Overhead expenditures in Medicaid

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This white paper is an examination of overhead expenditures in Medicaid. There are two reliable sources for Medicaid expenditures in various states, and when combined, they can tell a pretty detailed story about overhead expenditures. The essence of the story is that Medicaid managed care organizations (MCOs) increase overhead, on average, by 11% for the portion of funds flowing through them. The overhead in the MCOs themselves averages 12% to 14%, and when a state uses them, the state overhead drops by 1 to 3%.

Since MCO use has, on average, no effect on Medicaid personal health care expenditures, the extra expenditures on overhead due to MCO use results in higher Medicaid expenditures. With 55% of Medicaid funds flowing through private MCOs, this amounts to an extra 6.1% for Medicaid costs, or $46 billion in 2021.

National Health Expenditure Accounts (NHEA) data from the Center for Medicare and Medicaid Services (CMS)[1] is compiled from claims data, and represents personal health care (PHC) expenditures, as defined in the NHEA Methodology paper.[2] This means that it does not include overhead costs of the payer, neither the state nor Medicaid MCOs, and it does not include out-of-pocket expenditures by Medicaid enrollees.

The other source is state reports to the automated Medicaid Budget and Expenditure System (MBES).[3] These reports separately show Medical Assistance Program (MAP) expenditures and administrative (ADM) expenditures. The MAP expenditures include a line item for payments to Medicaid MCOs, so the MAP expenditures include the overhead of these MCOs. Neither of these (MAP and ADM) include out-of-pocket expenditures by Medicaid enrollees.

The ADM expenditures represent the overhead costs in the governmental side of the Medicaid system. The difference between the MAP expenditures from MBES data and NHEA PHC expenditures is the overhead in the private, but not provider, portion of the system. Most of this overhead is in the private MCOs. In a few states in some years, the NHEA PHC values are slightly greater than the MAP values, which should not occur with the simplest interpretation of the data.[4]

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[1] The data are from National Health Expenditure Accounts (state of residence), compiled by the Center for Medicare and Medicaid Services (CMS). https://www.cms.gov/research-statistics-data-and-systems/statistics-trends-and-reports/nationalhealthexpenddata/nationalhealthaccountsstatehealthaccountsresidence - Health expenditures by state of residence: summary tables (ZIP)

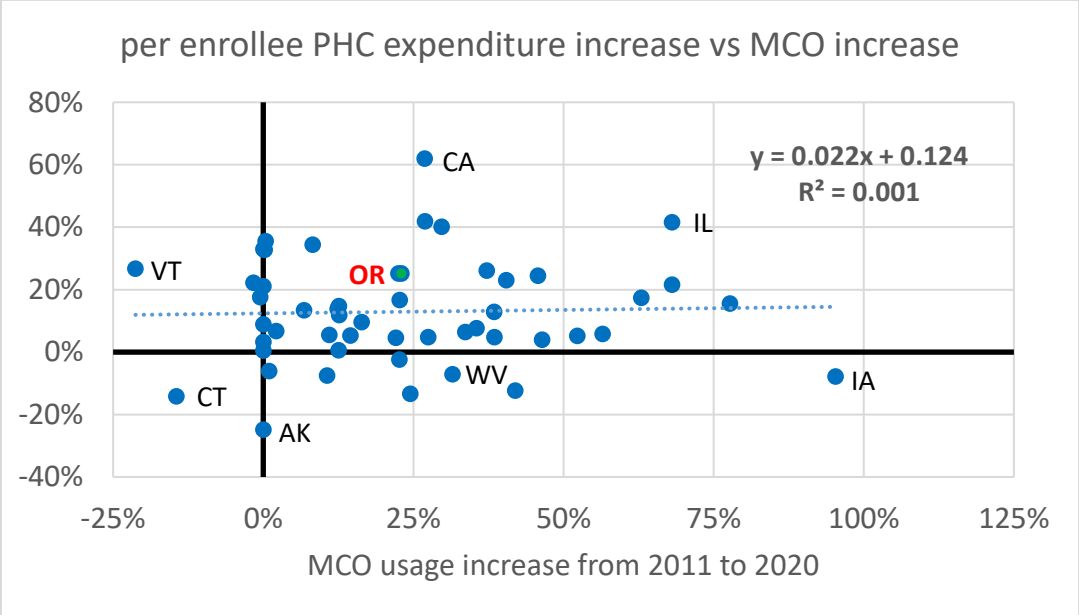
[2] https://www.cms.gov/files/document/definitions-sources-and-methods.pdf

[3] https://www.medicaid.gov/medicaid/financial-management/state-expenditure-reporting-for-medicaid-chip/expenditure-reports-mbescbes/index.html

[4] MAP expenditures were smaller than NHEA PHC expenditures in 6% of the 561 state/year possible values from 2010 through 2020. In some states, particularly Illinois and to some extent in New York, MAP expenditures vary widely from one year to the next, while NHEA PHC expenditures change much less. This is likely due to expenditures in one year going for services in a different year. In two states, CT and OK

Before looking in detail at overhead data, it is worth noting that usage of Medicaid MCOs has no discernable effect on per Medicaid enrollee personal health care expenditures – actual expenditure on medical services. Figure 1 shows per Medicaid enrollee personal health care expenditure increases from 2011 to 2020 as a function of the increase in the fraction of total Medicaid expenditures flowing through an MCO for each state. There is no trend, either increase or decrease, in per enrollee PHC expenditures – MCO usage has no effect on PHC expenditures on average.

Figure 1. Per Medicaid enrollee personal health care (PHC) expenditure increases from 2011 to 2020 vs the increase in the fraction of total Medicaid expenditures (MAP + ADM) flowing through MCOs. The data are for each state and the District of Columbia. Enrollment data is from NHEA. Data for selected states are noted.



We can explore overhead costs with MCO use from several different perspectives. I look at overhead in four different ways –

1. MCO usage by quintile – the fraction of total Medicaid expenditures in a state flowing through MCOs. In appendix 1, I use data from 2010 through 2020 for each state, and aggregate overhead by MCO usage quintiles.
2. MCO usage increase in a state – the increase in the fraction of MCO usage over the last decade. In appendix 2, I present the increase in per enrollee expenditures from 2010/11 to 2019/20 for each state as a function of the increase in MCO usage in that state.

(which comprise half of the state/year values with this anomaly), something more seems to be going on, since the MAP values average 0.3% and 1.9% less than NHEA PHC values respectively. This likely gives an indication of the size of the uncertainties in calculating y and

3. MCO usage in each state – in appendix 3, I look at average overhead in 2017 through 2020 as a function of average MCO usage in that time period for each state.
4. MCO usage for Medicaid nationally – in appendix 4, I look at overhead in Medicaid for the nation from 2011 to 2020.

The results from each way of looking at overhead are presented in Table 1 as the slope and y-intercept of plots of overhead vs. MCO usage. The y-intercepts from Appendix 2 give an indication of the size of the uncertainties when comparing NHEA and MBES data. They should be zero if the data matched well enough. Note that for the analysis of appendix 4, Medicaid expenditures on Medicare parts A and B premiums are not counted as overhead.

Table 1. Slope and y-intercept of overhead vs. MCO usage plots from Appendices 1, 2, and 3

		Appendix 1	Appendix 2	Appendix 3	Appendix 4
Total overhead	slope	10.7%	11.2%	11.1%	11.7%
	y-intercept	8.5%	0.3%	8,7%	5.2%
Non-governmental overhead	slope	12.4%	13.7%	13.4%	14.0%
	y-intercept	3.0%	0.5%	2.7%	0%
Governmental overhead	slope	-1.7%	-1.0% to -2.4%	-1.4% to -2.4%	-2.3%
	y-intercept	5.5%	0 to 0.6%	5.4% to 6.0%	5.2%

A reasonable interpretation of the data in Table 1 would be the following

- Total overhead increased by 10.7% to 11.7% on the Medicaid expenditures that flow through MCOs
- MCO overhead is between 12.4% and 14.0%.
- Government overhead decreased by 1.0% to 2.4% on the expenditures that flow through MCOs
- Total overhead is between 8.2% and 8.7% if MCOs are not used. About 2.5% to 3.0% overhead is due to Medicaid paying Medicare parts A and B premiums, which is accounted as part of MAP expenditures, but is not part of personal health care expenditures.
- Government overhead averages between 5.2% and 6.0% if MCOs are not used.
- States with very small total Medicaid expenditures tend to have a higher fraction of government overhead.

Since, as shown in Figure 1, MCO usage does not have a discernable effect on personal health care expenditures, the extra overhead expenditures with MCO usage generally increased Medicaid expenditures.

Appendix 1 - Overhead as a function of MCO usage

In this appendix we will look at sponsor (payer) overhead[5] expenditures as a fraction of total Medicaid expenditure. We will look at three types of overhead:

Total overhead, which includes all expenditures that are not categorized as personal health care expenditures. I calculate the ratio of MAP (medical assistance program) expenditures plus ADM (administrative) expenditures from MBES reports minus personal health care expenditures from NHEA data to the sum of MAP and ADM expenditures. That is:

$$(MAP + ADM - PHC) / (MAP + ADM)$$

Non-governmental overhead is calculated as:

$$(MAP - PHC) / (MAP + ADM)$$

Governmental overhead is calculated as:

$$ADM / (MAP + ADM)$$

The figures in this appendix are produced from data aggregation to show trends more clearly. I have used data from 2010 through 2020 for each state and D.C. I first smoothed the data for each state over a 3 year period, using 25% from the preceding and succeeding years and 50% from the current year. This produced 51 data points for each year from 2011 to 2019 for both MCO usage and overhead, or 459 values for each.

I then grouped all of the values by quintile of MCO usage, and calculated both the average MCO usage for the quintile and the average overhead for the quintile. Quintiles were chosen because 20% of the 459 values had zero MCO usage.

Figure A1a shows total overhead expenditures as a function of MCO usage. A reasonable interpretation is that, on average, there is 8.4% overhead in a state Medicaid system that does not use MCOs, and that there is a 10.9% increase in overhead on the portion that flows through MCOs. Note that since Figure 1 shows essentially no effect on personal health care expenditure by using MCOs, the increased overhead represents increased expenditure.

Figure A1b shows non-governmental overhead as a function of MCO usage. The non-zero intercept indicates that there is overhead, or at least expenditures not considered part of PHC in the NHEA, even without MCO usage.

[5] All of overhead explored in this white paper is on the sponsor side. The overhead in provider offices is considered part of personal health care expenditures, so the data that is analyzed in this paper does not provide any information about provider overhead.

Figure A1a. Total overhead expenditures as a function of MCO usage by quintiles.

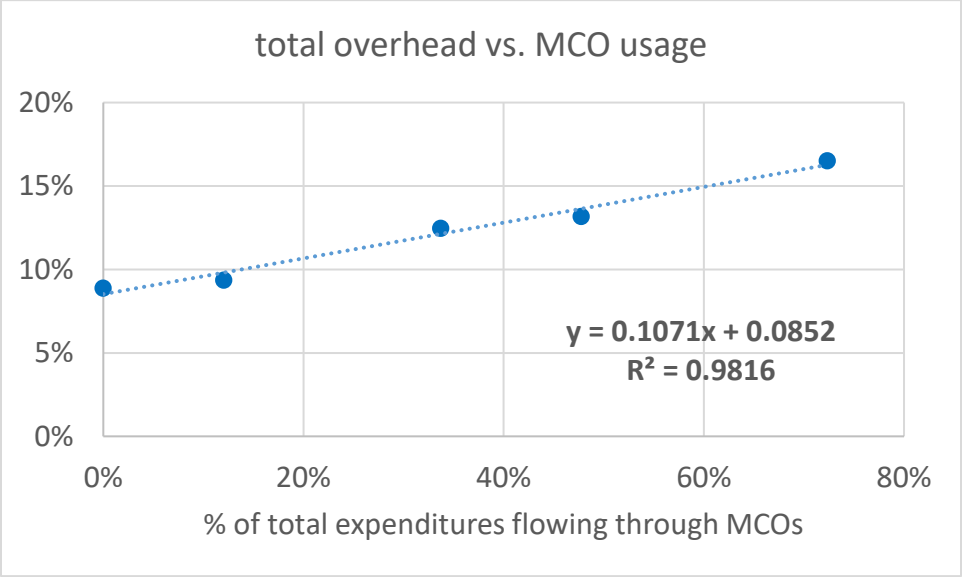
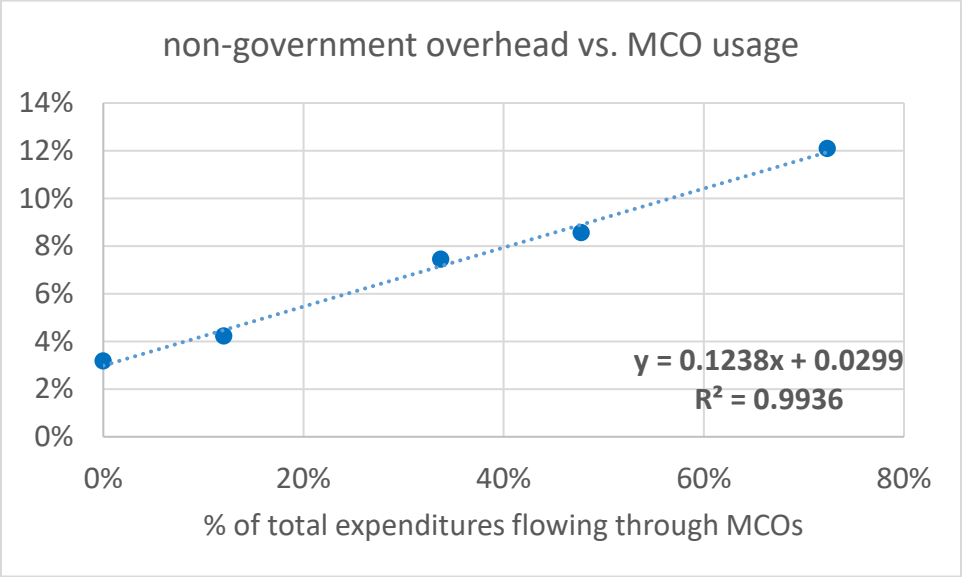


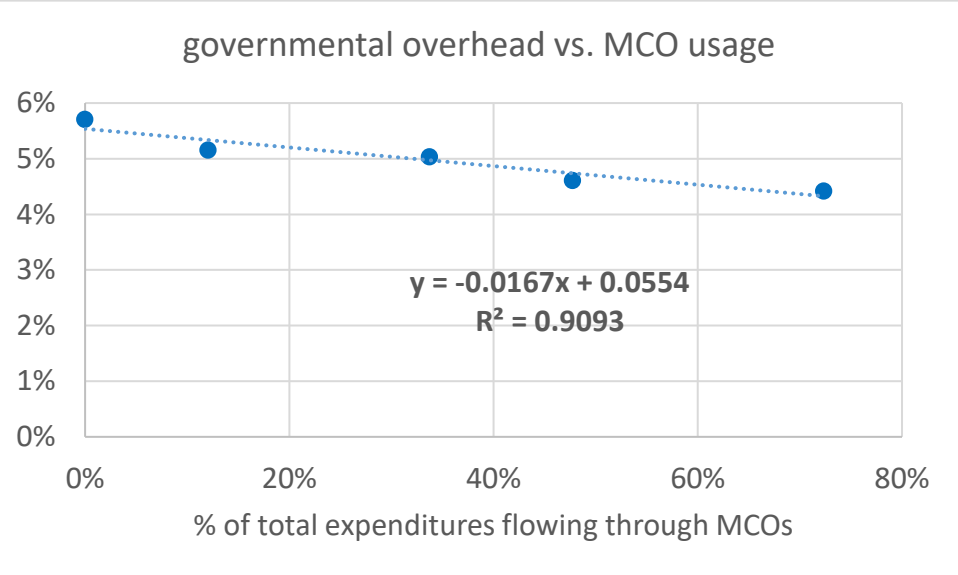
Figure A1b. Non-governmental overhead expenditures as a function of MCO usage by quintiles. The non-zero intercept of 3.0% indicates that there are MAP expenditures that are not part of personal health expenditures. MAP expenditures include Medicare parts A and B premiums paid by Medicaid, and these amount to 2.6% to 3.0% nationally, in agreement with the y-intercept.



From figure A1b, we seen that MCOs have an apparent 12.4% overhead. Another possibility is that MCOs have a higher overhead, but with more MCO use the other non-governmental overhead decreases.

Figure A1c shows governmental overhead as a function of MCO usage. As would be expected, governmental overhead decreases as MCO usage increases, because a portion of administrative work, primarily paying providers for services, is done by the MCO rather than the government Medicaid program. But it appears that governmental overhead drops by only 1.7% on the portion that flows through MCOs. On average, governmental overhead amounts to 5.5% when MCOs are not used, and could drop to 4% with MCO usage for all MAP expenditures.

Figure A1c. Governmental overhead as a function of MCO usage by quintiles.



Conclusion from figures A1a, A1b, and A1c

This analysis suggests that MCO overhead is 12.4%, and that MCO usage increases total overhead by 10.7% on the portion that flows through MCOs because there is a 1.7% decrease in government overhead for that portion. Further, there appears a 5.5% governmental overhead without MCO usage. The 3.0% non-governmental overhead without MCO usage is consistent with the average 2.6% to 3.0% of Medicaid expenditures going towards Medicare parts A and B premiums in 2016 through 2021.

Since, as shown in Figure 1, MCO usage does not have a discernable effect on personal health care expenditures, the extra overhead expenditures with MCO usage generally increase Medicaid expenditures.

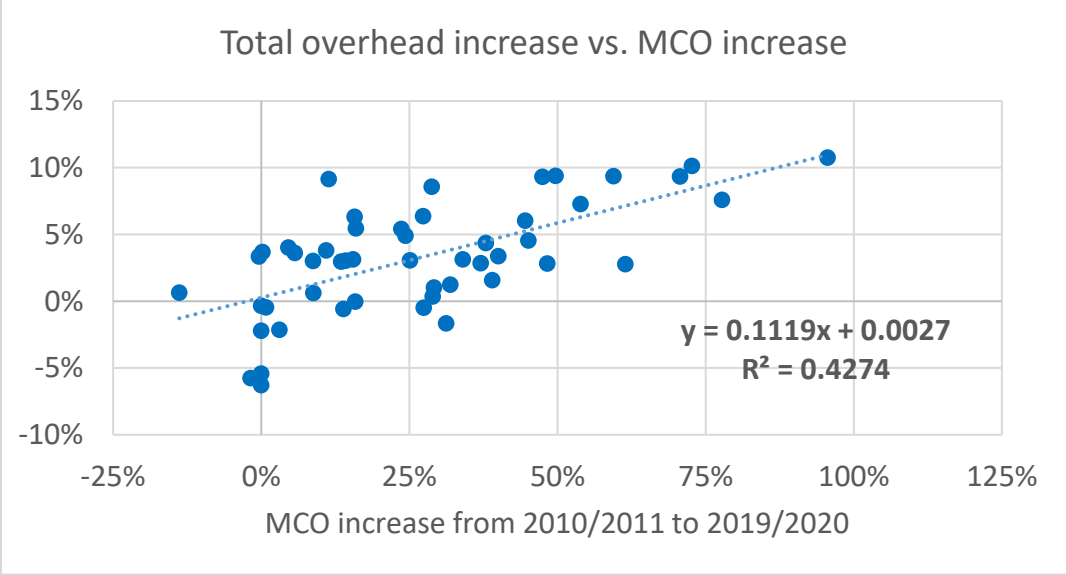
Appendix 2 - Overhead as a function of MCO usage increases

In section, we look at overhead increases as a function of MCO usage increases. For this purpose, I do not aggregate the data for all states into quintiles, but rather report the data for each state as one point in the figure. Using the increase in a particular state allows a comparison to the state with itself, so the vast variations between states does not come into play. Total overhead, non-governmental overhead, and governmental overhead are calculated as described in Appendix 1.

I have calculated the fractional difference in total Medicaid expenditures and Medicaid personal health care expenditures for each state.[6] I used an average of two years for both the beginning and ending data, 2010/2011 and 2019/2020 respectively. There seems to be enough fluctuation in year to year state reporting of expenditures, perhaps due to expenditures in one year for care in another, that it seems useful to do so to see the trend more clearly.

Figure A2a shows this fractional difference vs. the change in the fraction of expenditures flowing through MCOs for each state (without Vermont). Figure A2b shows the same thing with Vermont included. Vermont is such a huge outlier that we discuss it separately in Appendix 5. The slope of the trend line in Figure A2a is 11.2%, nearly the same as in Figure A1a.

Figure A2a. Overhead expenditure increases vs. increase in the fraction of Medicaid expenditures flowing through MCOs for each state, except for Vermont. Figure A1b shows the same data with Vermont included. The slope of 11.2%, as shown in the trend line equation, suggests that MCO overhead averages 11%.



[6] More specifically, ((MAP + ADM from MBES) – NHEA PHC) / (MAP + ADM from MBES)

Figure A2b. Total overhead expenditure increases vs. increase in the fraction of Medicaid expenditures flowing through MCOs for each state.

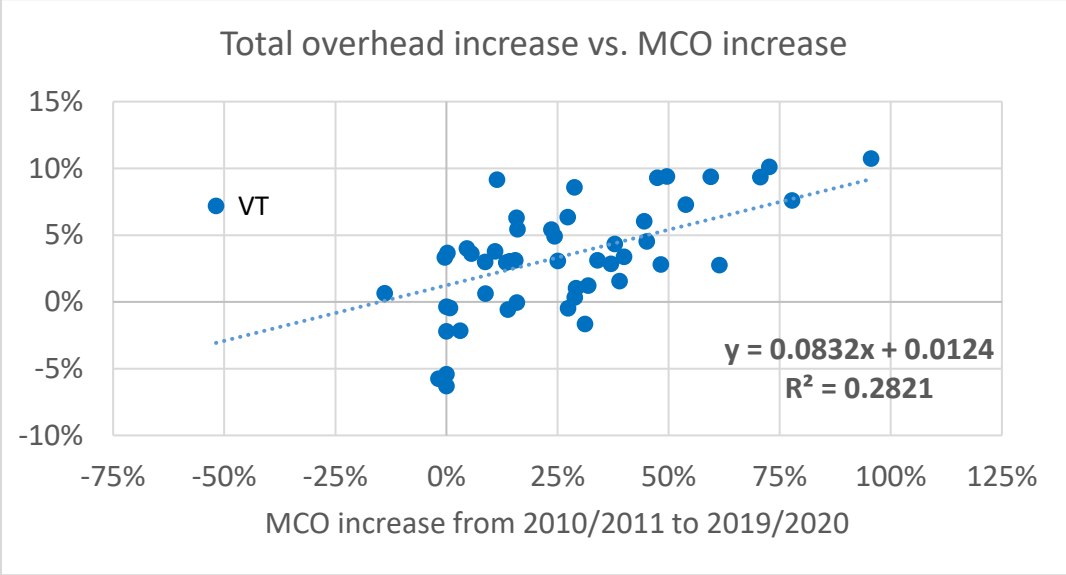


Figure A2c shows the increase in non-governmental overhead as a function of MCO usage increase. The non-zero y-intercept gives some indication of the size of the uncertainties when comparing the MBES and NHEA data. The slope indicates that MCO overhead averages 13.7%.

Figure A2c. Non-governmental overhead expenditure increases vs. increase in the fraction of Medicaid expenditures flowing through MCOs for each state.

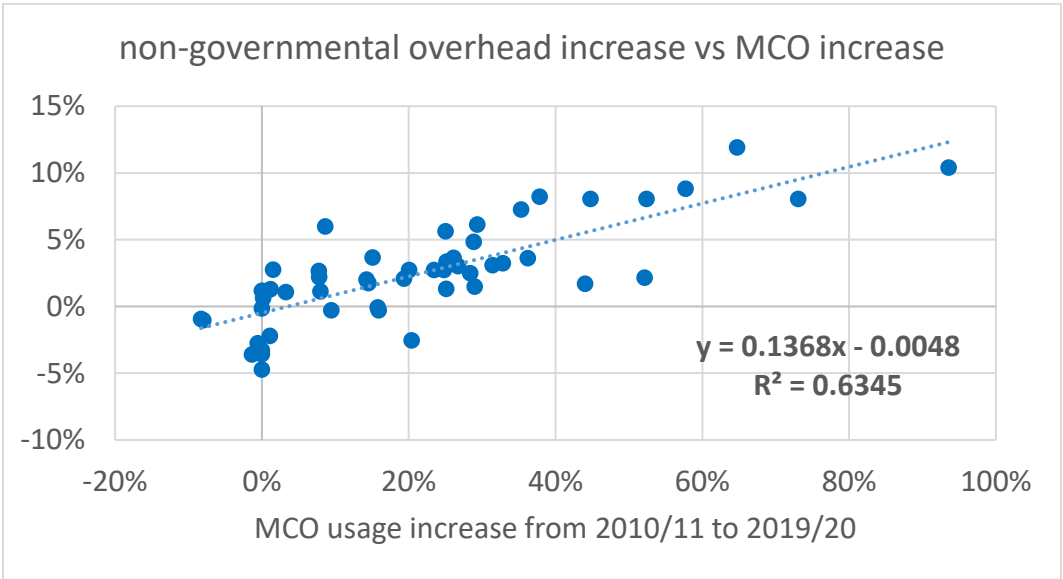


Figure A2d shows the governmental overhead decrease as a function of MCO usage. Vermont is again a big outlier, for which we give more detail in Appendix 5. Wyoming, the state with the smallest Medicaid expenditures, is also a bit of an outlier. With this in mind, Figure A2e shows the same thing as Figure A2d but with Vermont and Montana left out.

Figure A2d. Governmental overhead expenditure increases vs. increase in the fraction of Medicaid expenditures flowing through MCOs for each state

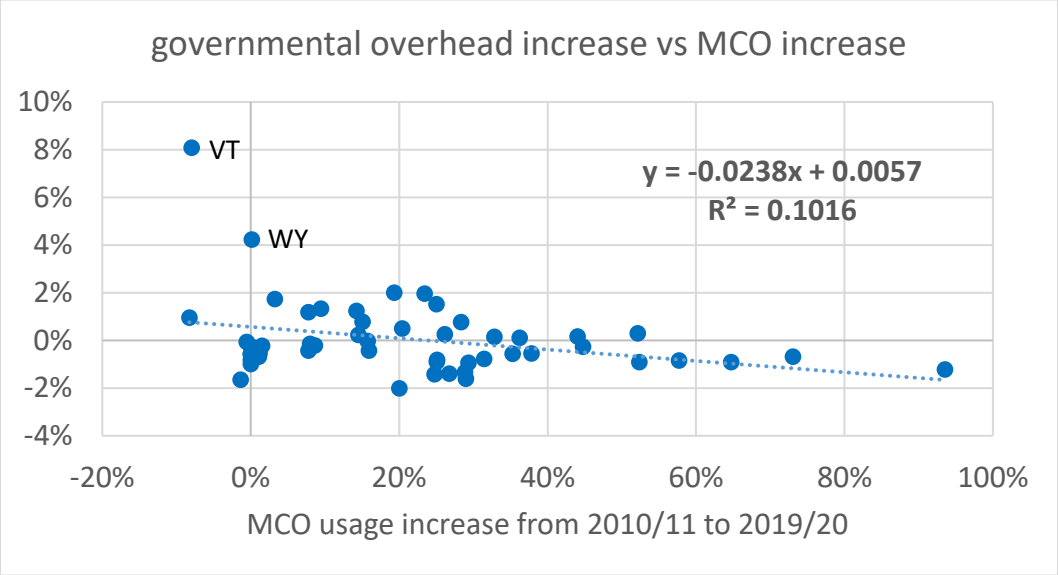
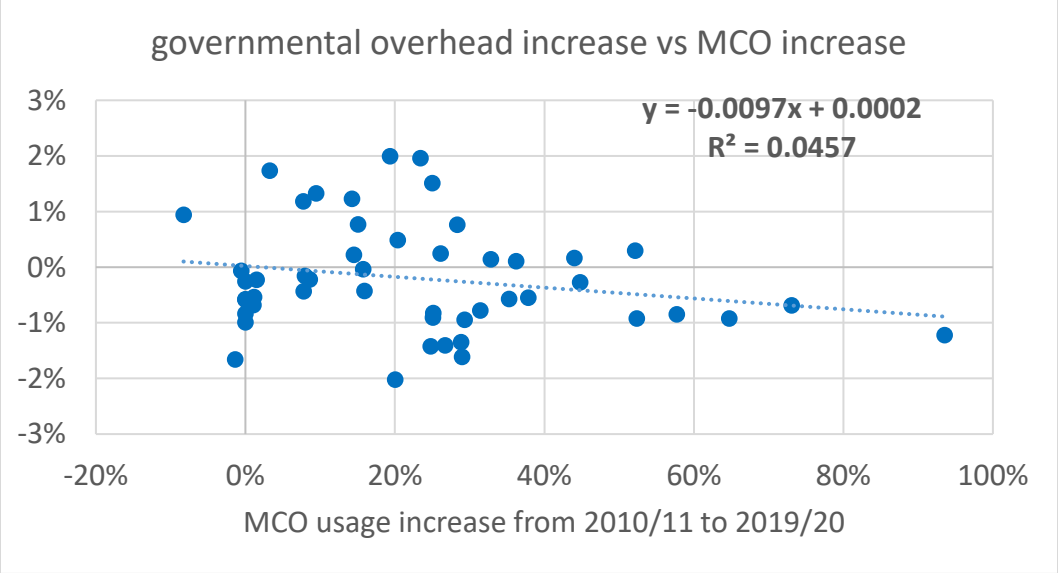


Figure A2e. Governmental overhead expenditure increases vs. increase in the fraction of Medicaid expenditures flowing through MCOs for each state except Vermont and Wyoming.



Conclusion

From the analysis in this appendix, the apparent total overhead increase from MCO use appears to be 11.2%, very similar to the 10.7% found in the analysis in appendix 1. MCO overhead seems to average 13.7%, with governmental overhead dropping by 1.0% to perhaps as much as 2.4% for the amount of Medicaid expenditures flowing through MCOs.

Since, as shown in Figure 1, MCO usage does not have a discernable effect on personal health care expenditures, the extra overhead expenditures with MCO usage generally increase Medicaid expenditures.

Appendix 3 – Overhead as a function of MCO usage in 2017 through 2020

In this appendix, we look at total overhead in 2017 through 2020 as a fraction of total Medicaid expenditures for each state and D.C. We compare that with the average fraction Medicaid expenditures that flowed through MCOs in that time period.

Figure A3a shows total overhead as a function of MCO usage. A reasonable interpretation is that overhead increases by 11.1% of the amount of expenditures flowing through MCOs, and there is 8.7% overhead even without MCO usage. Again, 2.9% of that is Medicaid paying Medicare parts A and B premiums.

Figure A3b shows non-governmental overhead as a function of MCO usage. The data are consistent with a 13.4% MCO overhead. The y-intercept of 2.7% is consistent with the Medicaid expenditures for Medicare parts A and B premiums.

Figure A3c shows governmental overhead as a function of MCO usage. Again, Wyoming and Vermont are outliers, so Figure A3d is the same as Figure A3c but with Vermont and Wyoming removed. As MCO usage increases, government overhead decreases by 1.4% to 2.4% on the expenditures flowing through MCOs, and there is a 5.4% to 6.0% government overhead without MCO usage.

Figure A3a. Total overhead for 2017 through 2020 as a fraction of expenditures in each state as a function of MCO usage in that state.

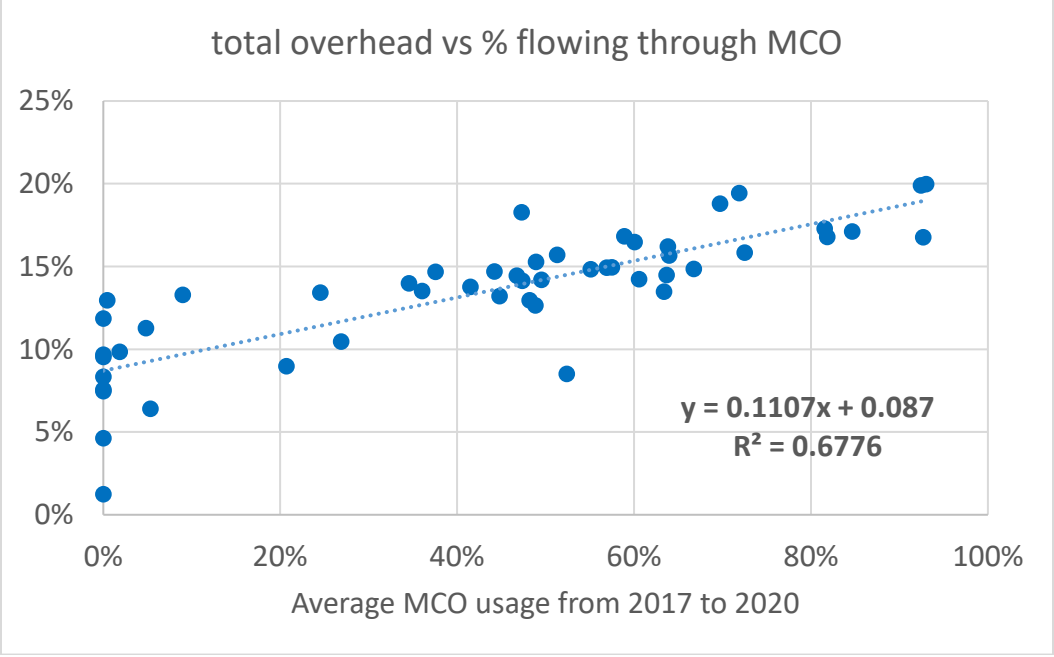


Figure A3b. Non-governmental overhead for 2017 through 2020 as a fraction of expenditures in each state as a function of MCO usage in that state. The slope of 13.4% can be interpreted as the average MCO overhead. The y-intercept of 2.7% is consistent with the 2.6% to 3.0% of Medicaid expenditures that go towards Medicare parts A and B premiums.

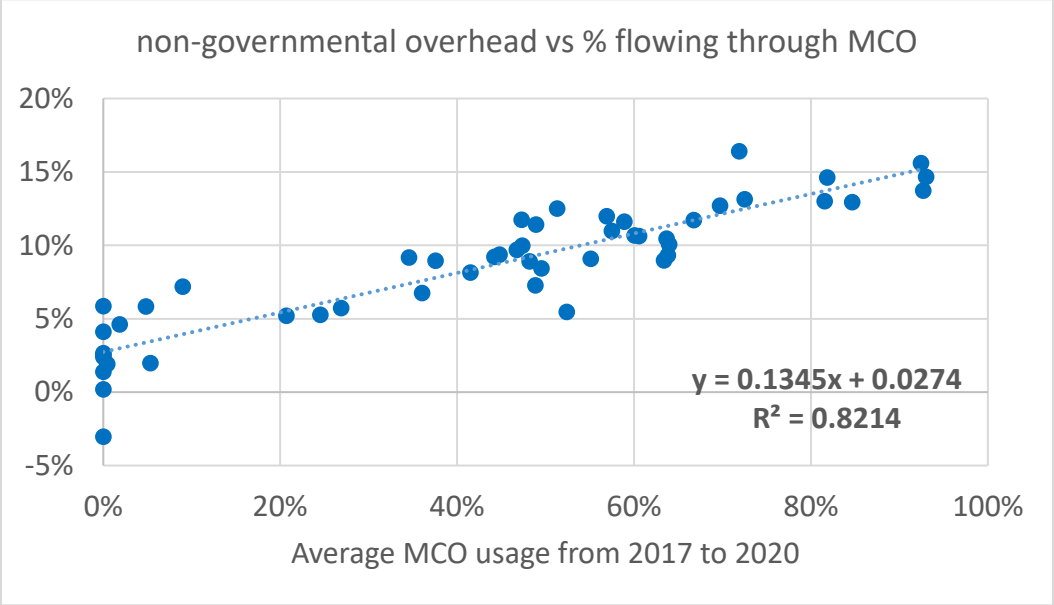


Figure A3c. Governmental overhead for 2017 through 2020 as a fraction of expenditures in each state as a function of MCO usage in that state. Again, Wyoming and Vermont are outliers.

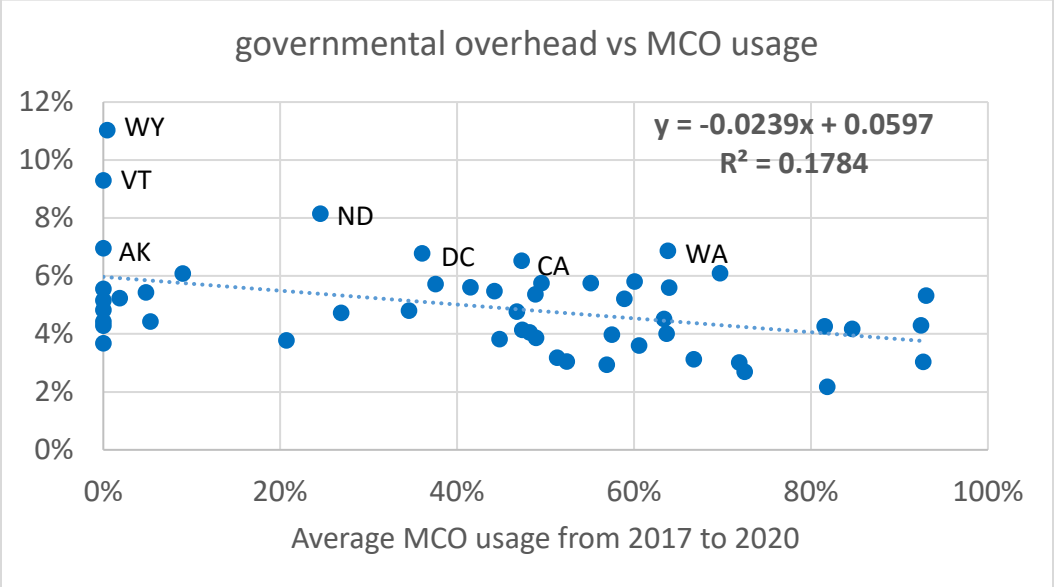
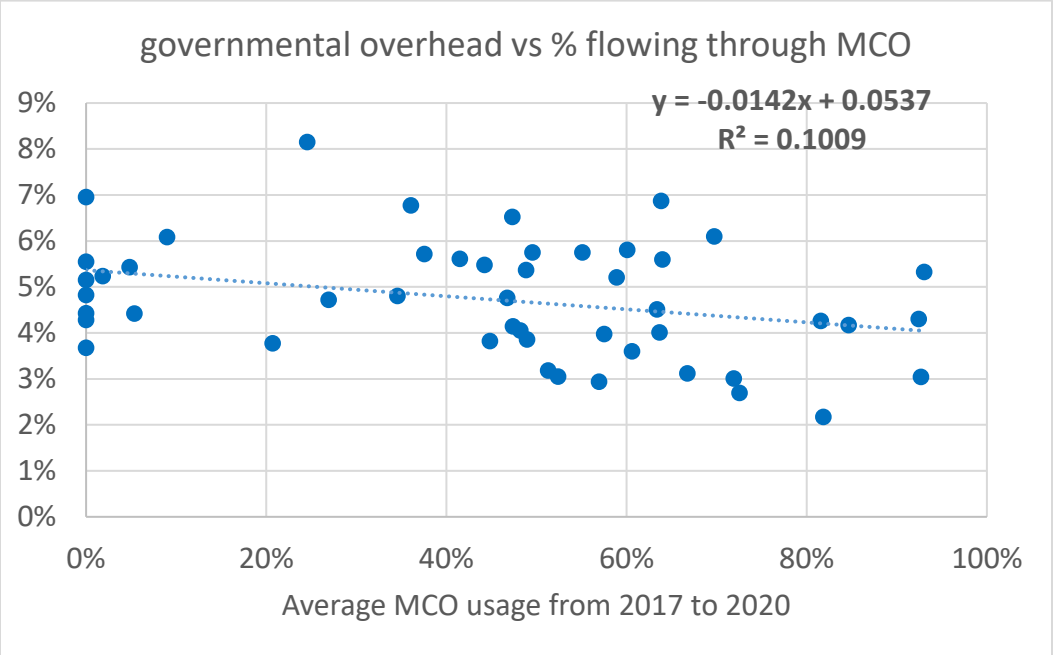


Figure A3d. Governmental overhead for 2017 through 2020 as a fraction of expenditures in each state, except Wyoming and Vermont, as a function of MCO usage in that state.



Conclusion

From the analysis in this appendix, the apparent total overhead increase from MCO use appears to be 11.1%, very similar to the 10.7% found in the analysis in appendix 1 and the 11.2% found in appendix 2. MCO overhead seems to average 13.4%, with governmental overhead dropping by 1.4% to 2.4% for the amount of Medicaid expenditures flowing through MCOs. Government overhead without MCO usage averages 5.4% to 6.0%.

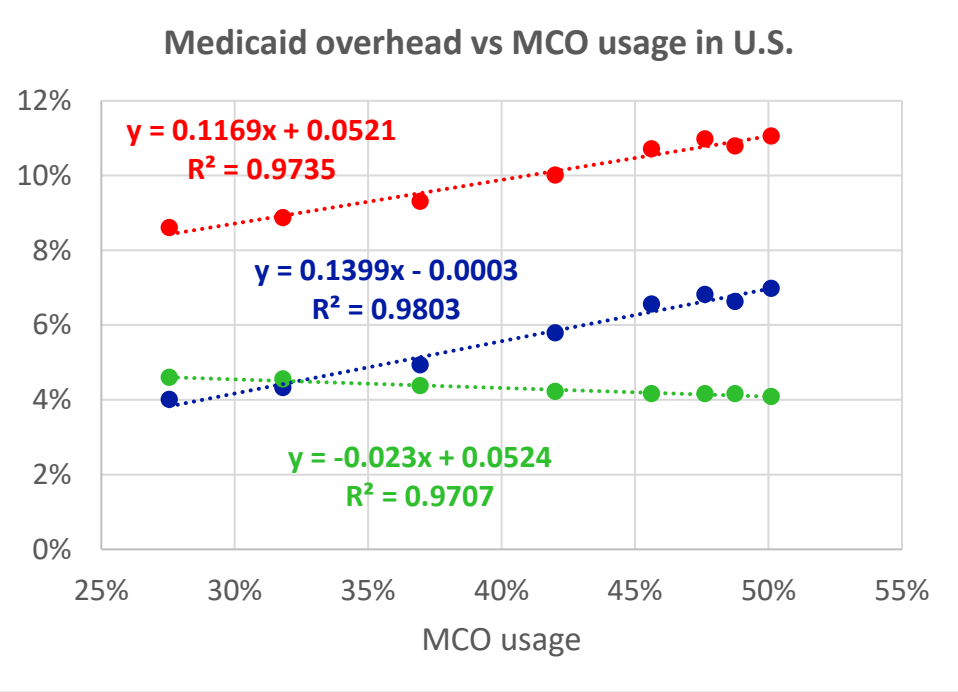
Since, as shown in Figure 1, MCO usage does not have a discernable effect on personal health care expenditures, the extra overhead expenditures with MCO usage generally increase Medicaid expenditures.

Appendix 4 – Overhead in Medicaid across the nation

In this appendix we look at Medicaid overhead expenditures in the nation as a whole, using data from 2011 through 2020. This effectively leaves data for 2012 through 2019. During this time frame, MCO usage grew from 21% to 52%, so we can see the effect of increased MCO usage. I first smoothed the data by using 25% of the previous year, 50% of the current year, and 25% of the succeeding year. I subtracted the amount spent by Medicaid on Medicare parts A and B premiums from the MAP expenditures, so these premium payments are not counted as total or non-governmental overhead for this analysis.

Figure A4a shows overhead as a function of MCO usage. The same y-intercept for both total and governmental overhead is indicative of the non-governmental overhead being due to MCO usage. We again find that MCO usage increased Medicaid expenditures, by about 11.7% for the portion of expenditures flowing through MCOs.

Figure A4a. Medicaid overhead expenditures for the U.S. from 2012 through 2019 vs. MCO usage in those years. The red values are total overhead, the blue values are non-governmental overhead, and the green values are governmental overhead. Since Medicare premiums have been removed from MAP values, the non-governmental overhead is due to MCO usage, as the y-intercept of essentially zero indicates.



Appendix 5- Vermont excess administrative expenditures

As noted in the discussions of Figures A2a, A2b, A2d, and A2e, Vermont had substantial overhead costs increases even though they decreased their use of Medicaid MCOs. Table A4a shows this in greater detail. There was a slight decrease in overhead expenditures for the years 2013 to 2015, after they stopped using MCOs, as seen in row 4 of Table A5a. But starting in 2016, overhead expenditures rose substantially. Because these were incurred by the state program itself, and not in the MCOs (which were no longer used), these overhead expenditures appear in the MBES reports as ADM expenditures.

Table A5b shows details for Vermont's ADM expenditures from MBES reports for 2014 through 2018. There are large expenditures listed as "other financial participation" which accounts for most of the increase in overhead costs for 2017 and 2018, but they do not give an indication of why such large expenditures occurred. These expenditures by themselves are larger than all ADM expenditures for years prior to 2016. The main cost driver in 2016 appears to be expenditures for the design, development, and installation of an eligibility determination system.

Table A5a. Data for Vermont. The second row is ADM (administrative expenditures from MBES reports). The third row shows the amount of total Medicaid expenditures flowing through an MCO. The fourth row shows the fractional difference in total expenditures and personal health care expenditures (i.e. – ((MAP + ADM) – PHC) / (MAP + ADM)), and it is these data that are used in Figure A1d. Something happened in Vermont in 2016 to greatly increase administrative expenditures.

Vermont	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
ADM (millions)	8	18	31	37	41	47	102	150	171	168	173
MCO usage	82%	21%	0%	0%	0%	0%	0%	0%	0%	0%	0%
fractional diff	3%	6%	3%	1%	2%	2%	10%	13%	11%	12%	11%

Table A5b. Detailed information for Vermont ADM expenditures from MBES reports for 2014 through 2018, the years in which there was an anomalous increase in total ADM expenditures.

	2014	2015	2016	2017	2018
MMIS – In-house Activities	2.4	4.0	4.3	3.4	2.2
MMIS - Private Sector	14.1	4.4	3.5	8.3	11.4
Skilled Professional Medical Personnel	0.7	0.2	0.0	6.6	8.9
Approved MMIS: Private	0.0	0.0	0.0	9.9	19.1
develop/install eligibility determination system	11.0	14.5	50.0	18.8	11.7
eligibility determination (private contractors)	0.0	0.0	16.1	15.3	20.9
eligibility determination (in-house)	0.0	0.8	5.3	6.0	11.4
other financial participation	4.0	1.2	0.0	63.9	80.3
all other ADM line items	11.8	8.4	9.6	10.2	7.9
total net	43.9	33.5	88.8	142.4	173.8