

**Better Payment Policies for
Quality of Care:
Fostering the Business Case for
Quality Phase I – Medicaid
Demonstrations**

**Final Report – Site Summaries
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UNC

**THE CECIL G. SHEPS CENTER
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Project Background

Optima Health's quality enhancing initiative (QEI) was implemented through the *Business Case for Quality* (BCQ), a multi-site demonstration project designed by the Center for Health Care Strategies (CHCS) to test the existence of a business case for quality for Medicaid managed care organizations. Ten Medicaid managed care entities implemented pilot interventions that addressed a range of clinical conditions and intervention strategies. The interventions, launched in April 2004, were evaluated by a research team at the University of North Carolina at Chapel Hill. BCQ was funded by the Robert Wood Johnson Foundation (RWJF) and The Commonwealth Fund (CMWF).

Virginia

Optima Health

The Medicaid program in the state of Virginia is administered by the Department of Medical Assistance Services (DMAS). The Medicaid population is served through mandatory managed care programs in select geographical areas throughout the state. Eligibility categories are TANF children and adults, pregnant women, Supplemental Security Insurance (SSI), aged, blind/disabled, and children in the SCHIP. Recipients are locked into a health plan after their first 90-days of eligibility, and are allowed to change plans only once a year during open enrollment. All enrollees must maintain Medicaid eligibility. Pregnant women are covered for pregnancy and for 60 days after delivery. Newborns are guaranteed continuous eligibility for up to 90 days after birth to allow the parent time to enroll the child in Medicaid.

Sentara Healthcare is an integrated healthcare delivery system in the Commonwealth which contracts with Virginia DMAS to serve the Medicaid population. Optima Family Care (OFC) is a fully-capitated Medicaid HMO product underwritten by Optima Health Plan. It is Virginia's second largest single license Medicaid HMO in terms of both membership (with 130,000 members) and service area.

Reimbursement Model

OFC receives a per member per month capitation payment, adjusted by age, gender and region. They are responsible for all associated medical expense as well as administrative overhead and operating margin. OFC provides all federally mandated Medicaid benefits as well as pharmacy, mental health and medical non-emergent transportation services for enrollees. OFC has a fiduciary responsibility to offer high quality, evidence-based care at the lowest possible cost.

Quality Enhancing Intervention

The focus of the QEI is to promote access to prenatal and infant care to improve outcomes for high risk pregnant women and their infants. Improvement in care is to include a reduction in neonatal intensive care days and associated costs. SHC operates the Partners in Pregnancy Program (PnP) in collaboration with the Comprehensive Health Investment Project (CHIP) of Virginia for high risk moms in their service area. PnP is a community-based pregnancy care partnership which uses intensive home-based visitations that include ongoing risk evaluation, education, monitoring of medical conditions, and referrals and coordinated communication. This QEI expands PnP to include the Virginia

DMAS Policy and Research Division and to measure the ongoing outcomes in quality of life and costs through enhanced efforts at health promotion, disease prevention and delivery of appropriate care during pregnancy and the first year of life of the child. The program expands the care delivery model of the current PnP program partnership to include:

- continued follow up of the mother
- assistance in maintaining eligibility for medical services
- maternal education focusing on behaviors
- lifestyles and conditions that affect the health of the family
- completing immunizations for the child
- well-baby care as per established guidelines
- identifying early developmental concerns during the infant's first year of life

Target Population

The target population was identified from pregnant Optima Family Care enrolled women based on a demographic assessment of high risk factors, including past history of pre-term labor, low birth weight and other measures of poor health outcomes. Approximately 125 women were identified and contacted to offer participation in the program. Eighty-five women chose to participate, although one was eliminated because there were no subsequent claims for a baby. Pregnant women entered the QEI beginning in October, 2003, and were enrolled through June, 2004. To track their pregnancy, delivery and after care, their claims experience was followed through August 2005. The intervention babies were followed from birth, some beginning as early as June, 2004 and followed through May 2006.

Sentara identified two control groups to compare with their cases. The first are the Optima controls. They were selected by Sentara MCO, using the same methodology as was used to identify the high risk case moms. These 60 controls were in the same geographic area but declined to participate in the program. A second control group was identified by DMAS, and included 444 moms who were not in a managed care Medicaid program.⁴ The DMAS controls were not selected in the same way, and were not necessarily high risk.

The Optima control moms were followed from October 2003 through August 2005, while their babies were tracked from June 2004 through May 2006. The DMAS control moms were followed from September 2003 through August 2005, and their babies from June 2004 through May 2006. It should be noted that the number of months that the moms and babies are followed depends on the time of pregnancy and delivery. For pregnant women identified in October 2005 and delivering in June 2006, the moms would have 9 months of claim experience in the analysis prior to delivery, ninety days of claims experience post delivery, and her baby would have 22 months of experience, if they remain enrolled for the

⁴ Mandatory managed care is not statewide in Virginia. The DMAS controls were selected from geographical regions where Medicaid benefits are provided via fee-for-service.

delivery. The PMPM analysis method allows for these varying times in the intervention.

Claims Findings for Moms

The 84 moms in the Optima QEI ranged in age from 11 to 43 years of age, with a mean age of 22. Due to attrition during the 21 months of the program, the average member months were 70. The 60 Optima moms identified for the first control group ranged in age from 14 to 23 years of age, with a mean age of 23. They also experienced some modest attrition, with an average member months of 50. The second control group, the 444 DMAS moms, ranged in age from 13 to 46, with a mean age of 23. Their member months averaged 324.

The intervention moms and the Optima control moms experienced similar PMPM payments throughout the program, \$432 for the cases, and \$413 for the Optima controls. (Figure 8.1) The DMAS control moms, however, were less expensive, with an average PMPM payment of \$300. From the payment categories, we can see that the DMAS control moms were different in several ways. They have less payment for all categories of care, but particularly for hospital inpatient care. (Figure 8.2) The differences in utilization measures reflect the payment differentials. The days per 1000 persons were 3,873 for the DMAS control moms, compared to a rate of 4,302 days for the Optima case moms and 4,477 days for the Optima control moms. (Table 8.1)

Table 8.1: Virginia Utilization Measures

Utilization	Intervention Mom N=84	Intervention Baby N=83	Opt Control Mom N=60	Opt Control Baby N=59	DMAS Control MOM N=444	DMAS Control Baby N=448
Admissions/1000	1,582.7	821.6	1,429.2	823.4	1,435.2	1,468.2
Days/1000	4,302.2	4,382.0	4,476.7	7,808.1	3,873.5	3,962.6
NICU Days/1000	NA	3,085.6	NA	6,416.8	NA	NA
Office visits per person	3.7	9.7	3.7	9.2	8.35	12.0
ER visits per person	2.0	1.5	1.5	1.5	2.4	2.4
Home visits per person	0.3	0.3	0.1	0.8	0.0	0.1
Prescriptions per person	1.2	1.5	1.2	1.7	9.9	7.7

Figure 8.1: Virginia Total PMPM Payments

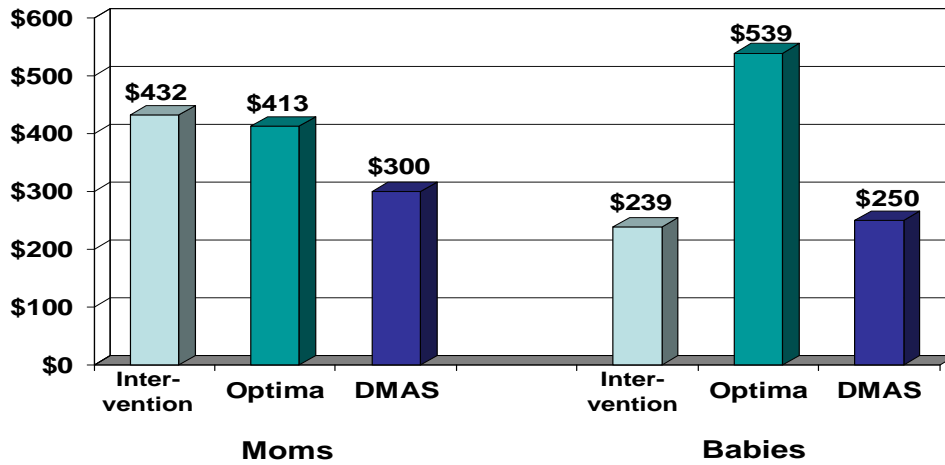
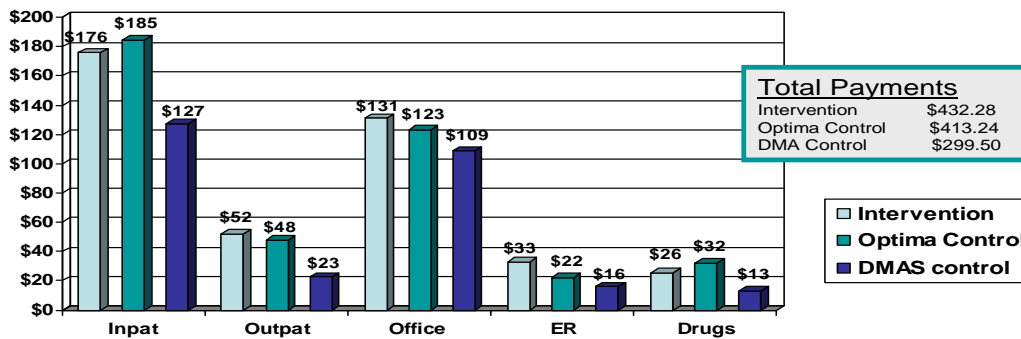


Figure 8.2: Virginia PMPM Payments by Category - Moms



The Optima mom cases and controls were, in fact, similar in most other utilization measures as well their inpatient days. Each group had an office visit rate of 3.7 visits per person per year. The cases averaged 2 ER visits per year, compared to 1.5 for the controls. The prescription drug rate was modest for both, with a rate of 1.2 drugs per person per year for both cases and controls.

Claims Findings for Babies

From the 84 moms who participated at some time in the intervention group, 83 babies were born alive. Five moms delivered twins. From the 60 Optima control moms, there were 59 babies and two sets of twins. And from the 444 DMAS control moms, there were 448 babies and six sets of twins. **(Table 8.1)** The total PMPM payments for the babies were \$239 for the cases, \$539 for the Optima controls and \$250 for the DMAS controls. **(Figure 8.1)** The relatively low cost of the DMAS controls is indicative of the population that was selected, which includes many non high-risk moms.

The distribution of the PMPM payments by category for babies is shown in Figure 8.3. Most of the payments are for inpatient care, with office visits as the second largest category. Payments for inpatient care are significantly higher for the Optima controls (\$408), than for the Optima cases (\$146) or the DMAS controls (\$122). The admission rates were similar for the Optima cases and controls, 822 admissions per 1000 for the cases and 823 admissions per 1000 for the controls, but significantly higher for the DMAS controls, with 1,468 admissions per 1000. Once admitted, the Optima controls stayed 9.5 days on average, compared to 5.3 days for the cases and only 2.7 days for the DMAS controls. Office visits were frequent for all three groups, averaging 9.7 visits per year for the cases, 9.2 visits for the Optima controls, and 12.0 visits for the DMAS controls. ER visit rates averaged 1.5 per year for both the Optima cases and the controls, while the DMAS controls averaged 2.4 visits. The average number of prescriptions was modest for the Optima groups, with an average of 1.5 prescriptions for the cases and 1.7 for the controls. In contrast, the DMAS controls averaged 7.7 prescriptions per person per year. **(Table 8.1)**

Table 8.2: Virginia Operating Costs

Costs	Baseline	Year 1	Year 2
Personnel	\$22,213	\$161,475	\$52,799
Office	\$180	\$9,264	\$7,300
Equipment	\$0	\$0	\$0
Other direct	\$0	\$0	\$0
Indirect	\$0	\$0	\$0
Total	\$22,393	\$170,739	\$60,099

Investment and Operating Costs

Optima’s investment costs for planning the intervention totaled \$22,393 which covered expenses for data management, modest funding for a nurse practitioner and nurse case manager as well as program leadership. Operating expense in year one was \$170,739. Included in these expenditures were support for the principal investigator, the program manager, data analyst, outreach worker and clinical support. In year two the operating expense moderated to \$60,099, with most of the decline due to less reimbursement for clinical support. (Table 8.2)

Return on Investment

Over the three years of the Optima project, the investment and operating expense was \$244,808, on a discounted basis. We computed the return on investment two ways, the first using the Optima controls and the second using the DMAS controls. With the Optima controls, claim costs increased \$27,789 for the moms and decreased \$345,293 for the babies for a net savings of \$317,504, or \$308,256 on a discounted basis. These savings were sufficient to offset the investment and operating expense for a net present value of \$63,448. The benefit cost ratio was 1.26. (Table 8.3) Using the DMAS controls there were no claim savings for either the moms or the babies, with a total increase of \$175,027 on a discounted basis. The benefit cost ratio was -0.71, for a net present value of -\$419,835. (Table 8.4)

Table 8.3: Virginia Return on Investment vs. Optima Controls

	Baseline	Year 1	Year 2	Total
<u>Investment in QEI</u>				
Investment/Operational Costs	22,393	170,739	60,099	
Discounted Costs	22,393	165,766	56,649	244,808
<u>Savings/Increases from QEI</u>				
Utilization Savings				317,504
Discounted Savings				308,256
<u>ROI Metrics</u>				
Benefit-Cost Ratio				1.26
Net Present Value				\$63,448 positive

Table 8.4: Virginia Return on Investment vs. DMAS Controls

	Baseline	Year 1	Year 2	Total
<u>Investment in QEI</u>				
Investment/Operational Costs	22,393	170,739	60,099	
Discounted Costs	22,393	165,766	56,649	244,808
<u>Savings/Increases from QEI</u>				
Utilization Savings				(180,278)
Discounted Savings				(175,027)
<u>ROI Metrics</u>				
Benefit-Cost Ratio				(0.71)
Net Present Value				(\$419,835) negative

Discussion

Optima Health chose two control groups for comparison to their intervention group – an Optima control and a DMAS control. As the data were analyzed, it became clear that the DMAS controls did not consist of high risk pregnant women, which limits its usefulness as a control group. Optima Health was not able to direct DMAS’s data selection criteria, and DMAS apparently selected all pregnant women. The women in this control group did not reflect the same utilization characteristics during pregnancy as the Optima intervention moms. Consequently we recommend that the Optima intervention moms and babies should be compared only to the Optima control moms and babies. These moms have very similar experience with respect to utilization measures and cost and reflect a high risk population. The experience of their babies is strikingly better, spending 44% fewer days in the hospital than the control babies. Further analysis of the hospital days indicates that the NICU days per 1000 were 3,085.6 for the cases and 6,416.8 for the controls. This suggests a strong positive impact of the QEI in reducing NICU days and costs.

APPENDIX 8

VA - Sentara Health Management												
QEI - High Risk Pregnancy and Child's First Year of Life						Data Contact - Nancy Jallo, Tracy Mounie						
Utilization and Membership	Age Statistics				Members in Claims	Average Member	Total Payments PMPM	Individual Average PMPM				
	Min	Max	Mean	Median				LOW		HIGH		
Intervention MOM: 10/2003-07/2005	11	43	22.1	22	84	70	\$432.28	\$45.16	\$1,319.1			
Intervention BABY: 06/2004-03/2006					83	55	\$238.63	\$5.54	\$1,159.7			
SenControl MOM: 10/2003-07/2005	14	40	23.1	23	60	50	\$413.24	\$119.13	\$1,173.0			
SenControl BABY: 06/2004-04/2006					59	35	\$538.84	\$1.45	\$6,467.1			
DMAS MOM: 09/2003-07/2005	13	46	23.1	22	444	324	\$299.50	\$2.03	\$1,413.7			
DMAS BABY: 06/2004-05/2006					448	317	\$250.38	\$2.94	\$7,914.1			
	Intervention				Sentara Control				DMAS			
Utilization Measures	MOM	BABY			MOM	BABY			MOM	BABY		
Admissions/1000	1582.7	821.6			1429.2	823.4			1435.19	1468.22		
Days/1000	4302.2	4382.0			4476.7	7808.1			3873.46	3962.62		
NICU Days/1000	-	3085.6			-	6416.8			-	-		
Office visits/person	3.7	9.7			3.7	9.2			8.35	11.99		
ER visits/person	2.0	1.5			1.5	1.5			2.4	2.41		
Home visits/person	0.3	0.3			0.1	0.8			0.01	0.1		
Prescription/person	1.2	1.5			1.2	1.7			9.9	7.66		
	Intervention				Sentara Control				DMAS			
PMPM Payments	MOM	%Tot	BABY	%Tot	MOM	%Tot	BABY	%Tot	MOM	%TOT	BABY	%TOT
Inpatient	\$175.78	40.7	\$144.51	60.6	\$184.75	44.71	\$408.43	75.8	\$127.29	42.5	\$121.97	48.7
Outpatient	\$52.19	12.1	\$9.48	4.0	\$47.65	11.53	\$15.16	2.81	\$22.63	7.56	\$6.92	2.8
Office	\$131.13	30.3	\$58.09	24.3	\$123.15	29.8	\$92.91	17.24	\$108.58	36.25	\$78.54	31.4
ER	\$32.87	7.6	\$14.34	6.0	\$22.30	5.4	\$11.95	2.22	\$15.94	5.32	\$9.44	3.8
Home	\$11.06	2.6	\$1.21	0.5	\$0.58	0.14	\$1.55	0.29	\$0.29	0.1	\$12.12	4.8
Pharmacy	\$25.67	5.9	\$6.56	2.8	\$32.15	7.78	\$6.38	1.18	\$13.18	4.4	\$19.71	7.9
Other	\$3.58	0.8	\$4.44	1.9	\$2.66	0.64	\$2.46	0.46	\$11.59	3.87	\$1.68	0.7
Total	\$432.28	100%	\$238.63	100%	\$413.24	100%	\$538.84	100%	\$299.50	100%	\$250.38	100%
Intervention mom 81 was excluded from the analysis - she had no baby												