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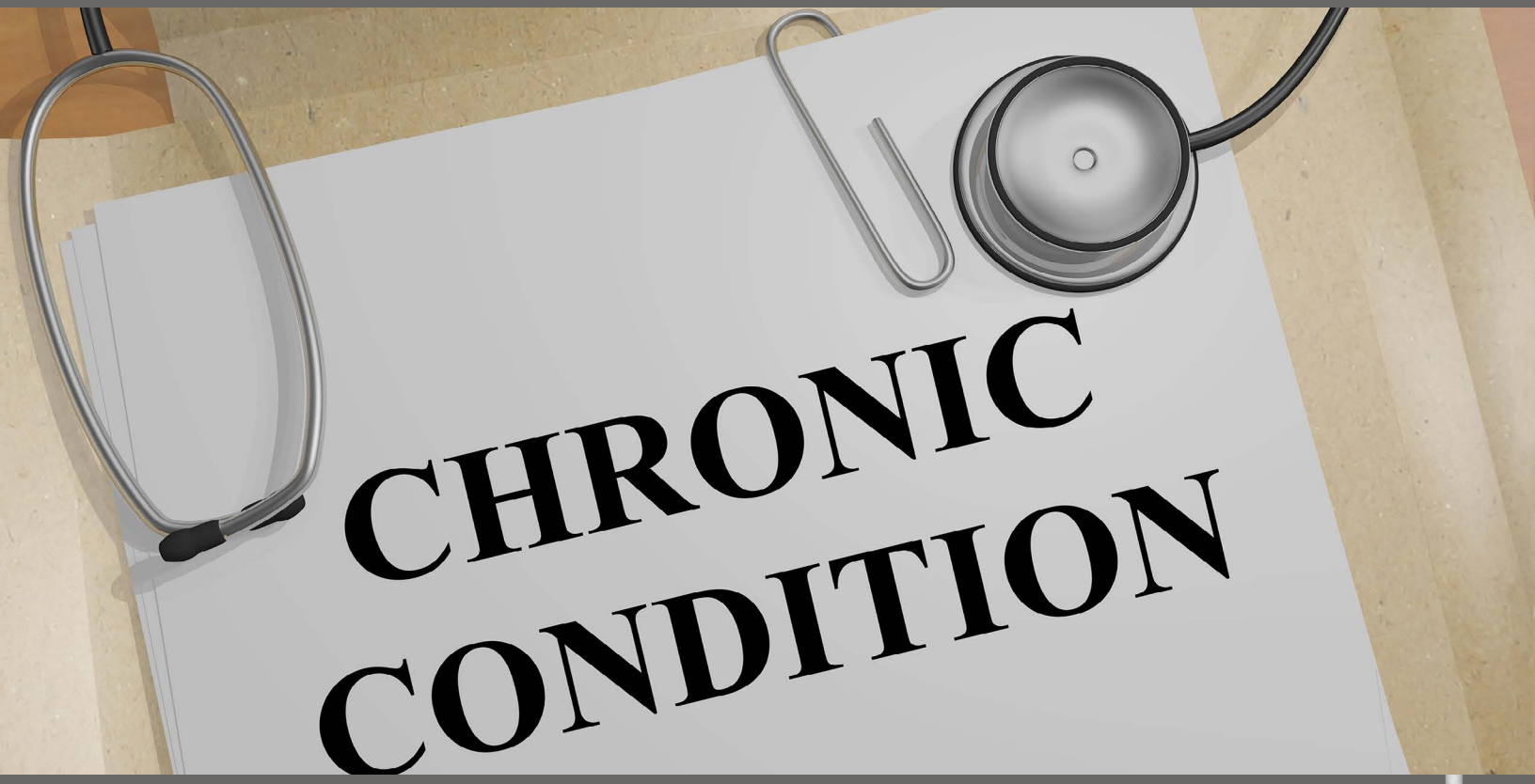

Outcomes for Iowa Medicaid Chronic Condition Health Home Program Enrollees

SFYs 2012-2015

Elizabeth Momany
*Assistant Director, Health Policy Research Program**
*Associate Research Scientist**

Peter Damiano
*Director**
*Professor, Preventive & Community Dentistry***

Dan Shane
*Assistant Professor, Health Management and Policy****

Phuong Nguyen-Hoang
*Assistant Professor, Public Policy Center and Urban and Regional Planning*****

Suzanne Bentler
*Assistant Research Scientist, Health Policy Research Program**

Jason Wachsmuth
*Research Associate, Health Policy Research Program**

**Public Policy Center*
***College of Dentistry and Dental Clinics*
****College of Public Health*
*****College of Liberal Arts and Sciences*

University of Iowa Public Policy Center •209 South Quadrangle, Iowa City, IA 52242-1192
O - 319.335.6800 • F - 319.335.6801 • www.ppc.uiowa.edu

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Executive Summary

Introduction

The Chronic Condition Health Home program began on July 1, 2012 with an initial enrollment of 308 members. This program is designed to enhance services to Medicaid members with chronic conditions through providers implementing Patient-Centered Medical Home best practices. Providers are paid to provide these enhanced services through per member per month payment based on the enrolled member's number of chronic conditions. Currently, there are 37 counties with CCHH providers.

Methods

- The study population was composed of two groups of Medicaid members per year: those enrolled in the CCHH and a randomly selected group of matched non-CCHH members.
- The number of study members varied by year with 17,725 total members in the study as of SFY 2015 with 4,493 CCHH members and 13,232 non-CCHH members. Non-CCHH members were matched to members by decade of birth, gender and type of program for the final 30 months of the 36 month study period on a month by month basis.
- CCHH members were more likely to be enrolled longer in Medicaid during the study period.

Sixty percent were enrolled for all 36 months, while only 47% of non-CCHH members were enrolled for the entire study period. CCHH members were more likely to be female and more likely to be middle aged. Outcome rates were calculated for both groups and compared over the three year study period.

Ambulatory care

- Emergency Department (ED) rates decreased more for CCHH members than non-CCHH members in the first 2 years of the program, however; they began to rise again in the third year.
- Outpatient visit rates moved opposite to the ED rates with initial increases in the outpatient visit rates followed by a decrease in the third year.
- Further research is needed to understand why the trends in ED and outpatient visit rates changed in the third year.
- The primary reason for members to access the ED was pain.

Nursing facility utilization

- Admissions for Skilled Nursing Facilities (SNF) initially rose for CCHH members dropped in SFY 2014and rose again in SFY 2015.
- Admissions for Intermediate Care Facilities (ICF) continued to decrease following the implementation of the CCHH, while during the same time period ICF admission rates rose for the non-CCHH group.

Hospital Readmissions

- There were too few hospital readmissions to risk adjust the rates (<120). However, in SFY 2014 15% of hospitalizations had a readmission within 30 days, while in SFY 2015 there were 16% with a readmission.

Primary Care

- CCHH members had higher rates of all three visit types (ambulatory care, primary care and preventive) prior to the start of the program, which is to be expected as they are more likely to have a chronic illness. Preventive visit rates were very low for all age groups across both study groups (Table 9, Figure 10). Both CCHH members and non-CCHH members ages 20-44 showed an initial decline in preventive visits that increased over time, while the rates for those 45-64 years of age remained relatively stable for the first 2 years of the program and then increased.
- Primary care and ambulatory care visit rates were relatively high in the CCHH group

throughout the study period (94-98%), remaining stable (Table 10, Figure 11). In the comparison group the rates were lower but also remained relatively stable with the exception of a drop in those 20-44 years of age in CY 2013 (Table 11). We do not report rates for those over 64 years of age as the numbers in the groups were low, ranging from 17-30.

Conclusion

- Though there are indicators of CCHH successes during the first 2 years of the program, during the third year outcome rates begin to reverse indicating that these successes may be difficult to maintain over time. Further investigation into the program to determine what factors may be affecting this change in outcome rates is needed.

Introduction

The Iowa Chronic Condition Health Home (CCHH) program incentivizes health care providers in Iowa to offer additional services to Medicaid patients with chronic conditions through a monthly payment tied to the number and severity of the enrollee's chronic conditions (Table 1). The Health Home model was authorized under a state plan amendment approved by the Centers for Medicare and Medicaid Services with enrollment beginning July 1, 2012.

Health Home is a specific designation under section 2703 of the Patient Protection and Affordable Care Act and is a model of care that provides patient-centered, whole person, coordinated care for all stages of life and transitions of care specifically for individuals with chronic illnesses. For Iowa Medicaid, Health Home practices are enrolled Medicaid provider organizations capable of providing enhanced personal, coordinated care for Medicaid enrollees meeting program eligibility criteria. In return for the enhanced care provided, the Iowa Medicaid Enterprise (IME) offers monthly care coordination payments and the potential for annual performance based incentives designed to improve patient health outcomes and lower overall Medicaid program costs.

Additional information about the Iowa CCHH Program is located at http://www.ime.state.ia.us/Providers/healthhome.html .

Eligibility for the Chronic Condition Health Home Program

To be eligible for the CCHH Program, Medicaid enrollees must have at least two chronic conditions or one chronic condition and be at risk for developing a second condition from the following list:

- Hypertension
- Overweight (Adults with a Body Mass Index of 25 or greater/Children in the 85th percentile)
- Heart Disease
- Diabetes
- Asthma
- Substance Abuse
- Mental Health Problems

In addition, they may not be in IowaCare, PACE, Iowa Family Planning Network, Qualified Medicare Beneficiary, or be a presumptively eligible child or adult.

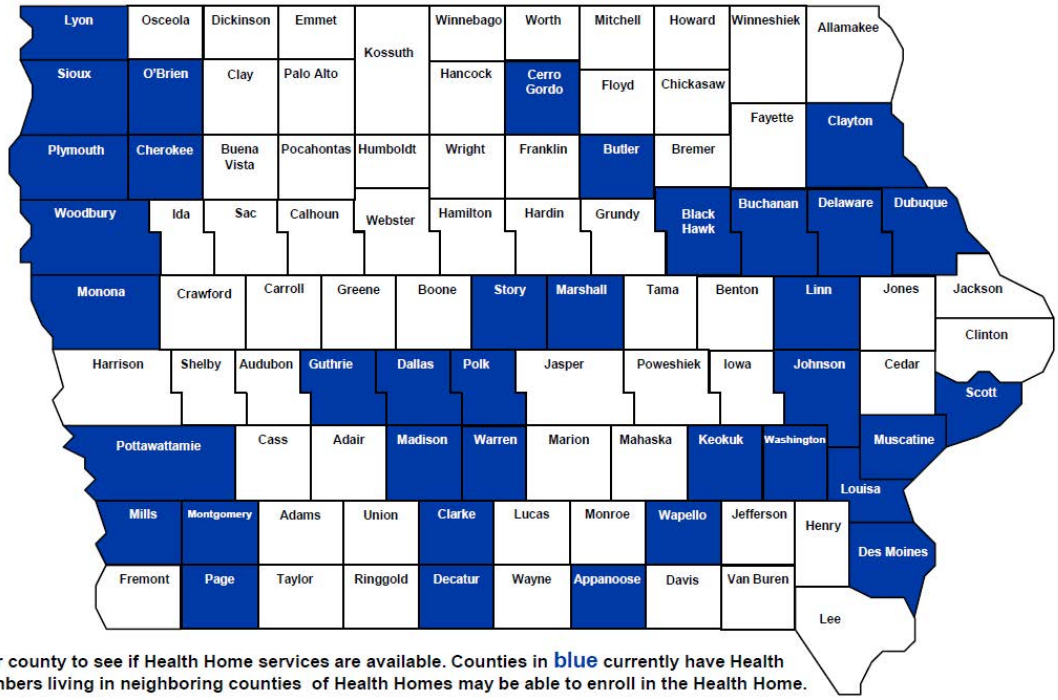
Table 1. Tier definitions and payments

Tier	Sum of chronic conditions	Monthly payment
1	1-3	$12.80
2	4-6	$25.60
3	7-9	$51.21
4	10 or more	$76.81

Provider Network

Providers enrolled in the CCHH Program include but are not limited to: physician clinics, community mental health centers, Federally Qualified Health Centers (FQHCs), and Rural Health Clinics (RHCs). Below is a reproduction of the map of Chronic Condition Health Homes as of August, 2015. Counties in blue have active Medicaid Chronic Condition Health Homes. This map is a copy of the interactive Health Home map found at https://dhs.iowa.gov/sites/default/files/HealthHome_Map.pdf .

Figure 1. Iowa Medicaid Chronic Condition Health Homes as of August, 2015



Click on your county to see if Health Home services are available. Counties in blue currently have Health Homes. Members living in neighboring counties of Health Homes may be able to enroll in the Health Home.

Methodology

Three outcome measures are used to evaluate the CCHH program:

- Emergency department utilization
- Skilled nursing facility admissions
- Hospital readmissions

These areas of health care utilization are considered highest in cost and most likely to be impacted by a CCHH.

CMS has since produced a list of Core Set of Health Care Quality Measures for Chronic Condition Health Home Programs. Resources related to this core set can be found at https://www.medicaid.gov/state-resource-center/medicaid-state-technical-assistance/health-homes-technical-assistance/health-home-quality-reporting.html . These measures are listed below.

- Adult body mass index*
- Screening for clinical depression and follow-up plan
- Plan all-cause readmissions rate*
- Follow-up after hospitalization for mental illness*
- Controlling high blood pressure
- Care transition – timely transmission of transition record
- Initiation and engagement of alcohol and other drug dependence treatment*
- Prevention quality indicator 92*
- Ambulatory care – emergency department visits*
- Inpatient utilization*
- Nursing facility utilization*

Measures marked with an asterisk are calculated using administrative data and provided in Appendix A for CCHH members. Though most of the outcome measures can be calculated through the administrative data, some are only accessible through Continuity of Care Documents (CCDs) or chart review.

Outcome measures include stringent inclusion criteria. Claims and enrollment data from enrollees who meet the following criteria may be included in outcomes analyses.

Must have no more than a one month gap in enrollment during the measurement period.

Must have no more than a one month of enrollment for restricted services programs such as dual eligibility for Medicare or enrollment in Family Planning.

Must have been enrolled in the CCHH program early enough to allow time for claim adjudication ensuring we have at least 95% of claims related to the member's health care, normally 6 months.

Figure 2. CCHH program enrollment by month and Tier level, July 2012-December 2015

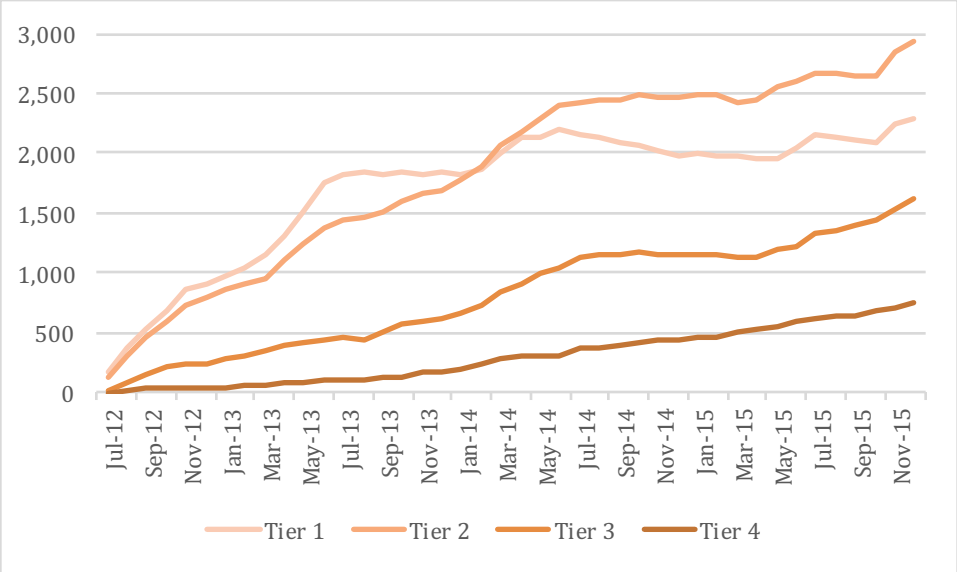


Table 2. Number of months enrolled in the CCHH program FY 2013-2015

Number of months	Number enrolled	Percent of enrollment
1-6	3,197	28%
7-12	2,894	25%
13-18	2,426	21%
19-24	1,225	11%
25-30	948	8%
31-36	776	7%
Total	11,466	100%

Table 3.Number of enrollees by months eligible and year, FY 2013-2015

Number of months	FY 2013		FY 2014		FY 2015	
	Number	Percent	Number	Percent	Number	Percent
1	637	15%	543	7%	721	8%
2	590	14%	621	8%	645	7%
3	510	12%	723	9%	457	5%
4	320	7%	851	11%	409	5%
5	244	6%	597	8%	402	5%
6	211	5%	390	5%	370	4%
7	189	4%	436	6%	360	4%
8	450	10%	399	5%	407	5%
9	327	8%	343	4%	429	5%
10	341	8%	412	5%	431	5%
11	335	8%	731	9%	640	7%
12	190	4%	1,796	23%	3,593	41%
Total	4,344	100%	7,842	100%	8,864	100%

Table 4. Age, Gender, and Race/Ethnicity for the CCHH population, FY 2014 and FY 2015

	FY 2014		FY 2015	
Characteristic	Number	Percent	Number	Percent
Gender				
Female	3,785	61%	5,429	61%
Male	2,381	39%	3,435	39%
Race/Ethnicity				
White	3,351	54%	4,975	56%
Black or African American	983	16%	1,255	14%
Hispanic/Latino	317	5%	465	5%
Asian/Pacific Islander	111	2%	163	2%
American Indian	91	2%	120	1%
Multiple-other	68	1%	123	1%
Undeclared	1,245	10%	1,761	20%
Age				
0-17 years old	1,223	20%	1,832	20%
18-64 years old	4,199	68%	6,067	67%
65+ years old	744	12%	1,181	11%
County of residence				
Black Hawk	1,602	26%	2,274	26%
Polk	1,241	20%	1,667	19%
Woodbury	1,093	18%	1,425	16%
Scott	272	4%	331	4%
Linn	292	5%	318	4%
Des Moines	222	4%	306	4%
All others	1,444	16%	2,543	29%
Tier				
Tier 1	2,289	37%	2,952	33%
Tier 2	2,480	40%	3,511	40%
Tier 3	1,082	18%	1,655	19%
Tier 4	315	5%	746	8%

The study population is primarily female, white, adult and living in an urban county. In addition, most of the study population qualified for Tier 1 or Tier 2 indicating they had 6 or fewer chronic conditions. For the purposes of the outcome analyses adults 65 years of age and over are removed from the analyses. The number of members within this category after members with Medicare enrolled months are removed is very small. Table 4 provides demographics by age group: child/youth and adult. The member distribution by gender and age reveals that though the study population is primarily female, the gender distribution for those under 17 is more even at 45% female. In addition, as age increases it appears that members are more likely not to disclose their race, while children under 18 and adults over 64 are less likely to be white. The county of residence by age indicates that though all age groups are primarily in urban counties, the counties in which they reside vary by age. This most likely reflects the propensity of CCHHs to take people in certain age ranges, particularly pediatric CCHHs in certain counties. Finally, as might be expected, the likelihood that a member will be in a higher tier increases with age. In fact, there are no children in tier 4 within the study population.

Table 5. Age, Gender, and Race/Ethnicity for the CCHH study population by age group

	FY 2014		FY 2015	
Characteristic	0-17 years Number (%)	18-64 years Number (%)	0-17 years Number (%)	18-64 years Number (%)
Gender				
Female	537 (44%)	2,762 (66%)	806 (44%)	3,879 (66%)
Male	686 (56%)	1,437 (34%)	1,008 (56%)	2,017 (34%)
Race/Ethnicity*				
White	550 (45%)	2,488 (59%)	782 (43%)	3,678 (62%)
Black or African American	225 (18%)	694 (17%)	340 (19%)	819 (14%)
Hispanic/Latino	157 (13%)	114 (3%)	220 (12%)	182 (3%)
Asian/Pacific Islander	10 (1%)	35 (1%)	23 (1%)	59 (1%)
American Indian	21 (2%)	63 (2%)	25 (1%)	84 (1%)
Multiple-other	57 (5%)	11 (<1%)	105 (6%)	18 (<1%)
Undeclared	176 (14%)	794 (19%)	319 (18%)	1,056 (18%)
County of residence				
Black Hawk	732 (60%)	815 (19%)	1,171 (65%)	1,016 (17%)
Woodbury	109 (9%)	765 (18%)	113 (6%)	1,031 (18%)
Linn	63 (5%)	193 (5%)	59 (3%)	218 (4%)
Polk	61 (5%)	975 (23%)	78 (4%)	1,267 (22%)
Plymouth	56 (5%)		60 (3%)	
Buchanan	26 (2%)		40 (2%)	
Des Moines		209 (5%)		283 (5%)
Scott		190 (5%)		239 (4%)
All others	123 (20%)	1,052 (25%)	319 (17%)	1,842 (31%)
Tier				
Tier 1	808 (66%)	1,280 (31%)	1,306 (72%)	1,431 (24%)
Tier 2	334 (27%)	1,828 (44%)	406 (22%	2,600 (44%)
Tier 3	65 (5%)	842 (20%)	75 (4%)	1,281 (22%)
Tier 4	16 (1%)	249 (6%)	27 (2%)	584 (10%)

Results

Introduction

The National Committee for Quality Assurance (NCQA) provides nationally accepted outcome measurement protocols under the Healthcare Effectiveness Data and Information Set (HEDIS). The outcome measures provided in this report are a selection of the most appropriate measures for evaluating the CCHH Program in Iowa given the small number of CCHH enrollees who met the inclusion criteria. The three primary outcomes, namely, emergency department visits, skilled nursing facility admissions, and hospital readmissions are normally considered to occur infrequently or rarely. In particular, since those 65 years of age and over and those with dual Medicaid/Medicare eligibility were removed from the outcome study population, there is very little reason to expect skilled nursing facility admissions.

Limitations

Administrative data has the limitations listed below.

- Only claims actually submitted by the providers, facilities and pharmacies and paid by Medicaid are used for outcome rate calculations, we may be missing claims and therefore, underestimating the rates for specific services.
- Providers and facilities may not use diagnosis codes for conditions consistently. This may lead to over or under counting certain conditions.

Inclusion criteria for outcome analyses

We did remove members who were eligible for Medicare at any time during the fiscal year, as we are unable to determine what occurred during the months when Medicare was the primary payer.

This resulted in 4,087 members for inclusion in the FY 2014 outcomes analyses and 4,493 members for inclusion in the FY 2015 outcomes analyses. 2,879 of these members are included in both FY 2014 and FY 2015. This number is reduced for outcomes that require at least 11 months of eligibility for inclusion. Our comparison group includes Medicaid members who were never eligible for the Chronic Condition Health Home, the Integrated Health Home, and were not in Medicare at any time. In addition, the comparison group includes members who are income eligible, eligible due to a disability determination, or in foster care. They do not include Medicaid members in the expansion, dual eligible members or members with months in reduced coverage programs such as the Family Planning Waiver.

Outcome Measures

Ambulatory Care

Ambulatory care visits include any visits to a health care provider that do not include an inpatient admission. These visits encompass physician office visits, outpatient clinics, and emergency departments. Outpatient visits were defined through Current Procedural Terminology (CPT) coding and revenue codes. The CPT codes included 99201-99205, 99211-99215, and 99241-99245 to define office visits; 99341-99345, and 99347-99350 to define home visits; 99304-99310, 99315, 99316, and 99318 to define nursing facility care; 99324-99328 and 99334-99337 to define domiciliary or rest home care; 99381-99387, 99391-99397, 99401-99404, 99411, 99412, 99420 and 99429 to define preventive medicine; and 92002, 92004, 92012 and 92014 to define ophthalmology and optometry. The revenue codes included 510-519, 526-529 982, and 983 to define office visits and 524 and 525 to define nursing facility care. ED visits were limited to care provided in the Emergency Department and defined by combinations of codes as follows: 1) revenue code 450-459 or 981, 2) CPT code 10040-69979 and place of service 23, or 3) CPT code 99281-99285. Emergency department visits include care provided in the emergency room.

One modification was made to the Healthcare Effectiveness Data and Information Set (HEDIS) specifications for this measure: mental health and substance abuse claims that are normally removed were retained, some of these diagnoses may be used to justify enrollment into the Chronic Care Health Home.

Tables 6 and 7 and Figures 3-6 present the rates for ambulatory visits broken into ED and outpatient. The rates reflected in Figure 3 illustrate that as the number of chronic conditions increases so does the number of visits per 1,000 eligible months, especially ED visits. Table 7 and Figure 4 provide the visit rates by age. Not surprisingly, the rates for both ED and outpatient visits are lowest for children, adolescents and young adults. The outpatient visit rate continues to rise with age, while the ED rate rises and then declines for the oldest group. Figure 5 shows that women are more likely to utilize the ED and outpatient care than men across all age groups. The rate of ED visits generally declined for all age and gender groups over the three year study period. A dashboard is provided in Figure 6 allowing comparisons by age and study group for the three year period. ED rates for CCHH members mirror the results found for Integrated Health Home (IHH) members with initial decreases in ED use followed by an upturn in SFY 2015. It is difficult to investigate this change in the short term, however, the preparation for Medicaid Modernization may have made it difficult for providers and members to focus on the primary goals of the CCHH. As the ED visit rate moved, Figure 7 indicates that for at least two of the age groups, the outpatient visit rate moved in the opposite direction. For those 20-44 and 45-64 as the rate of outpatient visits increased ED rates decreased.

Table 6. Emergency department and outpatient visits by CCHH tier

	ED visits/1000 months				Outpatient Visits/1000 months			
Tier level	FY 2012	FY 2013	FY 2014	FY 2015	FY 2012	FY 2013	FY 2014	FY 2015
Tier 1	93	77	79	87	559	527	466	427
Tier 2	139	115	114	122	705	706	641	613
Tier 3	137	117	151	176	934	874	798	788
Tier 4	95	144	149	176	1110	1149	1148	1007
Comparison Group	72	66	62	73	467	418	386	402

Figure 3. Emergency department visits per 1000 eligible months by tier and comparison group, FY 2012-2015

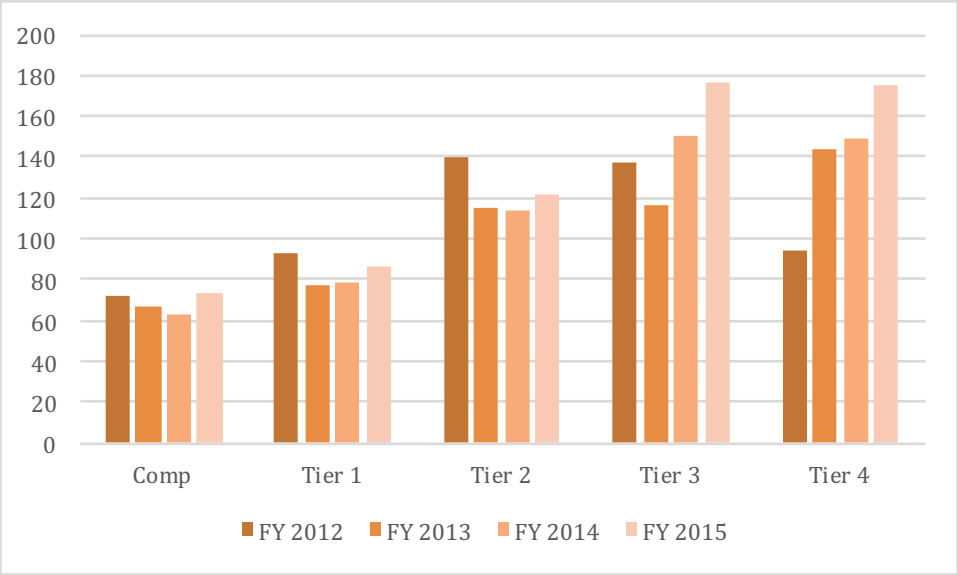


Table 7. Emergency department and outpatient visits per 1000 eligible months by age and year for members enrolled in the CCHH for at least 1 month

	ED visits/1000 months				Outpatient Visits/1000 months			
Age	FY 2012	FY 2013	FY 2014	FY 2015	FY 2012	FY 2013	FY 2014	FY 2015
0-19 years old	65	54	57	63	483	310	375	381
20-44 years old	188	129	156	202	715	682	687	659
45-64 years old	83	86	99	123	741	771	837	781

Figure 4. Emergency department visits per 1000 eligible months by age and year for CCHH members

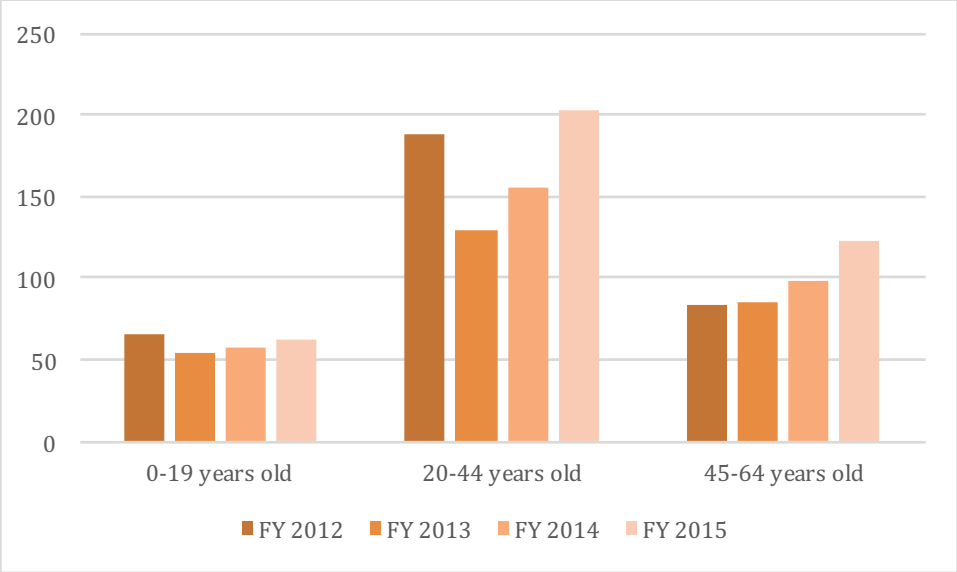


Figure 5. ED visits/1000 eligible months by gender, age and year for CCHH members

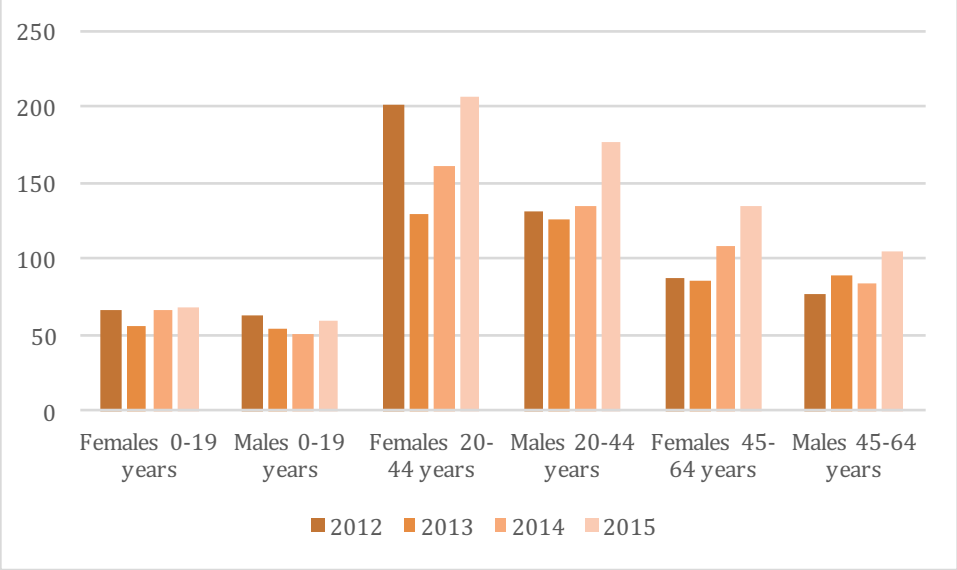
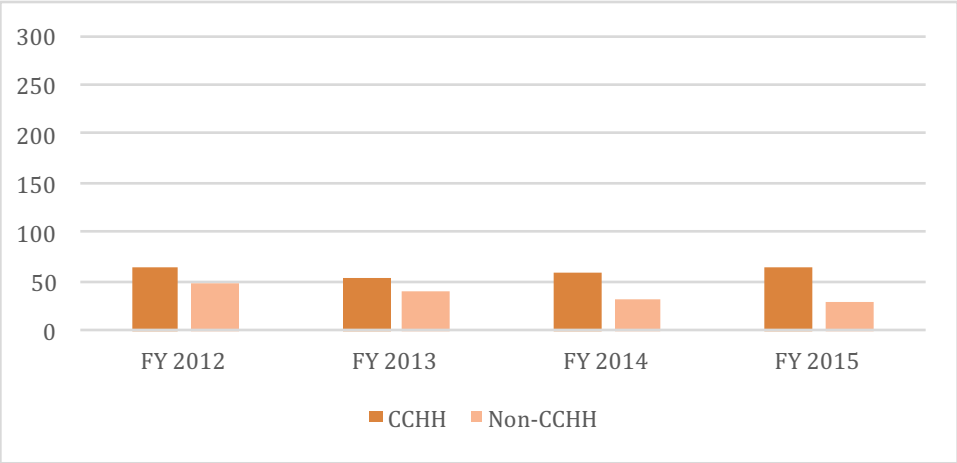
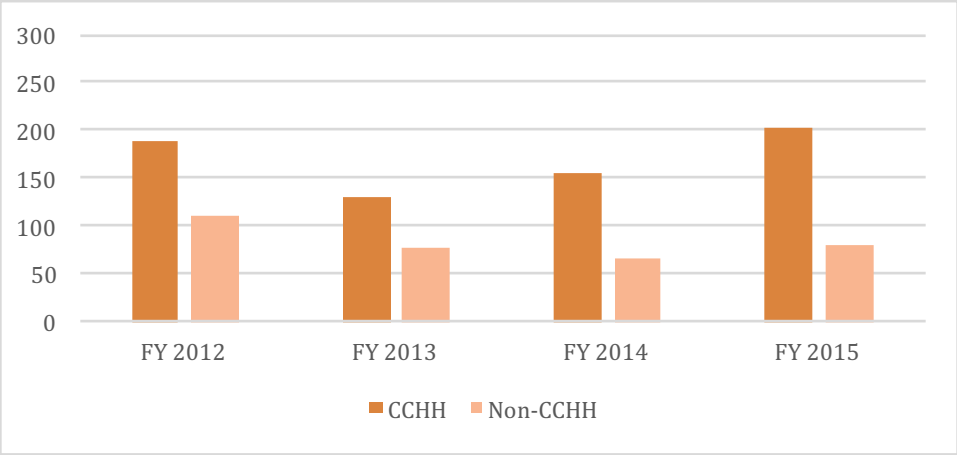


Figure 6. ED visits/1000 eligible months by age and CCHH enrollment dashboard

0-19 years of age



20-44 years of age



45-64 years of age

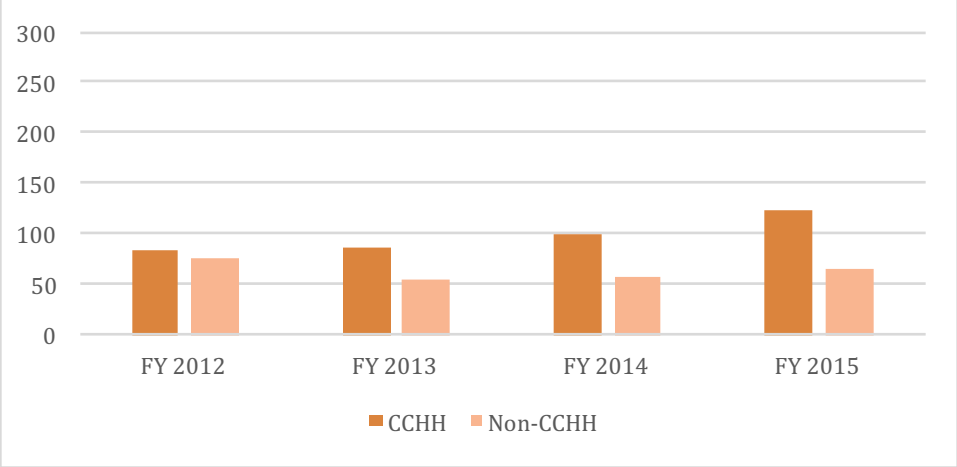
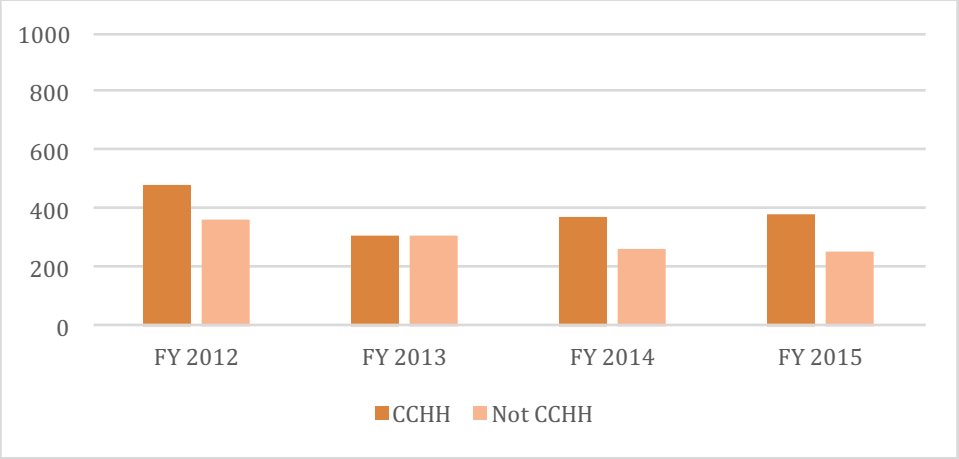
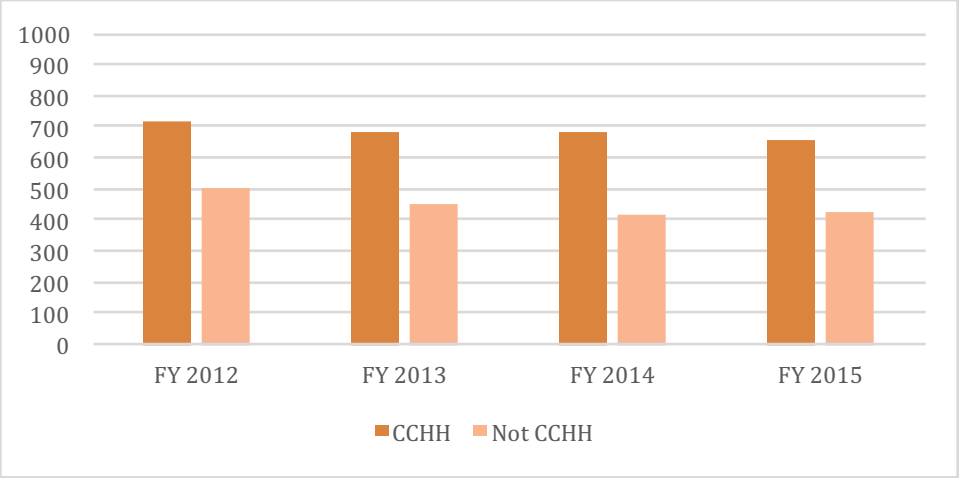


Figure 7. Outpatient visits/1000 eligible months by age and CCHH enrollment dashboard

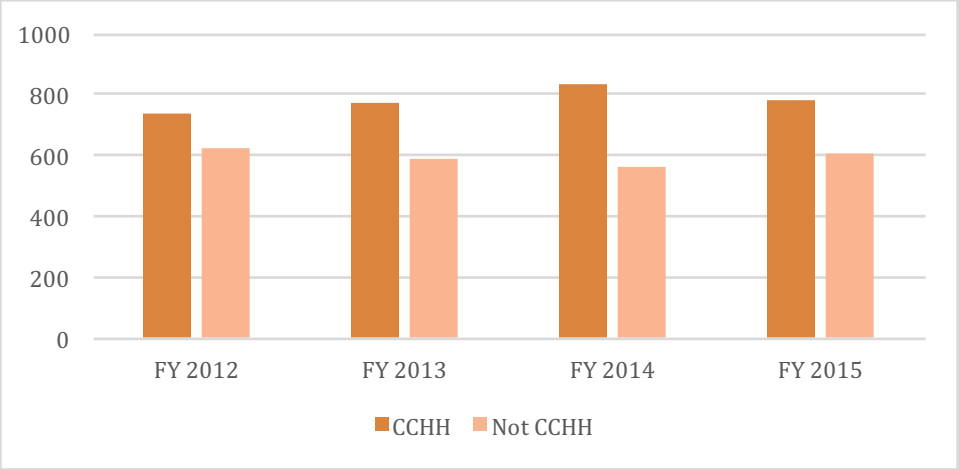
0-19 years of age



20-44 years of age



45-64 years of age



Emergency department diagnosis

Primary diagnosis codes associated with an ED visit were used to determine the most common reasons for ED visits (Table 8). As has been seen in previous studies, the primary reasons that enrollees come to the ED are related to pain-Abdominal, Chest, Back, and Headache. Respiratory symptoms are listed as the fifth most common as would be expected in a group that has asthma as

one of the qualifying diagnoses. ED visits for these reasons are expected to decrease as an outcome of the CCHH, however, as more individuals are enrolled with asthma the numbers are expected to increase despite the decrease in rates.

Table 8. Top ten emergency department diagnoses

ICD-9	Condition	Number of visits 2015	Number of visits 2014	Rank 2014
786.5-786.59	Chest pain	319	252	1
789.0 & 789.09	Abdominal pain	209	202	2
784.0 & 346.9	Headache/Migraine	207	191	3
724.1-724.9	Back pain	183	155	4
491 & 493	Chronic bronchitis/Asthma	178	152	5
465.9	Acute URI	130	50	8
462	Acute pharyngitis	92		
599.0	UTI	80	76	6
729.5	Pain in limb	67	63	7
490	Bronchitis, unspecified	53		
525.9	Problem with teeth		47	10
466	Acute bronchitis		48	9
Total				

Nursing facility utilization

Those enrolled in the CCHH are expected to have a decreased rate of skilled nursing facility admissions. Only those members enrolled for at least 11 months in the year were included in the rates calculations. Numbers of admissions are very small for children and adolescents, precluding the outcomes analyses. However, we were able to determine the rate of nursing facility admission for adults. The rate per 1,000 months of eligibility for skilled nursing facility admission and intermediate care facility admission are contained in Figures 8 and 9. Skilled nursing facility admissions rose slightly in both groups for the first year, fell in the CCHH group in SFY 2014, and rose again in SFY 2015. However, intermediate care facility rates of admission for the CCHH members was rising and then fell following the implementation of the Health Home program, while these rates for the comparison group were falling and then rose in the post-implementation period. This provides evidence that the CCHH may be helping to avoid intermediate nursing facility admissions. However, these results should be interpreted with care due to the small numbers of nursing facility admissions.

Figure 8. Skilled nursing facility admissions per 1,000 months of eligibility for Medicaid MMH members and comparison group members, CY 2011-2013

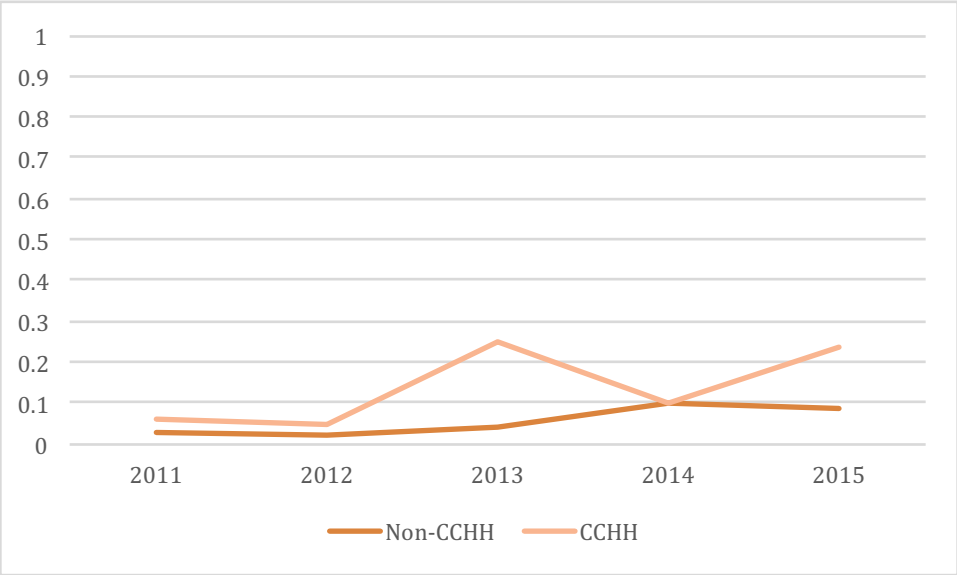
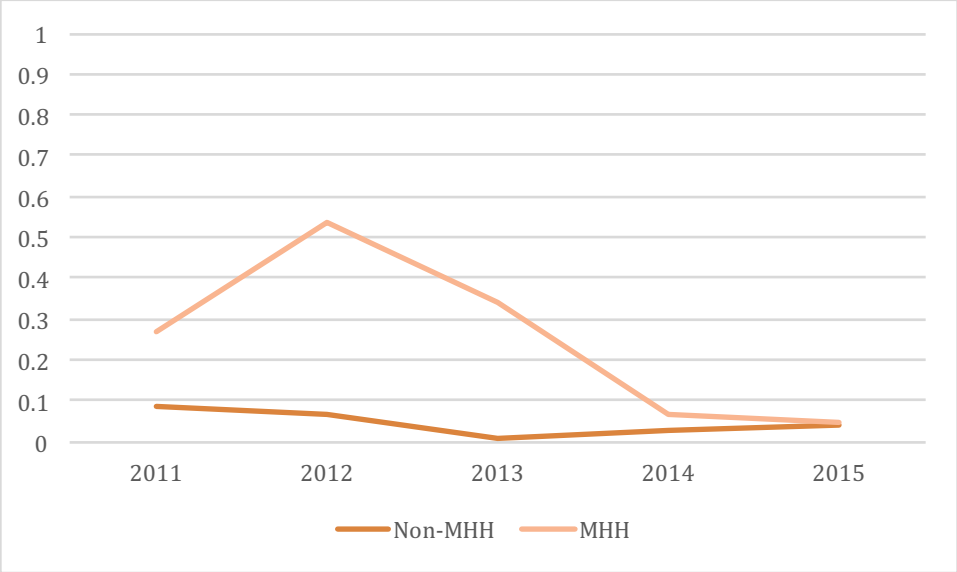


Figure 9. Intermediate nursing facility admissions per 1,000 months of eligibility for Medicaid MMH members and comparison group members, FY 2011-2013



Hospital Readmission

The outcome measure for hospital readmission is derived from the HEDIS All Cause Plan Readmission rate measure. The number of enrollees was too small to adequately risk adjust the data, however, some information regarding readmissions serves to inform the evaluation. Stays for pregnancy related diagnoses are removed from the analyses. There were 132 index hospitalizations with 83 readmissions of which 20 (15%) were within 30 days in SFY 2014 and 318 index hospitalizations with 110 readmissions of which 41 (16%) were within 30 days in SFY 2015.

Primary Care

One explanation for the decreases in ED utilization may be the increased reliance on primary care. Three measures are used to assess primary care utilization: had an ambulatory care visit, had a preventive care visit and had a primary care visit. An ambulatory care visit indicates any outpatient or clinic visit with a procedure code including: 99385-99387, 99395-99397, 99401-99404, 99411, 99412, 99420, 99429, 99201-99205, 99211-99215, 99241-99245, 99341-99350, 99304-99310, 99315, 99316, 99318, 99324-99328, 99334-99337, 92002, 92004, 92012, 92014, G0402, G0438, G0439, S0620, S0621 or a diagnosis code including: V70.0, V70.3, V70.5, V70.6, V70.8 or V70.9. If the visit occurred at a hospital the claim

must indicate that the visit was at an outpatient clinic providing general ambulatory care including family medicine or general internal medicine. A primary care visit indicates an ambulatory visit that occurred with a primary care provider including: physicians or ARNPs with a specialty of family medicine, pediatrics, OB/Gyn, or internal medicine or a rural health clinic, federally qualified health center, maternal health center, or certified nurse midwife. An ambulatory care visit with a preventive care code includes: 99385-99387, 99395-99397, 99401-99402, 99411-99412, 99420, 99429, G0402, G0438 or G0439.

CCHH members had higher rates of all three visits prior to the start of the program, which is to be expected as they are more likely to have a chronic illness. Preventive visit rates were very low for all age groups across both study groups (Table 9, Figure 10). Both CCHH members and non-CCHH members ages 20-44 showed an initial decline in preventive visits that increased over time, while the rates for those 45-64 years of age remained relatively stable for the first 2 years of the program and then increased. Primary care and ambulatory care visit rates were relatively high in the CCHH group throughout the study period (94-98%), remaining stable (Table 10, Figure 11). In the comparison group the rates were lower but also remained relatively stable with the exception of a drop in those 20-44 years of age in CY 2013 (Table 11). We do not report rates for those over 64 years of age as the numbers in the groups were low, ranging from 17-30.

Table 9. Preventive visit rates by age and year

	CCHH members					Non-CCHH members				
Age	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
20-44 years old	22%	25%	19%	25%	24%	20%	17%	14%	24%	23%
45-64 years old	11%	11%	11%	16%	15%	8%	11%	9%	15%	17%

Figure 10. Rate of preventive visits by age and year, FY 2011-2015

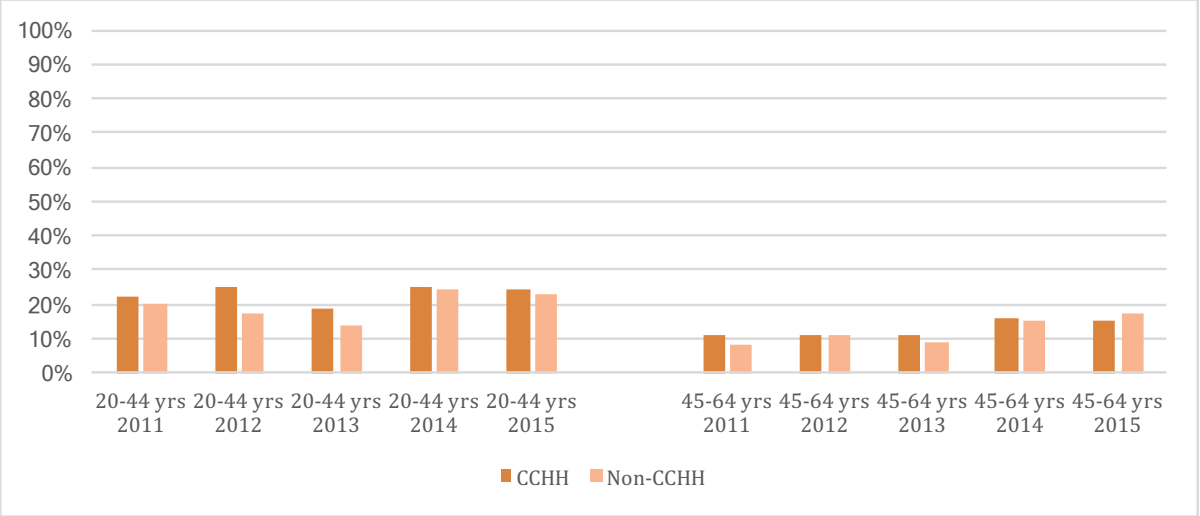


Table 10. Primary care visit rates by age and year

	CCHH members					Non-CCHH members				
Age	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
20-44 years old	94%	96%	94%	96%	97%	84%	82%	68%	88%	86%
45-64 years old	96%	97%	96%	97%	95%	84%	84%	80%	90%	88%

Figure 11. Primary care visit rates by age and year, FY 2011-2015

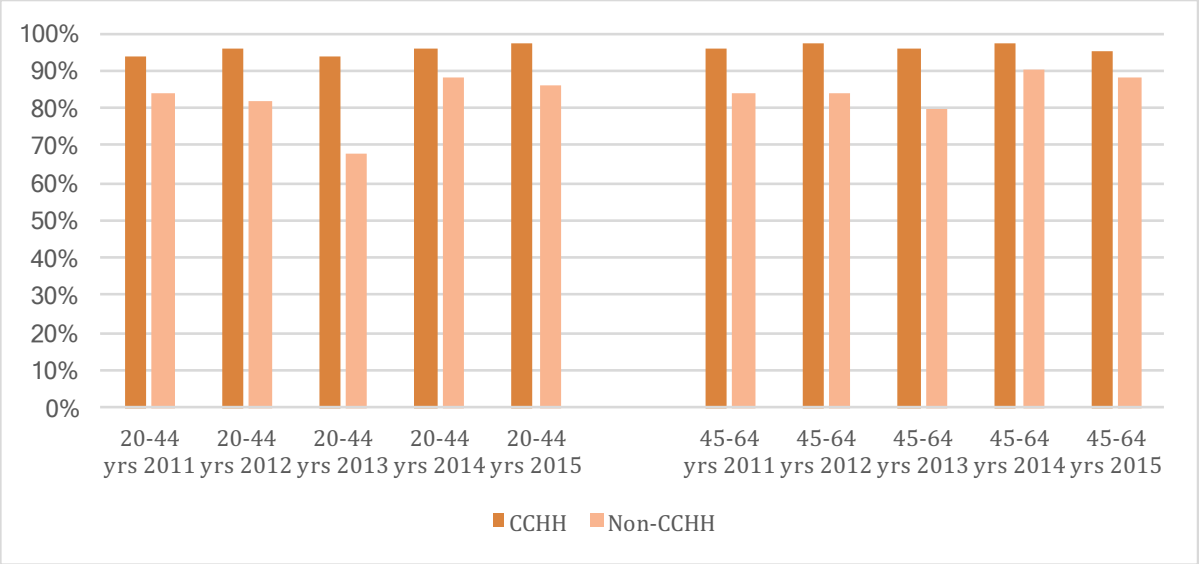


Table 11. Ambulatory care visit rates by age and year

	CCHH members					Non-CCHH members				
Age	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
20-44 years old	95%	97%	95%	98%	98%	87%	85%	72%	90%	87%
45-64 years old	97%	98%	97%	98%	95%	86%	87%	83%	91%	90%

Conclusion

Though there were indicators of CCHH successes during the first 2 years of the program, during the third year outcome rates begin to reverse indicating that these successes may be difficult to maintain over time. Further investigation into the program to determine what factors may be affecting this change in outcome rates is needed.

Appendix A: Outcome Results for CMS Reporting

Introduction

These outcomes include only members 0-64 years of age. Members 65 and over have incomplete Medicaid claims data as they are primarily covered through Medicare, therefore, we do not include them in the rates. CY indicates the Calendar Year while RY indicates the Reporting Year. Reporting Years include the data from the previous Calendar Year. IHH indicates the Integrated Health Home and CCHH indicates the Chronic Conditions Health Home.

Adult Body Mass Index

This measure calculates the proportion of health home members 18-74 who had an outpatient visit and whose Body Mass Index (BMI) was documented in either the calendar year or the year prior to the calendar year. Enrollees must be eligible for at least 11 months in the calendar year and for at least 11 months in the year before the calendar year. With this enrollment requirement, the outcome cannot be calculated for the first time until the second full calendar year: 2014 for the CCHH and 2015 for the IHH. The following codes were used to identify an outpatient visit and BMI:

Outpatient visit

CPT codes

99201-99205, 99211- 99215, 99241, 99242, 99243- 99245, 99341- 99345, 99347- 99350, 99381- 99387, 99391- 99397, 99401-99404, 99411, 99412, 99420, 99429, 99455, 99456, G0402, G0438, G0439, G0463, T1015

Revenue codes

0510- 0517, 0519-0523, 0526-0529, 0982, 0983

BMI

ICD-9

V85.0- V85.54

ICD-10

Z68.1-Z68.45

Measure modifications

- Women who had been pregnant during the calendar year or the year prior to the calendar year are normally excluded from this measure. The rate of pregnancy among women in the IHH and CCHH is extremely low, so we did not include this step.
- Members with primary coverage through Medicare were excluded from the measure. This resulted in an age range of 18-64 years of age, not 18-74 years of age.

Table 12.Adult BMI by Year

	Denominator	Numerator	%BMI
CY 14 (RY 15)	374	43	11.50%
CY 15 (RY 16)	790	198	25.06%

Screening for Clinical Depression

This measure is designed to calculate the proportion of health home members age 12 and over who were enrolled for at least 3 months during the calendar year and were screened for depression with a standardized tool and with a follow-up plan based upon the screening tool. This measure requires access to the medical record or EHR. We are unable to calculate this measure as we only have access to administrative claims.

Plan All-Cause Readmissions Rate

This measure calculates the proportion of hospitalizations (Index Hospital Stays) with a readmission within 30 days for health home members who are over 18 years of age reported in two sets: 18-64 and 65 and older. Hospitalizations meeting the following criteria are categorized as Index Hospital Stays (IHS):

1) Discharge must occur between January 1 and December 1 of the calendar year
2) Have a minimum length of stay (LOS) of 1 day
3) Patient is discharged alive
4) Principal diagnosis is not related to pregnancy or a perinatal condition
5) Patient is enrolled in the health home for 365 days prior to and 30 days after the inpatient stay
6) The inpatient stay did not have a planned readmission such as a kidney transplant or chemotherapy within 30 days

Measure modifications

- Members with primary coverage through Medicare were excluded from the measure. This resulted in reporting only one set: 18-64 years of age.

Table 13. Plan All-Cause Readmissions Rate – RY 2014

Age	Count of Index Stays (Denominator)	Count of 30-Day Readmissions (Numerator)	Observed Readmissions (Num/Den)
18-44	15	1	6.7%
45-54	12	1	8.3%
55-64	13	2	15.4%

Table 14. Plan All-Cause Readmissions Rate – RY 2015

Age	Count of Index Stays (Denominator)	Count of 30-Day Readmissions (Numerator)	Observed Readmissions (Num/Den)
18-44	67	11	16.4%
45-54	80	12	15.0%
55-64	110	21	19.1%

Table 15. Plan All-Cause Readmissions Rate – RY 2016

Age	Count of Index Stays (Denominator)	Count of 30-Day Readmissions (Numerator)	Observed Readmissions (Num/Den)
18-44	89	10	11.2%
45-54	114	25	21.9%
55-64	152	22	14.5%

Follow-up after Hospitalization for Mental Illness

This measure calculates the proportion of hospitalizations for mental illness discharged between January 1 and December 1 of the calendar year with a follow-up outpatient/medical visit within 30 days of discharge and with a follow-up outpatient/medical visit within 7 days of discharge for health home members 6 years of age and older who were enrolled in the health home from date of discharge through 30 days afterwards. Reason for hospitalization was considered mental illness if the principal diagnosis by ICD-9 or ICD-10 matched any of the following:

ICD-9

290.0-290.9, 293.0-302.9, 306.0-316

ICD-10

F03.90, F03.91, F20.0- F20.9, F21-F53, F59- F69, F80.0-F99

Discharges that were followed by another admission within 30 days or transfer to a non-acute care facility were not included. Discharges that were followed by another admission within 30 days at an acute facility without a primary diagnosis of mental illness were also excluded.

The following codes are used in a variety of combinations to define the follow-up visits:

- CPT
  98960, 98962, 99078, 99201, 99220, 99241, 99245, 99341, 99350, 99383, 99387, 99393, 99397, 99401, 99404, 99411, 99412, 99510, G0155, G0176, G0177, G0409, G0410, G0411, G0463, H0002, H0004, H0031, H0034, H0040, H2001, H2010, H2020 , M0064 S0201, S9480, S9484, S9485, T1015, 99495, 99496
- Revenue code
  0513, 0900-0905, 0907, 0911-0917, 0919, 0510, 0515-0517, 0519- 0523, 0526- 0529, 0982, 0983
- Place of service code
  03, 05, 07, 09, 11-15, 20, 22, 24, 33, 49, 50, 52, 53, 71, 72
- Provider specialty codes and/or provider type codes indicating a mental health practitioner or a behavioral healthcare facility.

Measure modifications

- Members with primary coverage through Medicare were excluded from the measure.
- We were unable to discern the provider specialty or type for all claims, therefore we were unable to exclude those visits that were not with a mental health practitioner or behavioral healthcare facility.

Table 16. Follow-up after Hospitalization for Mental Illness by Year

	Total number hospitalizations for mental health	Number of 7 day follow-up	Number with 30 day follow-up	7 day follow-up rate	30 day follow-up rate
RY 2014	100	23	46	23.0%	46.0%
6-17 years	14	1	2	7.1%	14.3%
18-64 years	86	22	44	25.6%	51.2%
RY 2015	103	35	54	34.0%	52.4%
6-17 years	9	4	5	44.4%	55.6%
18-64 years	94	32	50	33.0%	52.1%
RY 2016	91	17	27	18.7%	29.7%
6-17 years	13	6	8	46.2%	61.5%
18-64 years	78	11	19	14.1%	24.4%

Controlling High Blood Pressure

This measure calculates the proportion of health home members ages 18-85 who blood pressure was controlled. Unable to complete with administrative data as it requires clinical information on blood pressure value. This measure requires access to the medical record or HER to determine blood pressure readings OR claims with LOINC codes. We are unable to calculate this measure as we only have access to administrative claims without LOINC coding.

Care Transition – Timely Transmission of Transition Record

This measure calculates the proportion of all health home members who were discharged from an inpatient facility to home or self-care who had a transition record transmitted to the primary provider following discharge. Record transmission may be found in the medical records or HER, but there is no opportunity to discern this activity through administrative claims, therefore, we were unable to complete this measure.

Initiation and Engagement of Alcohol and Other Drug Dependence Treatment

This measure calculates the proportion of health home members 13 years and older with a new episode of alcohol or other drug dependence that initiated treatment within 14 days of diagnosis and, for those who initiated treatment, received at least 2 additional services within 30 days of initiation. Members had to be enrolled at least 60 days prior to and 44 following the new diagnosis. The following diagnosis codes or procedure codes:

- ICD-9
  291.0- 291.9, 303.00- 305.92, 535.30-535.31, 571.1
- ICD-10
  F10.10-F16.29, F18.10- F19.29
- ICD-9 procedure codes
  94.61- 94.69
- ICD-10 procedure codes
  HZ30ZZZ-HZ5DZZZ, HZ81ZZZ-HZ99ZZZ

These diagnoses and procedure codes are used with visit codes to determine the initiation visit:

- CPT
  98960-98962, 99078, 99201-99205, 99211-99215, 99217-99220, 99241-99245, 99341-99345, 99347-99350, 99384-99387, 99394-99397, 99401-99404, 99408, 99409, 99411, 99412, 99510, G0155, G0176, G0177, G0396, G0397, G0409- G0411, G0443, G0463, H0001, H0002, H0004, H0005, H0007, H0015, H0016, H0020, H0022, H0031, H0034, H0035- H0037, H0039, H0040, H2000, H2001, H2010-H2020, H2035, H2036, M0064, S0201, S9480, S9484, S9485, T1006, T1012, T1015, 90791, 90792, 90832-90834, 90836-90840, 90845, 90847, 90849, 90853, 90875, 90876, 99221-99223, 99231-99233, 99238, 99239, 99251-99255
- Revenue code
  0510, 0513, 0515-0517, 0519- 0523, 0526- 0529, 0900, 0902-0907, 0911-0917, 0919, 0944, 0945, 0982, 0983
- Place of service code
  03, 05, 07, 09, 11-15, 20, 22, 33, 49, 50, 52, 53, 57, 71, 72

Measure modifications

- Members with primary coverage through Medicare were excluded from the measure.
- We were unable to calculate the second numerator, 2 or more additional services following initiating treatment due to concerns with place of service codes for some claims. This issue is being further investigated.

Table 17. Initiation of Alcohol and Other Drug Dependence Treatment by Year

Year	Did not Initiate Treatment	Initiated Treatment	Total IESD	Initiation %
RY 2014	124	24	148	16.2%
13-17 yrs	3	0	3	0.0%
18-64 yrs	121	24	145	16.6%
RY 2015	195	29	224	12.9%
13-17 yrs	3	0	3	0.0%
18-64 yrs	192	29	221	13.1%
RY 2016	266	41	307	13.4%
13-17 yrs	2	0	2	0.0%
18-64 yrs	264	41	305	13.4%

Prevention Quality Indicator (PQI) 92: Chronic Conditions Composite

This measure calculates the rate of admission for chronic condition related diagnoses including: short-term and long-term complications from diabetes, COPD/Asthma in older adults, hypertension, heart failure, angina w/o procedure, uncontrolled diabetes, asthma in younger adults, lower-extremity amputations among patients with diabetes among adults 18 and over. The rate is calculated utilization the AHRQ WIN QI software housed on the AHRQ website.

Measure modifications

- Members with primary coverage through Medicare were excluded from the measure.
- The rate for RY 2016 is not computed as WIN QI software version for ICD-10 was not yet implemented. It is now operational and will be used for RY 2016 at CMS' request.

Table 18. PQI 92 Rate by Year

	PQI admissions	Member months	PQI Composite rate
RY 2014	74	17,260	429
RY 2015	109	28,273	386
RY 2016	117	34,482	339

Ambulatory Care – Emergency Department Visits

This measure calculates the rate of emergency department visits during the Calendar Year for health home members of all ages. There is no enrollment requirement for members with this measure. Emergency department visits are defined with the following codes:

- CPT
  99281-99285
- Revenue code
  0450-0452, 0456, 0459, 0981
- Place of service
  23

Measure modifications

- Members with primary coverage through Medicare were excluded from the measure.

Table 19. Emergency Department Visits by Age – RY 2014

Age	Visits	Enrollee Months	Visits per 1,000 Enrollee ED Months
0-17 years	286	4,273	66.93
18-64 years	2,805	17,260	162.51

Table 20. Emergency Department Visits by Age – RY 2015

Age	ED Visits	Enrollee Months	Visits per 1,000 Enrollee Months
0-17 years	791	12,974	60.97
18-64 years	4,393	28,273	155.38

Table 21. Emergency Department Visits by Age – RY 2016

Age	ED Visits	Enrollee Months	Visits per 1,000 Enrollee Months
0-17 years	905	16,761	53.99
18-64 years	5,119	34,482	148.45

Inpatient Utilization

This measure calculates the inpatient utilization, including discharges per 1,000 member months, number of days per 1,000 member months, and average length of stay, for health home members of all ages for all acute hospitalizations with a discharge during the Calendar Year. Hospitalizations for newborn infants are not include. The hospitalizations are divided into Maternity, Mental and Behavioral Disorders, Surgery, Medicine.

The definitions for the types of hospitalizations are given below.

- Maternity
  MS-DRG
  765-770, 774-782
- Mental and Behavioral Disorders
  ICD-9
  290.00-319.00
  ICD-10
  F01-F99
- Surgery
  MS-DRG
  1-8, 10-14, 16, 17, 20-42, 113-117, 129-139, 163-168, 215-265, 326-358, 405-425, 453-517, 570-585, 614-630, 652-675, 707-718, 734-750, 799-804, 820-830, 853- 858, 901-909, 927- 929, 939-941, 955-959, 969, 970, 981- 989
- Medicine
  52-103, 121-125, 146-159, 175-208, 280-316, 368-395, 432-446, 533-566, 592-607, 637-645, 682-700, 722-730, 754-761, 808-816, 834-849, 862-872, 913-923, 933-935, 947-951, 963-965, 974-977

Measure modifications

- Members with primary coverage through Medicare were excluded from the measure.

Table 22. Inpatient Utilization – RY 2014

Type/Age	Number of Discharges	Disharges/1,000 Enrollee Months	Number of Days	Days/1,000 Enrollee Months	Average length of stay
Inpatient					
0-17	24	5.62	66	15.45	2.75
18-64	466	27.00	1,989	115.24	4.27
Total Inpatient	490	22.76	2,055	95.43	4.19
Maternity*					
18-64	50	2.32	131	6.08	2.62
Total Maternity	50	2.32	131	6.08	2.62
Mental and Behavioral Disorders					
0-17	0	-	0	-	0.00
18-64	10	0.58	24	1.39	2.40
Total Mental and Behavioral Disorders	10	0.46	24	1.11	2.40
Surgery					
0-17	2	0.47	7	1.64	3.50
18-64	93	5.39	412	23.87	4.43
Total Surgery	95	4.41	419	19.46	4.41
Medicine					
0-17	29	6.79	52	12.17	1.79
18-64	304	17.61	1,339	77.58	4.40
Total Medicine	333	15.46	1,391	64.60	4.18

Table 23. Inpatient Utilization – RY 2015

Type/Age	Number of Discharges	Disharges/1,000 Enrollee Months	Number of Days	Days/1,000 Enrollee Months	Average length of stay
Inpatient					
0-17	43	3.31	186	14.34	4.33
18-64	713	25.22	3,071	108.62	4.31
Total Inpatient	756	18.33	3,257	78.96	4.31
Maternity*					
18-64	93	2.25	239	5.79	2.57
Total Maternity	93	2.25	239	5.79	2.57
Mental and Behavioral Disorders					
0-17	0	0.00	0	0.00	0.00
18-64	3	0.11	15	0.53	5.00
Total Mental and Behavioral Disorders	3	0.07	15	0.36	5.00
Surgery					
0-17	10	0.77	57	4.39	5.70
18-64	141	4.99	756	26.74	5.36
Total Surgery	151	3.66	813	19.71	5.38
Medicine					
0-17	30	2.31	122	9.40	4.07
18-64	462	16.34	1,959	69.29	4.24
Total Medicine	492	11.93	2,081	50.45	4.23

Table 24. Inpatient Utilization – RY 2016

Type/Age	Number of Discharges	Disharg-es/1,000 Enrollee Months	Number of Days	Days/1,000 Enrollee Months	Average length of stay
Inpatient					
0-17	60	3.58	246	14.68	4.10
18-64	817	23.69	3,412	98.95	4.18
Total Inpatient	877	17.11	3,658	71.39	4.17
Maternity*					
18-64	77	1.50	201	3.92	2.61
Total Maternity	77	1.50	201	3.92	2.61
Mental and Behavioral Disorders					
0-17	0	0.00	0	0.00	0.00
18-64	1	0.03	1	0.03	1.00
Total Mental and Behavioral Disorders	1	0.02	1	0.02	1.00
Surgery					
0-17	11	0.66	62	3.70	5.64
18-64	194	5.63	976	28.30	5.03
Total Surgery	205	4.00	1,038	20.26	5.06
Medicine					
0-17	45	2.68	177	10.56	3.93
18-64	529	15.34	2,127	61.68	4.02
Total Medicine	574	11.20	2,304	44.96	4.01

Nursing Facility Utilization

This measure calculates the rate of nursing facility stays under 101 days and the rate of nursing facility stays over 100 days per 1,000 months of enrollment for health home member adults 18 and over. Admission to a nursing facility was defined as any admission to a skilled nursing facility or intermediate nursing facility September 1 of the year prior to the Calendar Year through August 31 or the Calendar Year for health home members that have not been admitted to a nursing home, members that have been admitted to a nursing facility in the past with no plan to return, and members that have been admitted to a nursing facility in the past but had remained in the community for 30 days.

Measure modifications

- Members with primary coverage through Medicare were excluded from the measure.
- We were unable to determine whether members had 'ever' been in a nursing facility or whether, if they had been in a nursing facility in the past, they were intended to return. Therefore, we utilized a rule that nursing home admission were counted in our measure if we did not find a previous nursing facility admission in the previous 6 months.

Table 25. Nursing Facility Utilization by Program and Year

Year	Number of Short Term Admissions	Short Term Admissions/1,000 Enrollee Months	Number of Long Term Admissions	Long Term Admissions/1,000 Enrollee Months	Number of Months
RY 2014	3	0.17	2	0.12	17,260
RY 2015	13	0.46	4	0.14	28,273
RY 2016	16	0.46	1	0.03	34,482