The Hilltop Institute

Summary Report:
Maryland Community Health Resources Commission
Program Assessment

November 6, 2018

UMBC

AN HONORS UNIVERSITY IN MARYLAND

Summary Report:
Maryland Community Health Resources Commission Program Assessment

Table of Contents

Background 1
Assessment Objectives and Methodology 2
Limitations of the Assessments 3
Key Findings 3
- Potomac Healthcare Foundation 4
- Lower Shore Clinic 6
- Garrett County Health Department 7
- Baltimore City Health Department 8

Appendix A. Assessment Outcome Measures by Type and Grantee 11
Appendix B. Total and Average Per User Estimated Medicaid Costs by Expenditure Type and Phase 12

Summary Report:
Maryland Community Health Resources Commission Program Assessment

Background

The Maryland Community Health Resources Commission (CHRC), established by the Maryland General Assembly through the *Community Health Care Access and Safety Net Act of 2005*, aims to expand access to health care for low-income Marylanders and underserved communities and increase the capacity of the state's health care safety net infrastructure to deliver high-quality, affordable health care. The CHRC sponsors a grants program that has awarded 210 grants totaling $64.1 million since the CHRC's inception. Each year, the CHRC issues a call for proposals, inviting eligible "community health resources"[1] to apply for grants. Strategic priorities for the grants change from year to year but generally focus of the CHRC's mission, which is to increase access to care and build capacity among the state's safety net providers. Primary and preventive care, dental services, behavioral health services, and food insecurity and obesity prevention are common areas of focus.

In 2015, the CHRC sought guidance from The Hilltop Institute at the University of Maryland, Baltimore County (UMBC) on strategies for evaluating CHRC's grants program to determine the extent to which funded projects contributed to more cost-effective service delivery and improved health outcomes in Maryland. The CHRC approached Hilltop because many CHRC projects serve beneficiaries of the Maryland Medicaid program and Hilltop—through its long-standing partnership with the Maryland Department of Health (the Department)—is recognized for its expertise in Medicaid policy analysis, research, and data analytics. Additionally, Hilltop has ready access to Medicaid administrative data. Projects funded by the CHRC vary widely—e.g., by type of grantee organization, population and geographic areas served, health issues addressed, type of program or service, and whether the program or service is an innovation or a continuation or expansion of an ongoing initiative. While this approach to grantmaking has enabled the CHRC to support a variety of organizations and initiatives and to test a number of promising program approaches, it poses substantial challenges to developing a comprehensive evaluation strategy.

As a first step to addressing the challenges of evaluating the CHRC's grants program, Hilltop recommended conducting assessments of a small number of grants awarded in 2016 that aimed to serve a significant number of Medicaid beneficiaries. With approval of the Department, Hilltop could access Medicaid administrative data for the assessments in order to examine service utilization and costs for program participants. The CHRC agreed to this approach. In spring 2016, the CHRC contracted with Hilltop to conduct assessments of four projects selected

[1] As defined by COMAR 10.45.01.02(7).

from among the 2016 grant recipients using these criteria: 1) the goals of the intervention were clearly stated; 2) the enrollment process and timeline were clearly specified; 3) data were available to support the stated outcome measures, either through intervention-specific primary data collection by the grantee and/or Medicaid administrative data available through Hilltop; and 4) the staff of each project was committed to and capable of participating in an assessment and expected sufficient Medicaid participants to enroll so that statistically valid conclusions could be drawn.

The four grantees whose projects were selected for assessments are Potomac Healthcare Foundation, Lower Shore Clinic, Garrett County Health Department, and Baltimore City Health Department. The objective of the assessments was to determine the extent to which the programs had an impact on health services utilization and costs for participating Medicaid beneficiaries. For Medicaid participants, Hilltop examined service utilization and costs during the 90-day period immediately preceding program enrollment ("baseline"), during participation in the program ("post-intervention"), and in the 90-day period immediately following discharge from the intervention ("post-intervention"). The duration of the intervention varied by program. Given the short duration of the post-intervention period, the lack of comparison groups, and the limited number of participating Medicaid beneficiaries, conclusions as to whether or not the four programs resulted in sustained changes in Medicaid service utilization and costs beyond the 90-day post-intervention period cannot be made without further study.

The assessment methodology and limitations are discussed below, followed by key findings.

Assessment Objectives and Methodology

The objective of the assessments was to determine the extent to which the programs implemented by the four grantees had an impact on health services utilization and costs for participating Medicaid beneficiaries. As discussed below, the specific aims of each project varied, as did the outcome measures that were examined.

So that Hilltop could identify the study population for each of the four programs, grantees provided Hilltop with the names, Medicaid identification numbers, dates of program enrollment and discharge, and disposition at discharge (e.g., completed the program or withdrew) for participants in their programs. Then Hilltop identified participants who could be matched to Medicaid enrollment files. To qualify for the study population, participants had to be continuously enrolled in Medicaid for at least 90 days prior to program enrollment, during enrollment in the program, and at least 90 days after discharge from the program.

Hilltop conducted the assessments using a pre/post evaluation design. Medicaid service utilization and costs were examined during the 90-day period immediately preceding program enrollment ("baseline"), during participation in the program ("intervention"), and in the 90-day period immediately following discharge from the intervention ("post-intervention"). The duration of the intervention varied by program. Measurement periods were specific to each

participant, depending on the dates of program enrollment and discharge. Outcome measures for each program are listed in Appendix A and include the following:

- **Service Utilization Measures:** Hilltop counted the number of participants who had an inpatient admission, ED visit, or ambulatory care visit, and the average number of visits per user. Clinical outcome measures specific to each program were also examined.
- **Cost Measures:** Hilltop examined Medicaid costs for each user of services and then calculated average per-user costs. Fee-for-service claims and managed care organization (MCO) encounters for each user were grouped into three service types: hospital inpatient and outpatient costs (e.g., surgical centers and outpatient clinic services), professional fees from treatment and evaluation by individual health care providers, and costs for retail pharmacy. For each of the three service types, Hilltop calculated the average cost per user using as the denominator the total number of participants who used at least one service of that type during the measurement period. Similarly, the denominator for the calculation for average total Medicaid cost per user was based on the number of participants who used any of the three service types during the measurement period (more detail on the methodology for calculating per user costs is provided in Appendix B).

Limitations of the Assessments

The assessment was limited to program participants who met the Medicaid eligibility requirements described above.

While the number of participants in the study population varied significantly across the four programs, the number of study participants was generally small. The small study populations, the lack of comparison groups for the pre/post study design, and a post-intervention period of only 90 days limits the extent to which findings can be applied to the broader population of program participants or Medicaid beneficiaries.

Costs for MCO services were estimated from fee-for-service fee schedules and other external sources. Thus, reported participant costs are estimates only and may not represent the actual cost to the Medicaid program or reimbursement to providers.

This was a preliminary study, and conclusions as to whether or not the four programs resulted in sustained changes in service utilization and costs beyond the 90-day post-intervention period cannot be made without further study.

Key Findings

With grant support from the CHRC, Potomac Healthcare Foundation, Lower Shore Clinic, and Garrett County Health Department launched programs in 2016 targeting individuals with behavioral health conditions that aimed to stabilize program participants, connect them with

appropriate community-based services and treatment, and reduce the use of inpatient and emergency department (ED) services. Preliminary findings indicate that all three programs demonstrated some degree of success in getting individuals into treatment and effecting a shift from hospital-based care to outpatient services and pharmacy treatment.

With its grant from the CHRC, the Baltimore City Health Department conducted outreach to vulnerable pregnant women with the objective of connecting them with obstetric and pediatric care to improve birth outcomes and the health of their babies. The program succeeded in connecting pregnant women to the health care system, and preliminary data suggest that birth outcomes were similar to those for the overall Medicaid population.

In the descriptions of each program below, program aims are listed as described in the grantees' 2016 proposals to the CHRC. Assessment findings related to those aims are highlighted in the "key findings" for each grantee.

More research will be required before definitive conclusions can be reached regarding the efficacy and cost-effectiveness of these four programs, all of which were in the developmental stages when assessed by Hilltop. In order to conduct a more comprehensive evaluation, the four programs will require further development to clearly define the target population, the intervention or "treatment," the criteria for enrollment and disenrollment, and the desired outcomes. Additionally, the interventions must be designed to ensure sufficient enrollment to produce statistically significant findings and facilitate defensible cost savings calculations. The CHRC now has the opportunity to leverage the work of these four grantees and the findings from this assessment to design and test next-phase program models.

Potomac Healthcare Foundation

Potomac Healthcare Foundation received a three-year, $275,000 grant to establish a 50-bed residential Recovery Support Center in West Baltimore to provide a stabilizing setting where individuals with substance use disorder (SUD) can stay up to 12 weeks and receive a full continuum of treatment and support in transitioning to outpatient treatment. Individuals are admitted to the program after a crisis-driven acute care episode in the hospital or ED. Often such individuals do not have access to addiction treatment services.

Aim of the Program: The aim of the Recovery Support Center is to provide a systematic process for immediately linking individuals with SUD who are discharged from the hospital or ED to stabilizing care and addiction treatment in order to prevent future hospitalizations, readmissions, and revolving use of the ED.

Study Population: Participants were enrolled from July 2016 to June 2017 and remained in the program for 1 to 28 days, with an average length of enrollment of 13 days. Program staff

reported that 60.8 percent of participants completed the program.[2] Participants had an average age of 38 years, ranging from 20 to 65 years. About 46 percent of participants were White and 32 percent were Black.

Potomac Healthcare Foundation Key Findings

- Program participants demonstrated evidence of continuing treatment for an SUD during the post-intervention period, with 88.3 percent engaged in alcohol or drug dependence treatment for at least 30 days after program discharge.
- After discharge from the program, 20.5 percent of participants relapsed as evidenced by claims or encounters for detoxification, an inpatient admission, or an ED visit with a primary diagnosis of substance disorder.
- Even though total average estimated Medicaid costs per user increased slightly in the 90-day post-intervention period compared to the 90-day baseline period, the data suggest a shift from hospital-based care to outpatient services and pharmacy treatment for an SUD, an objective of the program.

Service Utilization: The number of participants who had an inpatient visit or ED visit decreased by 16.0 and 8.5 percentage points, respectively, from baseline to the post-intervention period. Almost all participants continued treatment for an SUD during the post-intervention period, either through medication and/or outpatient treatment. After discharge from the program, 88.3 percent of participants continued to be engaged in alcohol or drug dependence treatment for at least 30 days.[3] A total of 91.2 percent of participants had at least one medication-assisted treatment (MAT) following program discharge, a 5.2 percentage point increase from baseline. After discharge from the program, 20.5 percent of enrollees had claims or encounters for detoxification, an inpatient admission, or an ED visit with a primary diagnosis of an SUD, suggesting relapse. The relapse rate may be under-reported as some participants who relapsed may not have received care through an ED or in an acute care setting.

Health Care Costs: While total average estimated Medicaid costs per user increased from $9,512 during the baseline period to $9,827 in the post-intervention period—an increase of 3.3 percent—service utilization patterns suggest a shift from hospital-based care to outpatient services. Average per-user hospital-related costs (e.g., hospital inpatient, ED, and other outpatient services) declined as a share of total average per user Medicaid costs, from 63.2 percent during baseline to 45.0 percent during the post-intervention period (Appendix B, Table 1). At the same

[2] Program staff indicated that program completion occurred when the participant and staff mutually agreed that treatment goals had been met.
[3] Defined as two or more inpatient admissions or outpatient visits related to alcohol or other drug dependence treatment within 30 days of program discharge, or medication-assisted treatment (MAT) within 34 days of program discharge.

time, average costs per user for professional and pharmacy services each increased approximately 50 percent from baseline to the post-intervention period.

Lower Shore Clinic

Lower Shore Clinic received a fifteen-month grant of $105,000 to support CareLink, a new program targeting individuals with multiple chronic diseases as well as behavioral health needs who had three or more ED visits and/or admissions to Peninsula Regional Medical Center within a six-month period.

Aim of the Program: CareLink aims to reduce 30-day hospital readmission rates by providing intensive case management for participants post-discharge from the hospital and helping participants establish connections with primary care providers, behavioral health treatment providers, and other health care resources in the community.

Note: The number of Medicaid beneficiaries participating in the CareLink program during the assessment period of May 2016 to June 2017 was very small, so the following findings must be interpreted with caution. Almost half (41.7 percent) of Medicaid beneficiaries in the study population were also enrolled in Medicare. Hilltop's analysis examined Medicaid service utilization and costs only as Medicare data were not available for this study. Thus, health care costs incurred by Medicare-Medicaid enrollees during the measurement period are understated.

Lower Shore Clinic Key Findings

- The experience with 30-day hospital readmissions was mixed, with 18.2 percent of participants readmitted within 30 days of their most recent hospital stay prior to enrollment in CareLink.
- However, ED visits associated with behavioral health-related conditions decreased from 21.4 percent during baseline to 6.5 percent in the post-intervention period.
- The percentage of participants with a usual source of care in the post-intervention period nearly doubled from baseline.
- Total average estimated Medicaid costs per user decreased 44 percent in the 90-day post-intervention period compared to the 90-day baseline period, and there was evidence of a shift from hospital-based care to outpatient services and pharmacy treatment for chronic conditions and behavioral health needs.

Study Population: Participants were enrolled from May 2016 to June 2017 and remained in the program for 12 to 344 days, with an average length of enrollment of 111 days. Program staff reported that 50 percent of enrollees completed the program.[4] The average age of participants

[4] Parameters for program completion were loosely defined in this pilot program, with program staff stating that disenrollment occurred when there were no longer scheduled visits with the participant.

was 50 years, with a range of 20 to 72 years. About two-thirds (62.5 percent) of participants were women. Over two-thirds (70.8 percent) were White and 25 percent were Black.

Service Utilization: The proportion of ED visits pertaining to behavioral health-related conditions decreased from 21.4 percent during baseline to 6.5 percent in the post-intervention period. The decrease was most pronounced for mental health diagnoses but was also evident for an SUD diagnoses. Of the participants who had an inpatient admission during the baseline period, 18.2 percent were readmitted during the 30-day period immediately following discharge from the intervention. The percentage of participants with a usual source of care (defined as two consecutive ambulatory visits with the same provider) in the post-intervention period nearly doubled from 33.3 percent at baseline to 62.5 percent during the post-intervention period. The experience with hospital readmissions is mixed: 18.2 percent of participants were readmitted to the hospital within 30 days of their most recent hospital admission before enrolling in CareLink; 36.4 percent were readmitted during the intervention period; and 36.4 percent had no admissions during the 90-day post-intervention period.

Health Care Costs: Total average estimated Medicaid costs per user decreased from $15,990 during baseline to $8,954 in the post-intervention period, or 44 percent (Appendix B, Table 2). Average per-user hospital costs declined from $13,303 during baseline to $7,902 in the post-intervention period, or 41 percent, and average Medicaid costs per user for professional services declined from $2,960 to $2,471, or 17 percent. At the same time, average Medicaid costs per user for pharmacy increased from $1,563 during baseline to $2,421 in the post-intervention period, evidence of a shift from hospital-based care to outpatient services and pharmacy treatment for chronic conditions and behavioral health needs.

Garrett County Health Department

Garrett County Health Department received a three-year grant of $180,000 to support the use of telehealth technology to increase access to MAT in a rural area of the state. At the time of proposal submission to the CHRC, the Garrett County Center for Behavioral Health was the only certified addiction treatment service in the county. The telehealth program was a collaboration between the Garrett County Health Department and the Department of Psychiatry at the University of Maryland, School of Medicine. Participants in the program received outpatient substance use treatment and buprenorphine prescriptions through real-time video conferencing with physicians.

Aim of the Program: The telehealth program aims to improve MAT compliance and improve recovery rates in order to reduce overdose deaths and overdose admissions to EDs.

Note: The number of Medicaid beneficiaries receiving MAT via telehealth technology during the assessment period was exceedingly small, so the following findings must be interpreted with caution.

Study Population: Participants were enrolled from November 2016 to April 2017 and remained in the program for 8 to 134 days, with an average length of enrollment of 66 days. Program staff reported that 71.4 percent of participants completed the program.[5] The average age of participants was 31 years, ranging from 23 to 46 years. The majority of participants were male (57.1 percent) and White (85.7 percent).

Service Utilization: No inpatient admissions were reported during the 90-day post-intervention period, although the number of participants with at least one ED visit increased from 42.9 percent to 74.4 percent. After discharge from the program, 85.7 percent of participants continued to be engaged in alcohol or drug dependence treatment for at least 30 days.[6] All participants obtained at least one MAT prescription following program discharge.

Health Care Costs: Total average estimated Medicaid costs per user decreased from $4,725 during baseline to $3,901 in the post-intervention period, or 17 percent (Appendix B, Table 3). Average per user hospital costs declined from $5,420 during baseline to $541 in the post-intervention period. At the same time, average Medicaid costs per user for professional services held steady, while average per-user pharmacy costs increased from $149 during baseline to $1,268 in the post-intervention period. This suggests evidence of a shift from hospital-based care to outpatient services and pharmacy treatment during the immediate 90 days after discharge, which aligns with the objectives of Garrett County's program. However, average estimated Medicaid costs per user must be interpreted with extreme caution because of the small number of participants in the study population.

Garrett County Health Department Key Findings

- While no inpatient admissions were reported during the 90-day post-intervention period, the number of participants with at least one ED visit increased from 42.9 percent in the baseline period to 74.4 percent in the post-intervention period.
- After discharge from the program, all participants obtained at least one MAT prescription and 85.7 percent continued to be engaged in alcohol or drug dependence treatment for at least 30 days.
- Average estimated Medicaid costs per user suggest evidence of a shift from hospital-based care to outpatient services and pharmacy treatment during the immediate 90 days after discharge.

Baltimore City Health Department

Baltimore City Health Department received a two-year grant of $250,000 from the CHRC to support the continued implementation of B'More for Healthy Babies Initiative. Pregnancy

[5]Program staff report that program completion was defined as when a participant's treatment plan was reduced to only one scheduled session per week of outpatient therapy.

[6] Defined as two or more inpatient admissions or outpatient visits related to alcohol or other drug dependence treatment within 30 days of program discharge, or MAT within 34 days of program discharge.

engagement specialists use proactive, assertive trauma-informed strategies to conduct outreach to pregnant women and newborns and refer them to obstetric and pediatric homes.

Aim of the Program: B'More for Healthy Babies targets vulnerable pregnant women and aims to increase access to prenatal care, home visits, and other services that have been shown to improve outcomes in comparable populations, with the ultimate goal of improving birth outcomes and reducing the infant mortality rate in Baltimore.

Assessment Approach: Baltimore City Health Department enrolls vulnerable women in B'More for Healthy Babies at any time during a pregnancy. Enrollment spans from initial outreach to the pregnant woman until the woman is connected to services at an appropriate obstetric or pediatric home. Hilltop's study population consisted of women who met the study's Medicaid eligibility requirements and were enrolled in the program during the period of November 2016 to June 2017. Hilltop analyzed administrative data for each participant-specific 90-day baseline period, intervention period, and 90-day post intervention period. For those women who did not give birth during the intervention or post-intervention period, Hilltop examined birth outcomes to the extent that data were available prior to submission of the final assessment report to the CHRC.

Study Population: The study population totaled 112 women. The women were enrolled in the program anywhere from 1 to 198 days, for an average of 22 days. Program staff reported that all were referred to care. The average age of participants was 25 years, and the majority of participants were Black (71.4 percent). The number of days from initial enrollment to the participant's delivery date ranged from 4 to 252 days, with an average of 127 days.

Baltimore City Health Department Key Findings

- 99 percent of enrolled women had at least one prenatal visit during the measurement period, and 46.5 percent completed one postpartum visit during the post-intervention period, suggesting that the objective of the intervention—connecting vulnerable pregnant women to the care system—was achieved to some extent.
- The percentage of participants who received care consistently from the same provider for two or more visits increased from 51.8 percent during the baseline period to 70.5 percent in the post-intervention period.
- The rate of very low birthweight among study participants' newborns was about 3 percent, consistent with the overall Medicaid population. However, more comprehensive research will be required to determine the extent to which the intervention has an impact on birth outcomes and the health of babies.

Service Utilization: Nearly all participants completed a prenatal visit at some point during their pregnancy, indicating that the objective of the intervention—a connection to obstetric services—was achieved. For example, 99 percent of enrolled women had at least one prenatal visit during the measurement period; however, the limitations of the study period precluded determining the

extent to which these women were receiving prenatal care on the recommended schedule. Almost half of the participants (46.5 percent) completed one postpartum visit within the post-intervention period. The percentage of participants who received care consistently from the same provider for two or more visits increased from 51.8 percent during the baseline period to 70.5 percent in the post-intervention period.

Healthcare Costs: Estimated Medicaid costs per user for hospital services averaged $8,819 in the post-intervention period, reflecting labor and delivery charges and any hospital-based visits related to pregnancy or postpartum care (Appendix B, Table 4).

Birth Outcomes: While birth outcomes could not be identified for 10 percent of the study population,[7] the data on the 90 percent for whom birth outcomes were available in the Medicaid administrative data indicated that 3 percent of live births were for very low birthweight babies (less than 1,500 grams). This is consistent with the rate of very low birthweight in the overall Medicaid population. The remaining birth events were for normal (2,500 grams or more) or low birthweight babies (1,500 to 2,499 grams). Medicaid MCOs, which were responsible for 97 percent of the births to study participants, receive an enhanced "kick payment" for very low birthweight babies. Kick payments for very low birthweight babies delivered to MCO-enrolled study participants were an average of $69,697 per very low birthweight baby. This compares to an average kick payment of $15,456 for normal or low birthweight babies.

[7] These pregnancies possibly ended in miscarriage or voluntary termination, delivery may have occurred after the conclusion of the study period, or there may have been a lag in providers submitting claims to Maryland Medicaid.

Appendix A. Assessment Outcome Measures by Type and Grantee

Outcome Measure	Grantee			
Health Care Expenditures	**Baltimore City Health Department**	**Garrett County Health Department**	**Lower Shore Clinic**	**Potomac Healthcare Foundation**
Institutional	✓	✓	✓	✓
Professional	✓	✓	✓	✓
Pharmacy	✓	✓	✓	✓
Program-Specific Expenditure Measures				
Maternal Delivery Expenditures	✓			
Health Care Utilization				
Emergency Department Visits	✓	✓	✓	✓
Inpatient Hospitalizations	✓	✓	✓	✓
Ambulatory Care Visits	✓	✓	✓	✓
Usual Source of Ambulatory Care	✓	✓	✓	✓
Program-Specific Utilization Measures				
Use of Medication Assisted Treatment		✓		✓
Substance Use Relapse Event		✓		✓
Engagement in Alcohol or Other Drug Dependence Treatment		✓		✓
Prenatal Care Visits	✓			
Postpartum Visits	✓			
Family Planning Services	✓			
Maternal Delivery Outcomes	✓			
Inpatient Hospital Readmissions			✓	
Post Inpatient Hospital Visit Primary Care Visit			✓	
Post Inpatient Hospital Visit Pharmacy Utilization			✓	
Mental Health Utilization			✓	✓

Appendix B. Total and Average Per User[8] Estimated Medicaid Costs by Expenditure Type and Phase

Table 1. Potomac Healthcare Foundation (n = 444)

Type	Hospital	Professional	Pharmacy	Total
Baseline Period				
% of Total Medicaid Cost	63.2%	28.8%	8.0%	**100%**
Total Users	269	386	310	**394**
Average Cost per User	$8,806	$2,799	$961	**$9,512**
Intervention Period				
% of Total Medicaid Cost	4.7%	84.1%	11.2%	**100%**
Total Users	39	437	403	**439**
Average Cost per User	$2,082	$3,343	$484	**$3,957**
Post-Intervention Period				
% of Total Medicaid Cost	45.0%	42.2%	12.8%	**100%**
Total Users	205	401	357	**411**
Average Cost per User	$8,863	$4,249	$1,451	**$9,827**

[8] Hilltop examined Medicaid costs for each user of services and then calculated average per user costs. Fee-for-service claims and MCO encounters for each user were grouped into three service types: hospital inpatient and outpatient costs (e.g., surgical centers and outpatient clinic services), professional fees from treatment and evaluation by individual health care providers, and costs for retail pharmacy. The cost of MCO professional encounters was imputed using Medicaid fee schedules. For hospital services, Hilltop calculates the MCO payment amount as 94 percent of the charge regulated by the Maryland Health Services Cost Review Commission (HSCRC). The Maryland Department of Health prices all pharmacy encounters. For each of the three service types, Hilltop calculated the average cost per user using as the denominator the total number of participants who used at least one service of that type during the measurement period. Similarly, the denominator for the calculation for average total Medicaid cost per user was based on the number of participants who used any of the three service types during the measurement period. Not every program participant used each of the three service types during the various phases of the study. In a few cases, Hilltop found no Medicaid claims or encounters for individuals reported by the grantees as program participants either for some or all of the phases of the measurement period; these individuals were not included in the per user calculations.

Table 2. Lower Shore Clinic

Type	Hospital	Professional	Pharmacy	Total
Baseline Period				
% of Total Medicaid Cost	76.0%	18.5%	5.5%	**100%**
Total Users	*	*	*	*****
Average Cost per User	$13,303	$2,960	$1,563	**$15,990**
Intervention Period				
% of Total Medicaid Cost	64.6%	21.7%	13.7%	**100%**
Total Users	*	*	*	*****
Average Cost per User	$10,344	$3,143	$3,219	**$13,235**
Post-Intervention Period				
% of Total Medicaid Cost	60.2%	25.1%	14.7%	**100%**
Total Users	*	*	*	*****
Average Cost per User	$7,902	$2,471	$2,421	**$8,954**

*The number of individuals in Lower Shore Clinic's study population was very small. In this table, the number of users has been suppressed to protect program participants from possible re-identification.

Table 3. Garrett County Health Department

Type	Hospital	Professional	Pharmacy	Total
Baseline Period				
% of Total Medicaid Cost	49.2%	49.0%	1.8%	**100%**
Total Users	*	*	*	*****
Average Cost per User	$5,420	$2,317	$149	**$4,725**
Intervention Period				
% of Total Medicaid Cost	6.9%	61.0%	32.0%	**100%**
Total Users	*	*	*	*****
Average Cost per User	$426	$214	$1,128	**$3,519**
Post-Intervention Period				
% of Total Medicaid Cost	9.9%	57.6%	32.5%	**100%**
Total Users	*	*	*	*****
Average Cost per User	$541	$2,246	$1,268	**$3,901**

*The number of individuals in Garrett County Health Department's study population was exceedingly small. In this table, the number of users has been suppressed to protect program participants from possible re-identification.

Table 4. Baltimore City Health Department (n = 112)

Type	Hospital	Professional	Pharmacy	Total
Baseline Period				
% of Total Medicaid Cost	70.5%	22.0%	7.5%	**100%**
Total Users	96	110	88	**112**
Average Cost per User	$4,247	$1,157	$495	**$5,166**
Intervention Period				
% of Total Medicaid Cost	75.3%	17.7%	7.0%	**100%**
Total Users	55	72	39	**78**
Average Cost per User	$3,278	$590	$428	**$3,070**
Post-Intervention Period				
% of Total Medicaid Cost	77.1%	16.7%	6.2%	**100%**
Total Users	90	108	94	**109**
Average Cost per User	$8,819	$1,588	$683	**$9,444**

The Hilltop Institute

University of Maryland, Baltimore County
Sondheim Hall, 3rd Floor
1000 Hilltop Circle
Baltimore, MD 21250
410-455-6854
www.hilltopinstitute.org