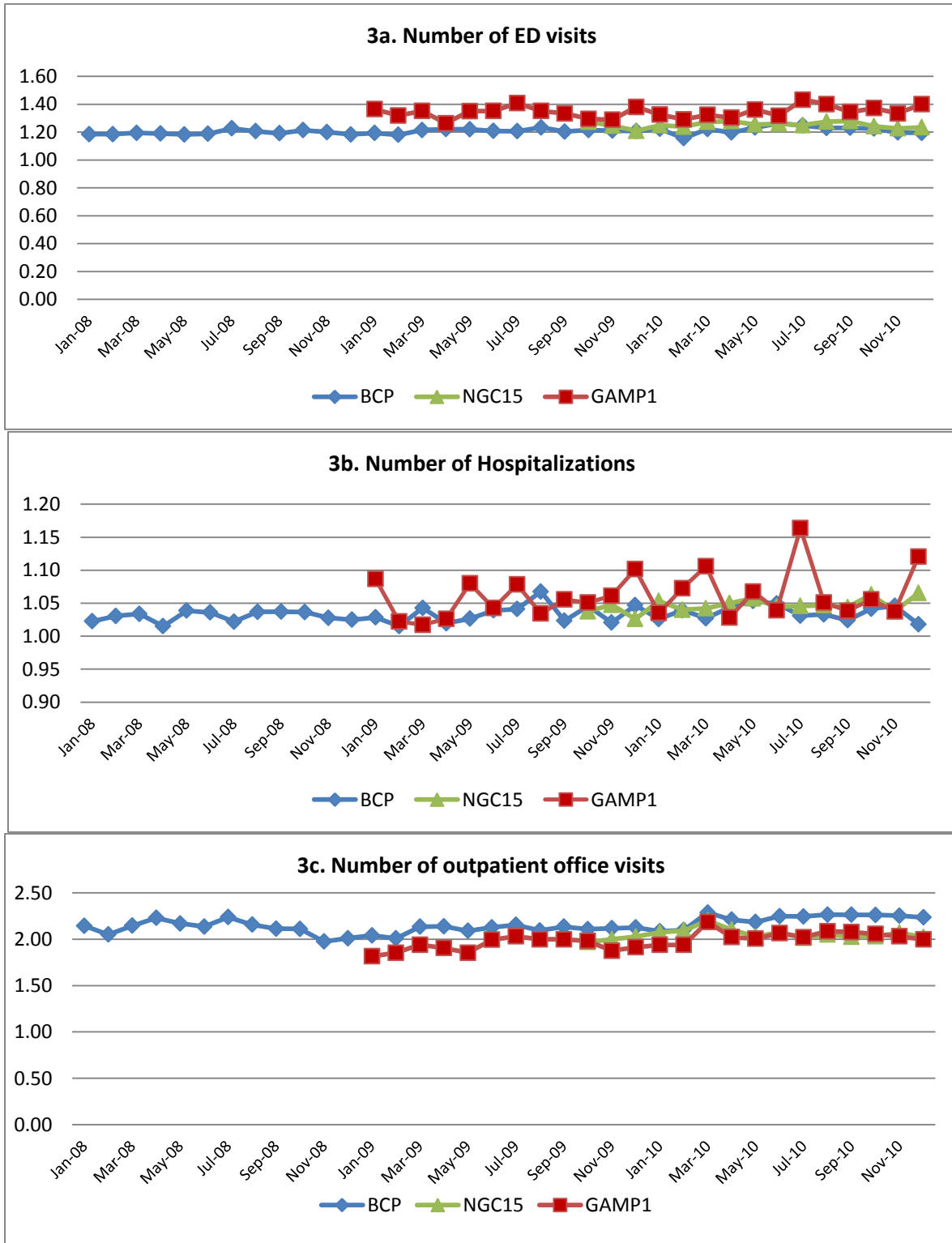
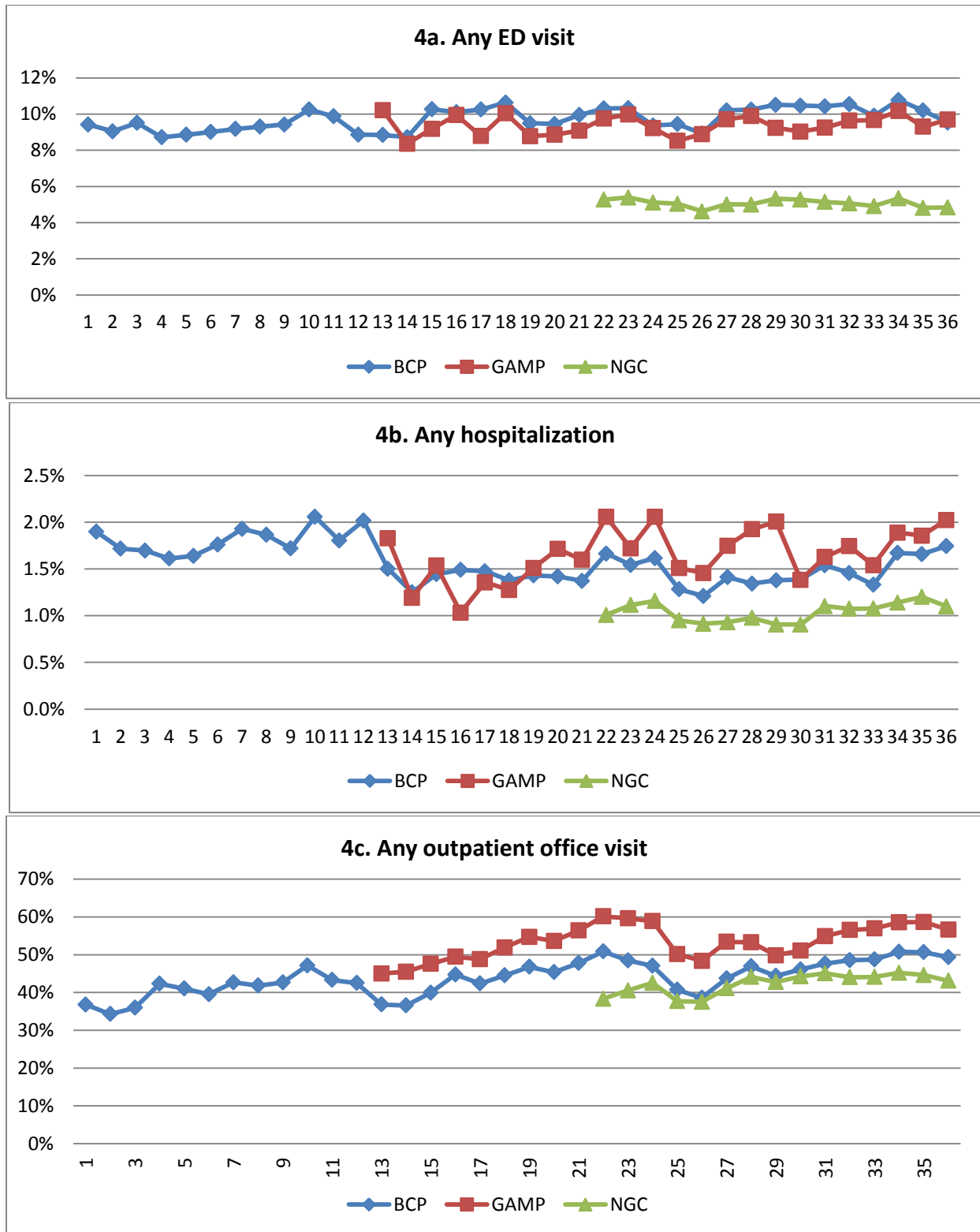


Figure 4. Predicted probabilities of service utilization among Wisconsin Medicaid enrollees 2008-2010, net of quarterly effects, by types of service and plan



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