

Claims data reports by Local Community Health Innovation Regions (CHIRs)

(FY2021 Appropriation Act - Public Act 166 of 2020)

June 30, 2021

Sec. 1144. From the funds appropriated in part 1, the department shall report by June 30 of the current fiscal year trended cost and utilization, including inpatient and emergency department, claims data reports in aggregate by local community health innovation regions (CHIRs) and specific to each Medicaid health plan for their beneficiaries that were clients of local CHIRs, for the period beginning with the fiscal year that ended September 30, 2015 through the current fiscal year to the senate and house appropriations subcommittees on the department budget, the senate and house fiscal agencies, the senate and house policy offices, and the state budget office.



Financial Status Update of Community Health Innovation Regions

A Community Health Innovation Region (CHIR) is a cross-sector collaborative aimed at improving community health by meeting social needs of individuals and moving upstream to improve community conditions. The long-term goal of addressing these primary aims is to improve the health and well-being of residents, lower unnecessary medical costs, and reduce health disparities. This report will focus on the CHIR's ability to lower costs.

Five CHIRs were officially designated during the State Innovation Model (SIM) initiative. The five regions are: Genesee County, Jackson County, Livingston and Washtenaw Counties, Muskegon County, and Northern Michigan (a 10-county collaborative) in the Northwest Lower Peninsula.

SIM started in February 2015 and federal funding ended January 2020. Michigan's SIM initiative was based on a plan that focused efforts on developing and strengthening connections among providers of clinical care and community-based organizations that address social determinants of health (SDoH). The focus of SIM year one was on internal State planning efforts and CHIR backbone organization (BBO) selection. In SIM year two, the focus transitioned to CHIR local planning and design efforts. Each participating community was required to establish or modify a governing body, convene stakeholders to develop a plan for addressing non-health issues that will, over time, reduce emergency department costs while improving quality and design infrastructure necessary to support the effort. It was not until year three of SIM (January 2018) that communities were able to move into full implementation, working with healthcare providers and other partners to implement social needs screening and linking individuals to health and social care across the community, a practice referred to as clinical-community linkage.

The main components of each CHIR are a regional cross-sector steering committee (governing entity), a backbone organization, a referral hub, regional service providers and community organizations. Each CHIR has built upon existing local efforts, such as the Community Health Needs Assessments, to coordinate a shared vision, a common agenda, and a set of strategies to drive positive changes in community conditions. The BBO is responsible for convening stakeholders and ensuring the implementation of the strategies to support the shared vision. Rather than starting new programs, CHIRs work to coordinate people and organizations within a sector to create alignment, identify gaps in resources, reduce duplication of services, and increase care to residents. As individual sectors interact with other sectors, they move communities toward adapting to meet the needs of residents more efficiently. The current CHIR model is overseen by the following agencies:

| CHIR | BBO |
|----------------------|---|
| Genesee | Greater Flint Health Coalition |
| Jackson | Jackson Health Improvement Organization |
| Livingston-Washtenaw | Center for Health and Research Transformation |
| Muskegon | Muskegon Community Health Project |
| Northern | Northern Michigan Public Health Alliance |

CHIRs were required to focus on the SDoH of the Medicaid populations in their regions. SDoH are the economic and social conditions/systems that influence the health of individuals and communities. They are the conditions and systems in/under which people are born, grow, live, work and age. 80% of the influencers on a person's health are attributed to these social, economic, and environmental factors while only about 20% is influenced directly by the access and quality of clinical care (UWPHI, County Health Rankings model, 2014).

A central aim of the CHIRs is to build a more effective and aligned community system. A 2020 Evaluation of the Collective Impact Efforts of the Michigan CHIRs conducted by Michigan State University (MSU) found that a community system is starting to emerge that is more aligned with moving health upstream. This study concluded that Michigan CHIRs are “providing opportunities for health and social services to depart from ‘business as usual’ and experiment with new and different ways of working together.” Furthermore, the study found that the CHIR model allows for the opportunity for cross-sector partners to engage in innovative problem solving around shared concerns and goals, which plays a critical role in facilitating the transformative actions that emerge from CHIRs.

The CHIRs have promoted a level of cross-sector coordination, alignment and synergy that did not previously exist within their regions. Through cross-sector explorations of local data and cross-sector conversations about the barriers to effective outcomes for clients, local leaders realized the role of SDoH in influencing health and other outcomes. For example, physician residents are learning about SDoH in the three local Genesee County hospitals. Physician residents are now required to learn about SDoH and how to engage patients in the SDoH screening process. Additionally, Munson Hospital in Cadillac embraced the goal of no longer discharging to homelessness. This shift was a result of their engagement in the Homeless Systems Improvement project via the Northern Michigan CHIR.

Michigan CHIRs have also worked with payers to build new relationships with service providers. For example, Blue Cross Complete has started to support programs at Avalon Housing and is working on an integrated behavioral health project with Washtenaw Community Mental Health because of connections made by the Livingston-Washtenaw CHIR. More broadly, health plans are now paying for community paramedic care in the home. This shift emerged through the awareness partnerships forged in a CHIR workgroup.

MSU’s 2020 study reported statistically significant improvements in the referral process between 2018 and 2019 across the state, indicating that referrals are easier because of the CHIRs efforts and that health providers are more motivated to refer to social sector organizations because of the CHIR’s efforts. Social service providers reported that hospitals in their regions are significantly more aware of resources that are available to their patients in the community. As a result, social service providers in the region reported an increase in the number of referrals from those sources. Importantly, the relationships built through the CHIRs have also facilitated cross-sector connections and communication pathways that promoted service access and coordination for clients/patients. As a result of the CHIR’s efforts, health care providers and community service organization/agency staff are more likely to coordinate service and treatment plans with each other. Specifically, the development of a shared referral platform, a common referral process, and centralized database have also made it easier to connect clients to resources and to coordinate care.

The improved communication and partnerships led by Michigan CHIRs is resulting in systemic changes to improve traditional models of health care delivery. For example, in the Genesee CHIR, a new procedure in the emergency department connects patients with substance use disorder (SUD) to resources. Staff in the emergency department are now connecting SUD patients to peer recovery coaches 24/7 and screening for SDoH to provide wrap-around care for patients. In the Livingston-Washtenaw CHIR, new discharge policies will prevent individuals from being discharged from institutions into homelessness. New discharge policies at the Livingston County Jail and community hospitals will also prevent discharge to homelessness.

Provided the financial resources and flexibility to develop innovative solutions to address local needs and improve SDoH screening and referral processes, CHIRs are positioned to leverage cross-sector interests and talents. Critical to these efforts was the presence of an effective BBO coupled with engaged diverse leaders who committed to the shared vision and goals for transformative change.

Trended Utilization and Cost for Inpatient and Emergency Department Settings

Through a data sharing agreement with the Michigan Department of Health and Human Services (MDHHS), each region securely provided the department with a list of CHIR clients for analysis. It is worth noting that during SIM, each region was permitted to establish their own intervention and referral criteria. It is also important to note that this analysis does not consider the level of need (both medically and socially) that each individual client may have prior to the CHIR intervention. We do know from a previous evaluation completed by the Michigan Public Health Institute at the end of SIM, that CHIR clients who chose to seek out assistance were more likely to:

- be in Aged Blind and Disabled eligibility category (15% vs. 9%), or in Temporary Assistance for Needy Families (59% vs. 34%),
- receive care management/coordination services (29% vs. 5%),
- have four or more chronic conditions (60% vs. 25% for adults, 4% vs. 2% for children),
- live in the Michigan's top 10% most deprived neighborhoods (27% vs. 12%),
- have three or more emergency department visits during baseline year (29% vs. 9% for adults, 9% vs. 3% for children),
- have an acute hospitalization during baseline year (20% vs. 7% for adults, 6% vs. 2% for children), and
- have higher baseline year per member per month (PMPM) medical cost (\$432 vs. \$194 for adults, \$186 vs. \$61 for children).

In addition to serving Michigan residents who may have numerous chronic conditions and higher baseline medical costs, we also learned from CHIR client experience surveys conducted during SIM from three of the regions that clients were satisfied with their CHIR interactions. The surveys showed a significant majority of clients responded "Definitely yes" or "Mostly yes" when asked if the CHIR was able to help them get other resources they needed, ranging from 94%-79%. This same survey also reported that 87% of clients have a better understanding of how to get the services or help they need in the future. Lastly, the client experience survey stated 84% of clients surveyed agree that after working with the CHIR, they can do more to support their own health.

The purpose of the analysis for this report was to review claims data by each region and specific to each Medicaid health plan for their beneficiaries that were clients of local CHIRs. When reviewing the regions, there is the potential for the overall needs of the individual clients to not be uniform along with a wide variety of other variances that may have been present as each region worked through their own implementation challenges.

In four of the five regions, CHIR clients decreased their utilization of inpatient and emergency department services compared to utilization prior to becoming CHIR clients. In evaluating utilization rates for each CHIR, MDHHS calculated the number of emergency department visits from January 2016 to the month prior to enrollment divided by the total member-months and compared that rate to the number of emergency department visits from the month after enrollment through January 2021. This same method was conducted for inpatient visits as well.

The data set for emergency department visits represents emergency department visits that did not result in further inpatient services. MDHHS did not include data regarding emergency department visits where clients were admitted for inpatient care for two reasons. First, those visits were later captured by inpatient visit data. Second, if a client visited the emergency department and was subsequently admitted, it is likely the level of care was appropriate for the individual's health needs, as opposed to utilization of emergency department care when primary care is more medically appropriate.

Overall, the CHIRs demonstrated lower utilization and costs for emergency department visits and inpatient visits. **Across all regions, when reviewing total costs for CHIR clients, the analysis confirms an overall decrease of \$44.36 PMPM. If we apply that savings to the 301,751 member-months after enrollment, this equates to a savings of \$13,384,387.**

In four of the five regions, health plans decreased costs for inpatient and emergency department services for CHIR clients after they enrolled in the CHIR. MDHHS focused on two key metrics in evaluating cost trends for health plans covering CHIR clients. First, MDHHS calculated the sum of the total amount paid by health plan on behalf of Medicaid for the months prior to enrollment in a CHIR and for the months after enrollment in a CHIR to determine a percentage change in total amount paid per health plan. However, because of the variation in total months that CHIR clients were covered by the health plans pre- and post-enrollment in the CHIR, it is difficult to draw comprehensive conclusions about the cost savings from this category of data. If our analysis were to just take the totals, we would not account for the fact that there are many more member-months in the pre-enrollment group than in the post-enrollment group.

Therefore, to normalize the data across the time periods and account for these differences, MDHHS recommends that readers focus on the percent changes to PMPM, which represents the total amount of claims paid divided by the total number of member-months. A member-month is a combination of the health plan member and month (e.g., beneficiary #1234567 in January 2020) with the total pre- and post- being the number of individual member-months enrolled during the period being analyzed. MDHHS calculated PMPM percent changes for each health plan in each region for both emergency department visits and inpatient visits.

Utilization

The utilization analysis includes Medicaid fee-for-service, Medicaid health plan, and Health Michigan Plan Members data from January 1, 2016 to January 31, 2021. The “prior” time period includes activities from January 2016 to the month prior to enrollment. The “post” time period includes activities from the month after enrollment through January 2021. In order to capture the fee-for-service population within this utilization analysis below, the member-months totals include fee-for-service beneficiaries and will not align with the health plan member-month breakdowns later in this report.

| | <i>Genesee</i> | <i>Jackson</i> | <i>Livingston- Washtenaw</i> | <i>Muskegon</i> | <i>Northern</i> | <i>Total</i> |
|-------------------------------------|----------------|----------------|----------------------------------|-----------------|-----------------|---------------|
| Member-Months Prior to Enrollment | 95,213 | 237,196 | 3,316 | 12,298 | 79,122 | 427,145 |
| Member-Months Post Enrollment | 79,188 | 140,384 | 2,360 | 6,111 | 107,188 | 335,231 |
| <u>Emergency Room Visits</u> | | | | | | |
| ER Visits Prior to Enrollment Month | 10,525 | 23,474 | 1,413 | 2,401 | 8,597 | 46,410 |
| ER Visits Post Enrollment Month | 5,691 | 10,613 | 1,150 | 1,065 | 8,912 | 27,431 |
| ER Visits/Month Prior | 0.11054163 | 0.09896457 | 0.426115802 | 0.195234998 | 0.108654988 | 0.1086516 |
| ER Visits/Month Post | 0.07186695 | 0.07559978 | 0.487288136 | 0.174275896 | 0.083143635 | 0.0818272 |
| <i>% Difference</i> | -35.0% | -23.6% | 14.4% | -10.7% | -23.5% | -24.7% |

| Inpatient Visits | | | | | | |
|-------------------------|---------------|---------------|--------------|--------------|---------------|---------------|
| IP Visits Prior | 2361 | 3136 | 238 | 275 | 1270 | 7,280 |
| IP Visits Post | 864 | 1498 | 222 | 128 | 1263 | 3,975 |
| IP Visits/Month Prior | 0.02479703 | 0.01322113 | 0.071773221 | 0.02236136 | 0.016051161 | 0.0170434 |
| IP Visits/Month Post | 0.01091074 | 0.01067073 | 0.094067797 | 0.020945835 | 0.011783035 | 0.0118575 |
| % Difference | -56.0% | -19.3% | 31.1% | -6.3% | -26.6% | -30.4% |

Overall, emergency department visits decreased by 24.7% across the five CHIRs comparing pre- and post-enrollment data. Inpatient visits dropped even further across the five CHIRs, by 30.4% after clients enrolled in the CHIRs. We see similar decreases across the CHIR population when we focus in on PMPM emergency department and inpatient costs.

| TOTAL EMERGENCY DEPARTMENT - ALL | | | | | | | | |
|---|---------------------------|--------------------------|---------------------------|--------------------------|--------------------------|-------------------------|-------------------|---------------------|
| Payer Name | Member Month Prior | Member Month Post | Claim Counts Prior | Claim Counts Post | Amount Paid Prior | Amount Paid Post | PMPM Prior | PMPM Post |
| Aetna | 14,251 | 6,694 | 1,321 | 424 | \$196,521 | \$96,276 | \$13.79 | \$14.38 |
| Blue Cross Complete | 8,879 | 10,364 | 1,010 | 780 | \$187,762 | \$183,407 | \$21.15 | \$17.70 |
| Health Alliance Plan | 797 | 1,034 | 64 | 71 | \$9,494 | \$9,859 | \$11.91 | \$9.53 |
| Harbor Health Plan | 3 | | 1 | | \$110 | | \$36.56 | |
| McLaren Health Plan | 51,820 | 61,885 | 5,377 | 4,714 | \$828,117 | \$838,062 | \$15.98 | \$13.54 |
| Meridian Health Plan | 232,024 | 170,251 | 22,431 | 12,476 | \$2,884,183 | \$1,681,277 | \$12.43 | \$9.88 |
| Molina Healthcare | 50,486 | 38,374 | 5,826 | 3,082 | \$693,755 | \$507,577 | \$13.74 | \$13.23 |
| Priority Health | 4,238 | 2,359 | 783 | 312 | \$112,825 | \$47,102 | \$26.62 | \$19.97 |
| Total Health Care | 113 | 50 | 16 | 3 | \$14,245 | \$619 | \$126.06 | \$12.38 |
| United Healthcare | 12,591 | 10,309 | 1,614 | 994 | \$253,853 | \$152,842 | \$20.16 | \$14.83 |
| Upper Peninsula Health Plan | 384 | 430 | 51 | 70 | \$6,031 | \$11,511 | \$15.71 | \$26.77 |
| Fee-For-Service | | | 5,044 | 2,228 | \$648,438 | \$258,326 | | |
| TOTAL | 375,586 | 301,750 | 43,538 | 25,154 | \$5,835,334 | \$3,786,859 | \$15.54 | \$12.55 |
| Per Member Per Month % Change | | | | | | | | -19.23% |
| Projected Savings | | | | | | | | \$901,313.87 |

| TOTAL INPATIENT - ALL | | | | | | | | |
|--------------------------------------|--------------------|-------------------|--------------------|-------------------|---------------------|---------------------|-----------------|------------------------|
| Payer Name | Member Month Prior | Member Month Post | Claim Counts Prior | Claim Counts Post | Amount Paid Prior | Amount Paid Post | PMPM Prior | PMPM Post |
| Aetna | 14,251 | 6,694 | 199 | 69 | \$974,442 | \$552,091 | \$13.79 | \$14.38 |
| Blue Cross Complete | 8,879 | 10,364 | 237 | 160 | \$1,698,777 | \$1,260,358 | \$21.15 | \$17.70 |
| Health Alliance Plan | 797 | 1,034 | 23 | 8 | \$127,318 | \$27,159 | \$11.91 | \$9.53 |
| McLaren Health Plan | 51,820 | 61,885 | 1,056 | 820 | \$6,182,194 | \$4,509,964 | \$15.98 | \$72.88 |
| Meridian Health Plan | 232,024 | 170,251 | 3,072 | 1,672 | \$18,210,111 | \$11,023,856 | \$12.43 | \$64.75 |
| Molina Healthcare | 50,486 | 38,374 | 1,035 | 502 | \$6,205,632 | \$2,457,935 | \$13.74 | \$64.05 |
| Priority Health | 4,238 | 2,359 | 129 | 39 | \$1,025,598 | \$174,362 | \$26.62 | \$73.91 |
| Total Health Care | 113 | 50 | 4 | 3 | \$16,729 | \$5,656 | \$126.06 | \$113.11 |
| United Healthcare | 12,591 | 10,309 | 219 | 106 | \$1,111,621 | \$364,449 | \$20.16 | \$35.35 |
| Upper Peninsula Health Plan | 384 | 430 | 10 | 6 | \$59,488 | \$28,202 | \$15.71 | \$65.59 |
| Fee-For-Service | | | 1,255 | 590 | \$7,934,890 | \$2,016,367 | | |
| TOTAL | 375,583 | 301,750 | 7,239 | 3,975 | \$43,546,799 | \$22,420,399 | \$115.94 | \$74.30 |
| Per Member Per Month % Change | | | | | | | | -35.92% |
| Projected Savings | | | | | | | | \$12,565,866.76 |

Genesee CHIR

The Genesee CHIR clients showed the greatest decrease in emergency department visits, with a 35% decrease in visits after enrollment in the CHIR. The Genesee CHIR clients also decreased inpatient visits the most, with a 56% decrease post-enrollment in the CHIR.

These drastic decreases in services resulted in significant cost savings. Emergency department PMPM costs for Genesee CHIR clients decreased by 28% compared to PMPM costs prior to enrollment. Cost savings were demonstrated with nearly every health plan that covers Genesee CHIR clients. For example, Meridian Health Plan paid 32% less PMPM for emergency department visits after enrollment in the Genesee CHIR. It is possible that the Genesee CHIR's peer recovery coach program within emergency department settings is a contributing factor to

this decrease in costs. The chart below provides further information on the emergency department visit cost trends by health plan covering Genesee CHIR clients:

| GENESEE EMERGENCY DEPARTMENT | | | | | | | | |
|--------------------------------------|--------------------|-------------------|--------------------|-------------------|--------------------|------------------|----------------|---------------------|
| Payer Name | Member Month Prior | Member Month Post | Claim Counts Prior | Claim Counts Post | Amount Paid Prior | Amount Paid Post | PMPM Prior | PMPM Post |
| Aetna | 7 | | 4 | | \$297 | | \$42.49 | |
| Blue Cross Complete | 4,723 | 6,993 | 389 | 395 | \$65,880 | \$78,768 | \$13.95 | \$11.26 |
| Health Alliance Plan | 777 | 1,023 | 63 | 69 | \$9,494 | \$9,753 | \$12.22 | \$9.53 |
| Harbor Health Plan | 3 | | 1 | | \$110 | | \$36.56 | |
| McLaren Health Plan | 22,057 | 17,925 | 2,432 | 1,284 | \$400,182 | \$235,238 | \$18.14 | \$13.12 |
| Meridian Health Plan | 17,180 | 16,816 | 1,828 | 1,194 | \$264,981 | \$176,339 | \$15.42 | \$10.49 |
| Molina Healthcare | 38,989 | 27,615 | 3,951 | 1,727 | \$390,883 | \$222,369 | \$10.03 | \$8.05 |
| Priority Health | 100 | 20 | 23 | | \$2,453 | | \$24.53 | \$0.00 |
| Total Health Care | 58 | 25 | 6 | 2 | \$188 | \$299 | \$3.25 | \$11.97 |
| United Healthcare | 2,228 | 3,062 | 229 | 163 | \$39,639 | \$24,088 | \$17.79 | \$7.87 |
| Upper Peninsula Health Plan | 35 | 21 | 4 | 3 | \$409 | \$490 | \$11.68 | \$23.32 |
| Fee-For-Service | | | 834 | 333 | \$114,684 | \$40,609 | | |
| TOTAL | 86,157 | 73,500 | 9,764 | 5,170 | \$1,289,200 | \$787,952 | \$14.96 | \$10.72 |
| Per Member Per Month % Change | | | | | | | | -28% |
| Projected Savings | | | | | | | | \$311,855.97 |

Cost savings for inpatient services were also significant for the Genesee CHIR. Inpatient visit PMPM costs for Genesee CHIR clients decreased by 64% compared to PMPM costs prior to enrollment. Every health plan covering CHIR clients experienced decreases for the amount they paid for inpatient visits after their members began interacting with the CHIR. Furthermore, when you apply these PMPM savings to the 73,500 member-months after

enrollment, we see over \$10 million in savings. Besides Priority Health, every payer covering Genesee CHIR clients saw a significant decrease in PMPM costs, including Molina and Meridian, the two largest payers for Genesee CHIR clients. For example, Meridian Health Plan experienced a 74% decrease in PMPM costs after their members began interacting with the Genesee CHIR. The chart below provides further information on the inpatient visit cost trends by health plan covering Genesee CHIR clients:

| GENESEE INPATIENT | | | | | | | | |
|--------------------------------------|--------------------|-------------------|--------------------|-------------------|---------------------|--------------------|-----------------|------------------------|
| Payer Name | Member Month Prior | Member Month Post | Claim Counts Prior | Claim Counts Post | Amount Paid Prior | Amount Paid Post | PMPM Prior | PMPM Post |
| Aetna | 7 | | | | | | | |
| Blue Cross Complete | 4,723 | 6,993 | 145 | 81 | \$949,769 | \$757,074 | \$201.09 | \$108.26 |
| Health Alliance Plan | 777 | 1,023 | 23 | 8 | \$127,318 | \$27,159 | \$163.86 | \$26.55 |
| McLaren Health Plan | 22,057 | 17,925 | 603 | 281 | \$4,214,996 | \$2,084,550 | \$191.10 | \$116.29 |
| Meridian Health Plan | 17,180 | 16,816 | 398 | 149 | \$3,731,559 | \$946,810 | \$217.20 | \$56.30 |
| Molina Healthcare | 38,989 | 27,615 | 784 | 246 | \$4,837,111 | \$1,461,318 | \$124.06 | \$52.92 |
| Priority Health | 100 | 20 | 3 | 1 | \$13,703 | \$3,292 | \$137.03 | \$164.61 |
| Total Health Care | 58 | 25 | 1 | | \$1,067 | | \$18.40 | |
| United Healthcare | 2,228 | 3,062 | 57 | 21 | \$502,588 | \$75,677 | \$225.58 | \$24.71 |
| Upper Peninsula Health Plan | 35 | 21 | 4 | | \$42,166 | | \$1,204.74 | |
| Fee-For-Service | | | 343 | 77 | \$4,477,960 | \$377,818 | | |
| TOTAL | 86,154 | 73,500 | 2,361 | 864 | \$18,898,236 | \$5,733,697 | \$219.35 | \$78.01 |
| Per Member Per Month % Change | | | | | | | | -64% |
| Projected Savings | | | | | | | | \$10,388,831.79 |

Jackson CHIR

Clients who enrolled in the Jackson CHIR decreased emergency department visits by 23.6% compared to their utilization prior to enrollment in the CHIR. Jackson CHIR clients decreased their inpatient visits by 19.3% after enrollment in the CHIR.

The Jackson CHIR demonstrated cost savings because of decreased utilization in both emergency department and inpatient visits. The Jackson CHIR decreased the amount paid for emergency department services by 54% for clients enrolled in their CHIR, with all but one payer decreasing their total amount paid for emergency department services. When you normalize the data to account for the difference in member-months, PMPM spending on emergency department visits decreased for many health plans, and by 24% overall in the region. For example, Blue Cross Complete paid \$19.01 PMPM for emergency department services prior to enrollment, but that figure decreased to \$12.13 after enrollment in the Jackson CHIR, a 36% decrease. The chart below provides further information on the emergency department visit cost trends by health plan covering Jackson CHIR clients:

| JACKSON EMERGENCY DEPARTMENT | | | | | | | | |
|--------------------------------------|--------------------|-------------------|--------------------|-------------------|--------------------|--------------------|----------------|---------------------|
| Payer Name | Member Month Prior | Member Month Post | Claim Counts Prior | Claim Counts Post | Amount Paid Prior | Amount Paid Post | PMPM Prior | PMPM Post |
| Aetna | 14,165 | 6,644 | 1,307 | 419 | \$194,806 | \$95,563 | \$13.75 | \$14.38 |
| Blue Cross Complete | 2,687 | 2,537 | 348 | 160 | \$51,087 | \$30,767 | \$19.01 | \$12.13 |
| Health Alliance Plan | 2 | 2 | 1 | 1 | \$0 | \$36 | \$0.00 | \$18.17 |
| McLaren Health Plan | 3,576 | 2,266 | 420 | 227 | \$71,175 | \$52,903 | \$19.90 | \$23.35 |
| Meridian Health Plan | 182,142 | 113,848 | 16,478 | 7,699 | \$2,038,305 | \$970,210 | \$11.19 | \$8.52 |
| Molina Healthcare | 3,287 | 2,376 | 425 | 245 | \$60,472 | \$44,502 | \$18.40 | \$18.73 |
| Priority Health | 640 | 291 | 106 | 24 | \$13,683 | \$3,948 | \$21.38 | \$13.57 |
| Total Health Care | 3 | 0 | | | | | \$0.00 | |
| United Healthcare | 8,431 | 3,293 | 797 | 272 | \$127,553 | \$48,684 | \$15.13 | \$14.78 |
| Upper Peninsula Health Plan | 89 | 25 | 12 | 5 | \$1,675 | \$777 | \$18.82 | \$31.08 |
| Fee-For-Service | | | 2,108 | 493 | \$306,523 | \$83,203 | | |
| TOTAL | 215,022 | 131,282 | 22,002 | 9,545 | \$2,865,280 | \$1,330,593 | \$13.33 | \$10.14 |
| Per Member Per Month % Change | | | | | | | | -24% |
| Projected Savings | | | | | | | | \$418,808.05 |

The Jackson CHIR also decreased inpatient services costs. Payers decreased their PMPM spending on Jackson CHIR clients by 7% on average after their enrollment in the CHIR, with United Healthcare seeing a PMPM decrease by as much as 62%. The chart below provides further information on the inpatient visit cost trends by health plan covering Jackson CHIR clients:

| JACKSON INPATIENT | | | | | | | | |
|--------------------------------------|--------------------|-------------------|--------------------|-------------------|---------------------|--------------------|----------------|---------------------|
| Payer Name | Member Month Prior | Member Month Post | Claim Counts Prior | Claim Counts Post | Amount Paid Prior | Amount Paid Post | PMPM Prior | PMPM Post |
| Aetna | 14,165 | 6,644 | 193 | 69 | \$965,987 | \$552,091 | \$68.20 | \$83.10 |
| Blue Cross Complete | 2,687 | 2,537 | 40 | 26 | \$159,547 | \$111,871 | \$59.38 | \$44.10 |
| Health Alliance Plan | 2 | 2 | | | | | \$0.00 | \$0.00 |
| McLaren Health Plan | 3,576 | 2,266 | 66 | 40 | \$453,823 | \$185,576 | \$126.91 | \$81.90 |
| Meridian Health Plan | 182,142 | 113,848 | 2,198 | 1,134 | \$12,322,088 | \$7,922,499 | \$67.65 | \$69.59 |
| Molina Healthcare | 3,287 | 2,376 | 62 | 75 | \$210,353 | \$215,396 | \$64.00 | \$90.65 |
| Priority Health | 640 | 291 | 14 | 1 | \$51,101 | \$5,075 | \$79.85 | \$17.44 |
| Total Health Care | 3 | 0 | | | | | \$0.00 | |
| United Healthcare | 8,431 | 3,293 | 112 | 32 | \$431,557 | \$64,662 | \$51.19 | \$19.64 |
| Upper Peninsula Health Plan | 89 | 25 | | | | | \$0.00 | \$0.00 |
| Fee-For-Service | | | 451 | 121 | \$2,125,046 | \$482,397 | | |
| TOTAL | 215,022 | 131,282 | 3,136 | 1,498 | \$16,719,501 | \$9,539,567 | \$77.76 | \$72.66 |
| Per Member Per Month % Change | | | | | | | | -7% |
| Projected Savings | | | | | | | | \$668,549.09 |

Livingston-Washtenaw CHIR

The only CHIR that did not demonstrate utilization and cost savings because of client enrollment was the Livingston-Washtenaw CHIR. Emergency department visits for Livingston-Washtenaw CHIR clients increased by 14.4% and inpatient visits increased by 31.1%.

A couple of factors likely impacted the Livingston-Washtenaw CHIR's emergency department and inpatient visit outcomes. First, the Livingston-Washtenaw CHIR was the only CHIR to create a predictive model to obtain CHIR enrollees. The predictive model used data from local health systems to develop, evaluate, and implement a model for the prediction of high emergency department utilization in Livingston and Washtenaw counties. Data for individuals with any encounter at the region's two major health systems since October 2015 were obtained. The model used a random forest method to predict the expected emergency department visits for all individuals within the coming 6 months. The individuals with the greatest number of predicted visits were selected either for the intervention group or the delayed intervention group (to receive usual care before being approached to join the intervention in 12 months). The data for the predictive model was refreshed every two months, and new predictions were made. Second, when comparing the region's sample size for this analysis (and subsequent number of member-months), it is significantly lower than the other four regions. While this analysis did not look at individual level data, it is possible that a single outlier (or more) within this sample size could impact the outcomes for the aggregate analysis.

It was during the SIM test period that Livingston-Washtenaw learned that while innovative, the predictive model came with its own unique set of challenges. Since individuals being targeted for the intervention were not actively presenting themselves at a provider's office or a community-based organization, the CHIR needed to perform "cold calls" to begin engagement and conduct a screening. The region encountered many barriers when trying their initial contact. If the region was successful at connecting with an individual, it was still challenging to build trust and obtain buy-in. Individual clients are now being referred to the CHIR through clinical or community-based referrals. Even after the Livingston-Washtenaw CHIR stopped using a predictive model to enroll CHIR clients, they still focused their efforts on engaging with clients with the highest medical and social needs.

Health plans exhibited mixed results in cost outcomes for clients after enrolling in the Livingston-Washtenaw CHIR. For example, Aetna Better Health of Michigan decreased their PMPM emergency department costs by 62% after enrollment in the Livingston-Washtenaw CHIR. Similarly, Meridian Health Plan of Michigan paid 53% less for clients after enrollment in the Livingston-Washtenaw CHIR, which resulted in a 32% decrease in PMPM costs for those clients. However, Blue Cross Completes amount paid for services for CHIR clients increased by 11% after those clients' enrollment in the Livingston-Washtenaw CHIR, and the PMPM costs increased by 95% post-enrollment. The chart below provides further information on the emergency department visit cost trends by health plan covering Livingston-Washtenaw CHIR clients:

| LIVINGSTON-WASHTENAW EMERGENCY DEPARTMENT | | | | | | | | |
|---|--------------------|-------------------|--------------------|-------------------|-------------------|------------------|-----------------|---------------------|
| Payer Name | Member Month Prior | Member Month Post | Claim Counts Prior | Claim Counts Post | Amount Paid Prior | Amount Paid Post | PMPM Prior | PMPM Post |
| Aetna | 33 | 42 | 6 | 4 | \$1,070 | \$521 | \$32.42 | \$12.41 |
| Blue Cross Complete | 911 | 520 | 192 | 176 | \$57,849 | \$64,449 | \$63.50 | \$123.94 |
| Health Alliance Plan | 0 | 0 | | | | | | |
| McLaren Health Plan | 30 | 107 | 29 | 55 | \$5,278 | \$15,794 | \$175.93 | \$147.61 |
| Meridian Health Plan | 650 | 449 | 312 | 191 | \$65,153 | \$30,465 | \$100.24 | \$67.85 |
| Molina Healthcare | 362 | 199 | 243 | 241 | \$83,046 | \$104,133 | \$229.41 | \$523.28 |
| Priority Health | 9 | 0 | 4 | | \$419 | | \$46.60 | |
| Total Health Care | 22 | 0 | 8 | | \$13,842 | | \$629.16 | |
| United Healthcare | 181 | 110 | 255 | 165 | \$19,074 | \$18,445 | \$105.38 | \$167.68 |
| Upper Peninsula Health Plan | 0 | 0 | | | | | | |
| Fee-For-Service | | | 277 | 232 | \$25,998 | \$5,291 | | |
| TOTAL | 2,198 | 1,427 | 1,326 | 1,064 | \$271,729 | \$239,098 | \$123.63 | \$167.55 |
| Per Member Per Month % Change | | | | | | | | 36% |
| Projected Savings | | | | | | | | -\$62,684.45 |

Payers covering Livingston-Washtenaw CHIR clients experienced a 17% increase in PMPM costs for inpatient visit after CHIR enrollment. While payers decreased the amount paid for inpatient visits by an average of 24% for Livingston-Washtenaw CHIR clients after enrollment, that data point does not account for the fact that there were far fewer member-months of data post-enrollment. The chart below provides further information on the inpatient visit cost trends by health plan covering Livingston-Washtenaw CHIR clients:

| LIVINGSTON-WASHTENAW INPATIENT | | | | | | | | |
|--------------------------------------|--------------------|-------------------|--------------------|-------------------|--------------------|--------------------|-----------------|-----------------|
| Payer Name | Member Month Prior | Member Month Post | Claim Counts Prior | Claim Counts Post | Amount Paid Prior | Amount Paid Post | PMPM Prior | PMPM Post |
| Aetna | 33 | 42 | | | | | \$0.00 | \$0.00 |
| Blue Cross Complete | 911 | 520 | 45 | 45 | \$545,947 | \$353,329 | \$599.28 | \$679.48 |
| Health Alliance Plan | 0 | 0 | 0 | | \$0 | | | |
| McLaren Health Plan | 30 | 107 | | 2 | | \$11,196 | \$0.00 | \$104.63 |
| Meridian Health Plan | 650 | 449 | 27 | 24 | \$119,927 | \$144,109 | \$184.50 | \$320.95 |
| Molina Healthcare | 362 | 199 | 46 | 39 | \$375,760 | \$147,164 | \$1,038.01 | \$739.52 |
| Priority Health | 9 | 0 | 0 | | \$0 | | \$0.00 | |
| Total Health Care | 22 | 0 | 3 | | \$15,662 | | \$711.92 | |
| United Healthcare | 181 | 110 | 13 | 9 | \$23,629 | \$39,784 | \$130.55 | \$361.67 |
| Upper Peninsula Health Plan | 0 | 0 | | | | | | |
| Fee-For-Service | | | 104 | 103 | \$305,666 | \$362,140 | | |
| TOTAL | 2,198 | 1,427 | 238 | 222 | \$1,386,593 | \$1,057,721 | \$630.84 | \$741.22 |
| Per Member Per Month % Change | | | | | | | | 17% |
| Projected Savings | | | | | | | | -\$157,508.16 |

Muskegon CHIR

Clients who enrolled in the Muskegon CHIR decreased their emergency department visits by 10.7% and their inpatient visits by 6.3% after enrolling in the CHIR.

The Muskegon CHIR demonstrated cost savings of 50% for emergency department services after enrollment in their CHIR. Overall PMPM costs also decreased by 7% for payers after clients enrolled in the Muskegon CHIR. Each health plan decreased their amount paid for overall emergency department services. For example, Priority Health decreased their emergency department services paid by 56% after clients enrolled in the CHIR, which resulted in a decrease of 20% of PMPM costs. Additionally, while McLaren member-months decreased by 49%, PMPM post enrollment outpaced this amount by decreasing 81% (\$35.08 decrease). The chart below provides further information on the emergency department visit cost trends by health plan covering Muskegon CHIR clients:

| MUSKEGON EMERGENCY DEPARTMENT | | | | | | | | |
|--------------------------------------|--------------------|-------------------|--------------------|-------------------|-------------------|------------------|----------------|--------------------|
| Payer Name | Member Month Prior | Member Month Post | Claim Counts Prior | Claim Counts Post | Amount Paid Prior | Amount Paid Post | PMPM Prior | PMPM Post |
| Aetna | 10 | 0 | | | | | \$0.00 | |
| Blue Cross Complete | 314 | 229 | 60 | 40 | \$9,324 | \$6,788 | \$29.69 | \$29.64 |
| Health Alliance Plan | 18 | 0 | | | | | | |
| McLaren Health Plan | 226 | 116 | 84 | 15 | \$9,815 | \$969 | \$43.43 | \$8.35 |
| Meridian Health Plan | 3,441 | 1,827 | 593 | 359 | \$89,707 | \$56,921 | \$26.07 | \$31.16 |
| Molina Healthcare | 1,196 | 517 | 321 | 163 | \$60,736 | \$38,676 | \$50.78 | \$74.81 |
| Priority Health | 3,238 | 1,805 | 605 | 263 | \$90,674 | \$39,324 | \$28.00 | \$21.79 |
| Total Health Care | 0 | 0 | | | | | | |
| United Healthcare | 427 | 233 | 188 | 91 | \$43,389 | \$18,996 | \$101.61 | \$81.53 |
| Upper Peninsula Health Plan | 9 | 0 | 2 | | \$177 | | \$19.61 | |
| Fee-For-Service | | | 427 | 76 | \$38,729 | \$7,998 | | |
| TOTAL | 8,879 | 4,727 | 2,280 | 1,007 | \$342,550 | \$169,672 | \$38.58 | \$35.89 |
| Per Member Per Month % Change | | | | | | | | -7% |
| Projected Savings | | | | | | | | \$12,695.08 |

All but one of the payers that cover Muskegon CHIR clients experienced a decrease in the amount paid for inpatient visits post-enrollment in the CHIR, for an average 68% decrease in costs. Furthermore, PMPM inpatient visit costs decreased by an average of 41% overall for Muskegon CHIR clients after enrollment. Priority Health saw their PMPM amount decrease 55% (\$157.14 decrease), which outpaced the decrease in member-months (44.26%). Only one health plan did not experience PMPM cost decreases. The chart below provides further information on the inpatient visit cost trends by health plan covering Muskegon CHIR clients:

| MUSKEGON INPATIENT | | | | | | | | |
|--------------------------------------|--------------------|-------------------|--------------------|-------------------|--------------------|------------------|-----------------|---------------------|
| Payer Name | Member Month Prior | Member Month Post | Claim Counts Prior | Claim Counts Post | Amount Paid Prior | Amount Paid Post | PMPM Prior | PMPM Post |
| Aetna | 10 | 0 | | | | | \$0.00 | |
| Blue Cross Complete | 314 | 229 | 6 | 3 | \$43,512 | \$15,948 | \$138.57 | \$69.64 |
| Health Alliance Plan | 18 | 0 | 0 | | \$0 | | \$0.00 | |
| McLaren Health Plan | 226 | 116 | 8 | 3 | \$13,233 | \$6,331 | \$58.55 | \$54.57 |
| Meridian Health Plan | 3,441 | 1,827 | 8 | 31 | \$102,326 | \$142,824 | \$29.74 | \$78.17 |
| Molina Healthcare | 1,196 | 517 | 41 | 25 | \$291,841 | \$83,596 | \$244.01 | \$161.69 |
| Priority Health | 3,238 | 1,805 | 100 | 34 | \$919,349 | \$156,812 | \$283.93 | \$86.88 |
| Total Health Care | 0 | 0 | | | | | | |
| United Healthcare | 427 | 233 | 3 | 2 | \$15,645 | \$8,309 | \$36.64 | \$35.66 |
| Upper Peninsula Health Plan | 9 | 0 | | | | | \$0.00 | |
| Fee-For-Service | | | 68 | 30 | \$171,798 | \$77,269 | | |
| TOTAL | 8,879 | 4,727 | 234 | 128 | \$1,557,705 | \$491,089 | \$175.44 | \$103.89 |
| Per Member Per Month % Change | | | | | | | | -41% |
| Projected Savings | | | | | | | | \$338,201.84 |

Northern Michigan CHIR

The Northern Michigan CHIR clients exhibited decreases in both emergency department and inpatient visits after enrolling in the CHIR. Emergency department visits decreased by 23.5% and inpatient visits decreased by 26.6%. Northern Michigan was unique in that they were the only region that had a larger member-month post figure than their member-month prior. **This supports our hypothesis when creating the CHIR pilots, that forming strong local collaboratives and addressing both the medical and social needs of the individual works. It also supports the belief that when analyzing CHIR clients long-term, we will continue to experience improvements to the health and well-being of residents, lower unnecessary medical costs, and reductions in health disparities.**

Payers covering Northern Michigan CHIR clients experienced an 18% decrease in PMPM costs for emergency department services after enrollment in the CHIR. The payers covering the highest proportion of Northern Michigan CHIR clients: McLaren Health Plan, Meridian Health Plan of Michigan, and Molina Healthcare of Michigan, all saw decreases in PMPM costs for emergency department care. The chart below provides further information on the emergency department visit cost trends by health plan covering Northern Michigan CHIR clients:

| NORTHERN MICHIGAN EMERGENCY DEPARTMENT | | | | | | | | |
|--|--------------------|-------------------|--------------------|-------------------|-------------------|------------------|------------|-----------|
| Payer Name | Member Month Prior | Member Month Post | Claim Counts Prior | Claim Counts Post | Amount Paid Prior | Amount Paid Post | PMPM Prior | PMPM Post |
| Aetna | 36 | 8 | 4 | 1 | \$347 | \$192 | \$9.64 | \$23.98 |
| Blue Cross Complete | 244 | 85 | 21 | 9 | \$3,623 | \$2,635 | \$14.85 | \$31.00 |
| Health Alliance Plan | | 9 | | 1 | | \$69 | | \$7.65 |
| McLaren Health Plan | 25,931 | 41,471 | 2,412 | 3,133 | \$341,667 | \$533,159 | \$13.18 | \$12.86 |
| Meridian Health Plan | 28,611 | 37,311 | 3,220 | 3,033 | \$426,037 | \$447,343 | \$14.89 | \$11.99 |
| Molina Healthcare | 6,652 | 7,667 | 886 | 706 | \$98,617 | \$97,897 | \$14.83 | \$12.77 |
| Priority Health | 251 | 243 | 45 | 25 | \$5,596 | \$3,830 | \$22.29 | \$15.76 |
| Total Health Care | 30 | 25 | 2 | 1 | \$215 | \$320 | \$7.18 | \$12.78 |
| United Healthcare | 1,324 | 3,611 | 145 | 303 | \$24,199 | \$42,629 | \$18.28 | \$11.81 |
| Upper Peninsula Health Plan | 251 | 384 | 33 | 62 | \$3,771 | \$10,244 | \$15.02 | \$26.68 |

| | | | | | | | | |
|--------------------------------------|---------------|---------------|--------------|--------------|--------------------|--------------------|----------------|---------------------|
| Fee-For-Service | | | 1,398 | 1,094 | \$162,503 | \$121,226 | | |
| TOTAL | 63,330 | 90,814 | 8,166 | 8,368 | \$1,066,575 | \$1,259,544 | \$16.84 | \$13.87 |
| Per Member Per Month % Change | | | | | | | | -18% |
| Projected Savings | | | | | | | | \$269,904.26 |

Payers covering Northern Michigan CHIR clients experienced a 22% decrease in PMPM costs for inpatient services after enrollment in the CHIR. All but one payer experienced savings for PMPM costs for inpatient services. When analyzing United Healthcare below, we see their member-month post enrollment total increase by 2,287. This large increase in member-months after enrollment illustrates that the relationship-based care provided by the CHIR’s community health worker or navigator helped their client navigate the available community resources to keep them well and avoid further hospitalizations. United Healthcare saw a \$55.64 PMPM decrease in their post-enrollment population, a 53.3% reduction. If we apply that savings to their 3,611 member-months after enrollment, this equates to \$200,906 in savings. Apart from the results of the Upper Peninsula Health Plan population, we see PMPM reductions for all the other health plans with larger member-month post enrollment figures than their member-month prior. While this analysis did not look at individual level diagnosis information, one success story of a diabetic patient with uncontrolled hypoglycemia (low blood sugar) comes to mind when analyzing these inpatient cost reductions. By addressing the food insecurity needs of the individual and providing access to healthy foods, hemoglobin levels can then normalize which may have led to decreased hospitalizations or further complications. The chart below provides further information on the inpatient visit cost trends by health plan covering Northern Michigan CHIR clients:

| NORTHERN MICHIGAN INPATIENT | | | | | | | | |
|------------------------------------|---------------------------|--------------------------|---------------------------|--------------------------|--------------------------|-------------------------|-------------------|------------------|
| Payer Name | Member Month Prior | Member Month Post | Claim Counts Prior | Claim Counts Post | Amount Paid Prior | Amount Paid Post | PMPM Prior | PMPM Post |
| Aetna | 36 | 8 | 6 | | \$8,455 | | \$234.86 | \$0.00 |
| Blue Cross Complete | 244 | 85 | 1 | 5 | \$0 | \$22,136 | \$0.00 | \$260.43 |
| Health Alliance Plan | 0 | 9 | | | | | | \$0.00 |
| McLaren Health Plan | 25,931 | 41,471 | 379 | 494 | \$1,500,142 | \$2,222,313 | \$57.85 | \$53.59 |
| Meridian Health Plan | 28,611 | 37,311 | 441 | 334 | \$1,934,211 | \$1,867,613 | \$67.60 | \$50.06 |
| Molina Healthcare | 6,652 | 7,667 | 102 | 117 | \$490,567 | \$550,462 | \$73.75 | \$71.80 |
| Priority Health | 251 | 243 | 12 | 3 | \$41,445 | \$9,183 | \$165.12 | \$37.79 |

| | | | | | | | | |
|--------------------------------------|---------------|---------------|--------------|--------------|--------------------|--------------------|----------------|-----------------------|
| Total Health Care | 30 | 25 | | 3 | | \$5,656 | | \$226.22 |
| United Healthcare | 1,324 | 3,611 | 34 | 42 | \$138,201 | \$176,017 | \$104.38 | \$48.74 |
| Upper Peninsula Health Plan | 251 | 384 | 6 | 6 | \$17,323 | \$28,202 | \$69.01 | \$73.44 |
| Fee-For-Service | | | 289 | 259 | \$854,421 | \$716,744 | | |
| TOTAL | 63,330 | 90,814 | 1,270 | 1,263 | \$4,984,764 | \$5,598,325 | \$78.71 | \$61.65 |
| Per Member Per Month % Change | | | | | | | | -22% |
| Projected Savings | | | | | | | | \$1,549,731.07 |

Claims Data Reports in Aggregate by local CHIR and specific to each Medicaid Health Plan

MDHHS reviewed the encounter claims data for total costs of care for CHIR clients, which includes primary care, inpatient, ambulatory care, emergency department, mental health, vision, and dental visits, as well as pharmacy, non-emergency medical transportation, SUD treatment and long-term care. Services delivered under the Program of All-Inclusive Care for the Elderly (PACE) were not included in this aggregate data set.

To calculate changes in aggregate claims for each CHIR and Medicaid health plan, MDHHS calculated both the percent change in the total amount paid by health plans on behalf of Medicaid and the percent change for per member per month costs. Again, MDHHS recommends that readers focus on the percent changes to PMPM, which represents the total amount of claims paid divided by the total number of member-months.

Between all five CHIRs, the PMPM costs for payers decreased by 10% for all care delivered after clients enrolled in a regional CHIR. If we apply that savings to 301,751 member-months after enrollment, we see a savings of \$13,384,386.58. Please note, that since these charts include costs that are covered outside of the Medicaid Health Plan’s financial responsibility, the “Other Payer IDs” payer name has been added. One example of a cost center that would be included in this would be dental visits.

| TOTAL COSTS OF CARE - ALL | | | | | | | | |
|---------------------------|----------|---------|--------------------|-------------------|-------------------|------------------|------------|-----------|
| Payer Name | MM Prior | MM Post | Claim Counts Prior | Claim Counts Post | Amount Paid Prior | Amount Paid Post | PMPM Prior | PMPM Post |
| Aetna | 14,251 | 6,694 | 49,458 | 22,899 | \$4,449,104 | \$2,647,629 | \$312.20 | \$395.52 |
| Blue Cross Complete | 8,879 | 10,364 | 27,271 | 28,519 | \$3,788,588 | \$3,881,851 | \$426.69 | \$374.55 |
| Health Alliance Plan | 797 | 1,034 | 996 | 1,103 | \$233,696 | \$85,931 | \$293.22 | \$83.10 |
| Harbor Health Plan | 3 | 1 | 7 | 6 | \$321 | \$44 | \$106.86 | \$44.29 |

| | | | | | | | | |
|--------------------------------------|----------------|----------------|------------------|------------------|----------------------|----------------------|-----------------|------------------------|
| McLaren Health Plan | 51,820 | 61,885 | 170,716 | 202,815 | \$20,061,338 | \$20,870,923 | \$387.14 | \$337.25 |
| Meridian Health Plan | 232,024 | 170,251 | 824,476 | 572,755 | \$72,561,609 | \$49,578,428 | \$312.73 | \$291.21 |
| Molina Healthcare | 50,486 | 38,374 | 125,746 | 83,939 | \$14,736,685 | \$8,286,388 | \$291.90 | \$215.94 |
| Priority Health | 4,238 | 2,359 | 22,040 | 11,138 | \$2,766,858 | \$1,033,016 | \$652.87 | \$437.90 |
| Total Health Care | 113 | 50 | 354 | 70 | \$58,652 | \$22,668 | \$519.05 | \$453.36 |
| United Healthcare | 12,591 | 10,309 | 36,035 | 22,123 | \$3,673,425 | \$1,932,240 | \$291.75 | \$187.43 |
| Upper Peninsula Health Plan | 384 | 430 | 1,242 | 1,616 | \$143,579 | \$135,263 | \$373.90 | \$314.56 |
| Other Payer IDs | | | 41,863 | 40,313 | \$3,345,624 | \$2,369,290 | | |
| Fee-For-Service | | | 365,100 | 257,517 | \$40,640,946 | \$29,508,556 | | |
| TOTAL | 375,586 | 301,751 | 1,665,304 | 1,244,813 | \$166,460,424 | \$120,352,226 | \$443.20 | \$398.85 |
| Per Member Per Month % Change | | | | | | | | -10.01% |
| Projected Savings | | | | | | | | \$13,384,386.58 |

Genesee CHIR

The average monthly total cost of care for Genesee CHIR clients in Medicaid in the years before they were screened or received CHIR services and average monthly total cost of care after that point decreased by 47.59%. Each individual health plan except one, Blue Cross Complete, decreased their total cost of care after clients enrolled in the Genesee CHIR. Furthermore, the average PMPM costs decreased by 38.57% in that same timeframe. Each health plan, including Blue Cross Complete, decreased their PMPM costs for CHIR clients after enrollment. This data demonstrates that the Genesee CHIR worked with each Medicaid health plan to decrease overall costs.

| GENESEE TOTAL COSTS | | | | | | | | |
|----------------------|----------|---------|--------------------|-------------------|-------------------|------------------|------------|-----------|
| Payer Name | MM Prior | MM Post | Claim Counts Prior | Claim Counts Post | Amount Paid Prior | Amount Paid Post | PMPM Prior | PMPM Post |
| Aetna | 7 | | 59 | | \$2,371 | | \$338.64 | |
| Blue Cross Complete | 4,723 | 6,993 | 9,073 | 12,889 | \$1,613,929 | \$1,815,746 | \$341.72 | \$259.65 |
| Health Alliance Plan | 777 | 1,023 | 993 | 1,094 | \$233,464 | \$85,674 | \$300.47 | \$83.75 |

| | | | | | | | | |
|--------------------------------------|---------------|---------------|----------------|----------------|---------------------|---------------------|-----------------|------------------------|
| Harbor Health Plan | 3 | | 7 | | \$321 | | \$106.86 | |
| McLaren Health Plan | 22,057 | 17,925 | 65,878 | 47,467 | \$9,688,994 | \$5,887,052 | \$439.27 | \$328.43 |
| Meridian Health Plan | 17,180 | 16,816 | 34,402 | 28,250 | \$6,146,434 | \$2,934,996 | \$357.77 | \$174.54 |
| Molina Healthcare | 38,989 | 27,615 | 78,518 | 45,441 | \$10,171,777 | \$4,341,150 | \$260.89 | \$157.20 |
| Priority Health | 100 | 20 | 287 | 26 | \$41,486 | \$5,367 | \$414.86 | \$268.37 |
| Total Health Care | 58 | 25 | 48 | 8 | \$2,365 | \$680 | \$40.77 | \$27.22 |
| United Healthcare | 2,228 | 3,062 | 3,255 | 2,215 | \$747,118 | \$230,627 | \$335.33 | \$75.32 |
| Upper Peninsula Health Plan | 35 | 21 | 57 | 20 | \$49,423 | \$2,680 | \$1,412.09 | \$127.63 |
| Other Payer IDs | | | 8,556 | 5,515 | \$1,093,285 | \$723,639 | | |
| Fee-For-Service | | | 60,195 | 38,207 | \$8,496,239 | \$4,037,195 | | |
| TOTAL | 86,157 | 73,500 | 261,328 | 181,132 | \$38,287,205 | \$20,064,806 | \$444.39 | \$272.99 |
| Per Member Per Month % Change | | | | | | | | -38.57% |
| Projected Savings | | | | | | | | \$12,597,769.40 |

Jackson CHIR

The average monthly total cost of care for Jackson CHIR clients in Medicaid in the years before they were screened or received CHIR services and average monthly total cost of care after that point decreased by 39.67%. All but one health plan decreased their total cost of care after clients enrolled in the Jackson CHIR. Furthermore, the average PMPM costs decreased by 1.19% in that same timeframe.

| JACKSON TOTAL COSTS | | | | | | | | |
|---------------------|--------------------|-------------------|--------------------|-------------------|-------------------|------------------|------------|-----------|
| Payer Name | Member Month Prior | Member Month Post | Claim Counts Prior | Claim Counts Post | Amount Paid Prior | Amount Paid Post | PMPM Prior | PMPM Post |
| Aetna | 14,165 | 6,644 | 49,122 | 22,740 | \$4,416,490 | \$2,632,320 | \$311.79 | \$396.20 |
| Blue Cross Complete | 2,687 | 2,537 | 7,590 | 7,743 | \$674,279 | \$878,529 | \$250.94 | \$346.29 |

| | | | | | | | | |
|--------------------------------------|----------------|----------------|----------------|----------------|---------------------|---------------------|-----------------|---------------------|
| Health Alliance Plan | 2 | 2 | 3 | 6 | \$231 | \$120 | \$115.66 | \$60.00 |
| Harbor Health Plan | | 1 | | 6 | | \$44 | | \$44.29 |
| McLaren Health Plan | 3,576 | 2,266 | 10,549 | 5,879 | \$1,238,460 | \$571,825 | \$346.33 | \$252.35 |
| Meridian Health Plan | 182,142 | 113,848 | 657,026 | 411,402 | \$54,540,142 | \$34,827,540 | \$299.44 | \$305.91 |
| Molina Healthcare | 3,287 | 2,376 | 9,609 | 7,583 | \$861,706 | \$738,256 | \$262.16 | \$310.71 |
| Priority Health | 640 | 291 | 2,472 | 1,179 | \$220,065 | \$66,599 | \$343.85 | \$228.86 |
| Total Health Care | 3 | | | | | | \$0.00 | |
| United Healthcare | 8,431 | 3,293 | 22,789 | 7,377 | \$2,040,038 | \$571,933 | \$241.97 | \$173.68 |
| Upper Peninsula Health Plan | 89 | 25 | 520 | 106 | \$32,230 | \$9,452 | \$362.14 | \$378.06 |
| Other Payer IDs | 0 | | 13,860 | 8,791 | \$1,507,396 | \$799,280 | | |
| Fee-For-Service | | | 178,931 | 94,134 | \$20,079,230 | \$10,550,688 | | |
| TOTAL | 215,022 | 131,283 | 952,471 | 566,946 | \$85,610,269 | \$51,646,586 | \$398.15 | \$393.40 |
| Per Member Per Month % Change | | | | | | | | -1.19% |
| Projected Savings | | | | | | | | \$623,287.81 |

Livingston-Washtenaw CHIR

The average monthly total cost of care for Livingston-Washtenaw CHIR clients in Medicaid in the years before they were screened or received CHIR services and average monthly total cost of care after that point decreased by 11.31%. Each individual health plan except two experienced a decrease in their total cost of care after clients enrolled in Livingston-Washtenaw CHIR. However, the average PMPM costs increased by 36.61% in that same timeframe due to the decrease in member-months after enrollment in the CHIR. Health plans experienced mixed results in their PMPM costs for CHIR clients following enrollment.

| LIVINGSTON-WASHTENAW TOTAL COSTS | | | | | | | | |
|----------------------------------|--------------------|-------------------|--------------------|-------------------|-------------------|------------------|------------|-----------|
| Payer Name | Member Month Prior | Member Month Post | Claim Counts Prior | Claim Counts Post | Amount Paid Prior | Amount Paid Post | PMPM Prior | PMPM Post |
| Aetna | 33 | 42 | 158 | 114 | \$12,150 | \$13,115 | \$368.17 | \$312.27 |

| | | | | | | | | |
|--------------------------------------|--------------|--------------|---------------|---------------|--------------------|--------------------|-------------------|----------------------|
| Blue Cross Complete | 911 | 520 | 8,139 | 6,658 | \$1,151,578 | \$1,034,243 | \$1,264.08 | \$1,988.93 |
| Health Alliance Plan | | | | | | | | |
| Harbor Health Plan | | | | | | | | |
| McLaren Health Plan | 30 | 107 | 398 | 1,681 | \$31,590 | \$130,072 | \$1,053.01 | \$1,215.62 |
| Meridian Health Plan | 650 | 449 | 4,608 | 3,326 | \$517,825 | \$351,490 | \$796.65 | \$782.83 |
| Molina Healthcare | 362 | 199 | 4,077 | 4,881 | \$747,436 | \$600,503 | \$2,064.74 | \$3,017.61 |
| Priority Health | 9 | | 23 | | \$1,675 | | \$186.07 | |
| Total Health Care | 22 | | 257 | | \$53,721 | | \$2,441.85 | |
| United Healthcare | 181 | 110 | 3,109 | 2,451 | \$173,186 | \$142,485 | \$956.83 | \$1,295.32 |
| Upper Peninsula Health Plan | | | | | | | | |
| Other Payer IDs | | | 1,561 | 1,550 | \$101,323 | \$87,862 | | |
| Fee-For-Service | | | 9,379 | 6,105 | \$886,178 | \$900,976 | | |
| TOTAL | 2,198 | 1,427 | 31,709 | 26,766 | \$3,676,661 | \$3,260,747 | \$1,672.73 | \$2,285.04 |
| Per Member Per Month % Change | | | | | | | | 36.61% |
| Projected Savings | | | | | | | | -\$873,761.32 |

Muskegon CHIR

The average monthly total cost of care for Muskegon CHIR clients in Medicaid in the years before they were screened or received CHIR services and average monthly total cost of care after that point decreased by 52.69%. Each individual health plan decreased their total cost of care after clients enrolled in the Muskegon CHIR. Furthermore, the average PMPM costs decreased by 11.13% in that same timeframe. Each health plan except Meridian Health Plan of Michigan and United Health Care Community Plan decreased their PMPM costs for CHIR clients after enrollment.

| MUSKEGON TOTAL COSTS | | | | | | | | |
|--------------------------------------|--------------------|-------------------|--------------------|-------------------|--------------------|--------------------|-----------------|---------------------|
| Payer Name | Member Month Prior | Member Month Post | Claim Counts Prior | Claim Counts Post | Amount Paid Prior | Amount Paid Post | PMPM Prior | PMPM Post |
| Aetna | 10 | | 0 | | \$0 | | \$0.00 | |
| Blue Cross Complete | 314 | 229 | 1,773 | 889 | \$314,791 | \$107,083 | \$1,002.52 | \$467.61 |
| Health Alliance Plan | 18 | | 0 | | \$0 | | \$0.00 | |
| Harbor Health Plan | | | | | | | | |
| McLaren Health Plan | 226 | 116 | 869 | 348 | \$57,947 | \$21,037 | \$256.40 | \$181.35 |
| Meridian Health Plan | 3,441 | 1,827 | 17,567 | 10,422 | \$1,429,418 | \$819,472 | \$415.41 | \$448.53 |
| Molina Healthcare | 1,196 | 517 | 9,308 | 3,415 | \$872,682 | \$337,113 | \$729.67 | \$652.06 |
| Priority Health | 3,238 | 1,805 | 18,096 | 8,996 | \$2,394,042 | \$887,182 | \$739.36 | \$491.51 |
| Total Health Care | | | | | | | | |
| United Healthcare | 427 | 233 | 3,128 | 1,648 | \$265,781 | \$200,534 | \$622.44 | \$860.66 |
| Upper Peninsula Health Plan | 9 | | 8 | | \$550 | | \$61.09 | |
| Other Payer IDs | | | 1,356 | 1,253 | \$80,052 | \$45,491 | | |
| Fee-For-Service | | | 20,409 | 8,729 | \$2,323,851 | \$1,243,608 | | |
| TOTAL | 8,879 | 4,727 | 72,514 | 35,700 | \$7,739,114 | \$3,661,520 | \$871.62 | \$774.60 |
| Per Member Per Month % Change | | | | | | | | -11.13% |
| Projected Savings | | | | | | | | \$458,627.33 |

Northern Michigan CHIR

The PMPM costs for Northern Michigan CHIR clients decreased by 6.6% after clients enrolled in the Northern Michigan CHIR. Many clients enrolled in the Northern Michigan CHIR are covered by McLaren Health Plan and Meridian Health Plan of Michigan. Both of those payers demonstrated a decrease in PMPM costs after clients enrolled in the Northern Michigan CHIR, 1.41% and 17.78% respectively. Two health plans experienced significant increases in PMPM costs after clients enrolled in the Northern Michigan CHIR, Blue Cross Complete and Total Health Care. While those health plans did not cover nearly as many CHIR clients, their 290.35% and 927.72% increases in PMPM costs impacted the overall PMPM percent change for the region significantly.

| NORTHERN MICHIGAN TOTAL COSTS | | | | | | | | |
|-------------------------------|--------------------|-------------------|--------------------|-------------------|-------------------|------------------|------------|-----------|
| Payer Name | Member Month Prior | Member Month Post | Claim Counts Prior | Claim Counts Post | Amount Paid Prior | Amount Paid Post | PMPM Prior | PMPM Post |
| Aetna | 36 | 8 | 119 | 45 | \$18,093 | \$2,194 | \$502.59 | \$274.27 |
| Blue Cross Complete | 244 | 85 | 696 | 340 | \$34,011 | \$46,249 | \$139.39 | \$544.11 |
| Health Alliance Plan | 0 | 9 | | 3 | | \$137 | | \$15.20 |
| Harbor Health Plan | | | | | | | | |
| McLaren Health Plan | 25,931 | 41,471 | 93,022 | 147,440 | \$9,044,346 | \$14,260,937 | \$348.79 | \$343.88 |
| Meridian Health Plan | 28,611 | 37,311 | 110,873 | 119,355 | \$9,927,790 | \$10,644,929 | \$346.99 | \$285.30 |
| Molina Healthcare | 6,652 | 7,667 | 24,234 | 22,619 | \$2,083,084 | \$2,269,366 | \$313.15 | \$295.99 |
| Priority Health | 251 | 243 | 1,162 | 937 | \$109,591 | \$73,867 | \$436.62 | \$303.98 |
| Total Health Care | 30 | 25 | 49 | 62 | \$2,567 | \$21,987 | \$85.58 | \$879.50 |
| United Healthcare | 1,324 | 3,611 | 3,754 | 8,432 | \$447,301 | \$786,661 | \$337.84 | \$217.85 |
| Upper Peninsula Health Plan | 251 | 384 | 657 | 1,490 | \$61,376 | \$123,131 | \$244.53 | \$320.65 |
| Other Payer IDs | | | 16,530 | 23,204 | \$563,569 | \$713,018 | | |

| | | | | | | | | |
|--------------------------------------|---------------|---------------|----------------|----------------|---------------------|---------------------|-----------------|-----------------------|
| Fee-For-Service | | | 96,186 | 110,342 | \$8,855,448 | \$12,776,088 | | |
| TOTAL | 63,330 | 90,814 | 347,282 | 434,269 | \$31,147,177 | \$41,718,566 | \$491.82 | \$459.38 |
| Per Member Per Month % Change | | | | | | | | -6.60% |
| Projected Savings | | | | | | | | \$2,945,885.06 |

References

Michigan Public Health Institute, Center for Data Management and Translational Research. State Innovation Model Final Evaluation Report. April 2020

Michigan State University, System exChange Team. Evaluation of the Collective Impact Efforts of the Michigan Community Health Innovation Regions (CHIRs). March 2020

University of Michigan, Child Health Evaluation and Research Center. Community Health Innovation Region Experience Surveys: Summary of Findings from SDOH-Focused Surveys and Interviews. January 2020.

UWPHI. 2014. County health rankings model. Retrieved March 4, 2020 from <https://www.countyhealthrankings.org/resources/county-health-rankings-model>

Terminology

Amount Paid – total amount paid by health plan on behalf of Medicaid.

MM: Member-Months – total months that CHIR clients were enrolled in a health plan.

PMPM: Per Member Per Month – total amount of claims paid divided by the total number of member-months.

Count TCN: Total Claims Number – total amount of claims.