

Questioning the Widely Publicized Savings Reported for North Carolina Medicaid

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The recently released study on Community Care of North Carolina (CCNC), conducted by Milliman USA,¹ has found by far the largest savings and utilization reduction ever formally reported in any care management program, \$382,000,000 per year after only 3 years. While the study relied upon proprietary data provided by the state to identify these savings, the 2 relevant online federal, publicly accessible data sources overlooked in that evaluation report—the Healthcare Utilization and Quality Project (HCUP)² and the MACPAC Report to Congress³—support the opposite answer: that there was no utilization reduction or savings, and that North Carolina’s Medicaid program is higher cost than its peers.

It was especially disappointing not to see HCUP mentioned in this study, because 2 well-publicized public presentations,^{4,5} along with the Kaiser Family Foundation,⁶ specifically noted that a previous consulting firm’s main savings claims covering the earlier period (2000 to 2006) also arrived at a conclusion directly contradicted by the HCUP data.

Three Questions Raised by the Federal Databases About Conclusions and Methodology

Milliman concluded that roughly \$250,000,000 of the 2009 savings came from children’s admissions and emergency department (ED) visits,^{1,p5} presumably relative to a 2006 baseline. (Because the federal data are based on calendar years and the state data are based on fiscal years starting July 1, \$250,000,000 is used as the calendar 2009 estimate, roughly halfway between Milliman’s \$261,000,000 savings estimate for fiscal 2009 and \$238,000,000 savings estimate for fiscal 2010.) The actual baseline year was not disclosed, but the analysis below would reach roughly the same conclusion no matter what baseline year had been used from 2003 to 2006, because there has been no significant change in the key metric—the children’s admission rate either absolutely or relative to neighboring “control states”—in many years.

The state Medicaid ED rate climbed over the period (starting in 2007; 2006 is not available on HCUP; breakouts by age category are not available), meaning that the savings could only be found in inpatient admission reduction.

However, because only \$114,000,000 was

actually spent by the state on children’s admissions in 2006 according to HCUP² (this number does not include profit margin charged by the hospitals to Medicaid but does include costs for treating disabled children), one might first question how it is possible to save \$250,000,000 a year on a base of \$114,000,000 a year even with 15% growth in the children’s population over the period.⁷ While it is true that the savings claim was based on all healthcare costs, not just inpatient and ED, the consensus view in the literature is that other costs will rise. In fact the report evaluation of the CCNC program notes that that this PCMH model, like every other model used to manage chronic disease, “has a cost, as members receive more primary care services and prescription drugs. Also, the medical home model has direct costs, related to required infrastructure and increased medical management activities. Under the medical home model, it is assumed that these additional costs will be *more than offset* [emphasis this author’s] by reduced costs for emergency room visits, inpatient hospital admissions, and other services as members receive improved access to primary care, prescription drugs, and other appropriate treatments for chronic conditions.”^{1,p3} Therefore, it is quite possible that inpatient expenses would have to fall considerably *more than* \$250,000,000 for the net reduction to be \$250,000,000 once the other higher costs of other services are accounted for.

Further, even if mathematically possible—meaning even if the initial spending figure had exceeded the savings figure—HCUP reveals that the children’s admission rate fell only from 36 per 1000 to 34 per 1000 from 2006 to 2009.

The second question would be: how is it possible to show such substantial savings on such a modest decline in children’s admissions? While we would look to the state or its consultants to answer that question, we can rule out changes in risk status as an answer: there is no a priori reason to expect that a massive, sudden, and otherwise unnoticed change in non-disabled children’s health status would have caused the children’s admission rate to rise by more than 200% absent the program, after having been roughly unchanged for many years.

In addition to the 2 questions about the apparent impossibility of the conclusion in absolute terms, there is a third, methodological question about relative performance: As modest as that admissions decline of 2 per 1000 is in absolute terms, the 2 neighboring states (South Carolina and Tennessee) for

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which HCUP data are available declined as much or more over the same period⁸ absent a PCMH model, using a much lower cost health maintenance organization model. (Tennessee had exactly the same admission rates in both years as North Carolina, while South Carolina declined from a higher 2006 rate to a lower 2009 rate.) Why, despite the fortuitous “natural experiment” opportunity presented by having access to 2 neighboring states’ longitudinal data also reported to HCUP using the identical algorithm, didn’t the study take note of those states’ results, if only to explain why these *prima facie* highly relevant comparisons were deemed unimportant or misleading enough to be omitted from the report?

Answers to these 3 questions are critical because (1) either the federal database designed for and used by many researchers to measure cost and utilization by payer is so fatally flawed that it failed to register the largest decline in children’s utilization and cost ever achieved by any payer, and therefore must be redesigned; or (2) consultants for the state often called the “poster child”⁹ for Medicaid medical homes claimed a mathematically impossible amount of savings when in fact there were none.

Corollary Question About North Carolina Medicaid’s Performance Over the Decade

The overall trend covering the decade shows a similar dichotomy between the states’ reports and the HCUP trends. Over the full decade (2000 to 2009), both teams of consultants claim roughly a combined reduction in admissions in excess of 50%.^{1,p4,10,p5} (The Mercer report shows a 47% reduction through 2006, while the Milliman report shows an additional 15% reduction for adults and children and 3% for the disabled since 2006. While the Milliman report does not explicitly state that the 15% comes from admissions, previous endnotes documented that Milliman agrees with the general industry consensus that costs other than ED and inpatient usually rise in a PCMH model,¹¹ meaning that a 15% total cost reduction would actually require a reduction in admissions greater than 15% to offset elements of expense that increase.) The HCUP database shows no statistically significant change in the North Carolina admission rate⁷ (calculating “rate” requires a denominator, the number of Medicaid lives; the denominators for both Carolinas come from the Kaiser Family Foundation) either on an absolute basis or relative to a “control” of South Carolina,¹² the only neighboring state for which a full decade of inpatient data is available on HCUP. Although absolute admission rate performance shows improvement in some of the following categories and deterioration in others, the statistically insignificant difference relative to South Carolina is also true of groupings in which the PCMH program could be presumed to have its greatest

impact: preventable admissions as a whole¹² (the Disease Management Purchasing Consortium list of preventable admissions was added to the AHRQ list in order to provide the maximum potential to measure a numerical reduction in admissions; a complete list of ICD-9s is available from the author), admissions in the 2 common chronic categories of greatest CCNC focus combined (asthma and diabetes), or the single admissions category that at least arguably most meets the criteria of preventability specifically through a PCMH, cellulites (due to the importance of early access to care, the correlation with a disease category of focus [diabetes], relatively common incidence, and the lack of a need for patients to change lifestyle to resolve the condition).

If not generated by any of those 3 sub-categories and not discernible from the admissions trend as a whole, one must therefore ask which sets of diagnoses fell enough to generate a 50% admission reduction overall, or any admission reduction at all, a question also raised by earlier analyses of the previous report.^{4,p12-16}

A Final Question About Milliman’s Conclusions Versus the MACPAC Database

One always seeks a “confirming” methodology, an entirely different approach that reaches a conclusion consistent with the answer provided by the main analysis. The MACPAC database reveals that, for adults and children, the 2 categories in which the CCNC program had been in place the longest, North Carolina Medicaid per capita spending is roughly 40% and 24% higher respectively than the average of the 4 surrounding states.

On its own, this confirming analysis—even with the substantial cost differential—would be insufficient to support the conclusion that the CCNC program is not effectively controlling costs. For example, the result may also indicate either that Medicaid itself and/or medical insurance is/are simply more expensive in North Carolina than in the rest of the region, or that the Medicaid benefit in North Carolina is richer. However, the aged Medicaid category, in which PCMH is not a factor because Medicaid is the secondary payer for medical spending behind Medicare and primary payer only for custodial care, tells the opposite story: North Carolina is 23% lower cost than the average of the other 4 states. Nor is the state high cost for commercial coverage. According to the Commonwealth Fund,¹³ North Carolina is only 4% higher than the average of the surrounding states for commercial coverage (4% is calculated based on the sum of the premium for family coverage and the average individual deductible; the report did not list the average family deductible).

It is also possible that the commercial comparison is not a valid one because Medicaid now needs to pay physicians

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much more money to support CCNC, unlike as recently as 2008, when the provider fee differential versus bordering states (as compared in all cases with Medicare's fee schedule for that state) was less than 6%.¹⁴ Even if the differential is now, for example, 30% (a figure picked as an upper bound because no state is more than 30% higher than its bordering states), physician fees account for only perhaps 40% of all Medicaid payments (as estimated from the Mercer report,¹⁰ available from the state or the author). Therefore even a 30% differential would account for only 12 percentage points of the higher cost, leaving 28 percentage points (adults) and 12 percentage points (children) still unaccounted for. And a provider fee differential much greater than the 2008 differential of 6% could be seen as a consequence of the program rather than an independent variable inevitably increasing the state's costs.

Perhaps there is another explanation for this substantial differential, but, as with the utilization figures themselves, one must question how a state saving this much money managing large majorities of the adult and children's populations through CCNC could nonetheless be as high cost overall for those same 2 beneficiary categories when all members are included.

Implications for Policy

Many states are considering or implementing programs similar to this one, based partly on these consistently positive reports.¹⁵ The pending federal subsidy of \$9-to-\$1, which contributes to that momentum, is itself based partly on previous North Carolina reports.¹⁶ Yet this commentary has raised many questions about these conclusions. There is no reason to believe that CCNC and its consultants are not acting in good faith when trying to determine the impact of their program. It is also possible that the consultants did not purposefully overlook the contradictory data but rather were simply unaware of it. Therefore, now that most North Carolina Medicaid-eligible non-disabled adults and children are in CCNC and now that the discrepancies with public statewide data are apparent, the recommendation would be to redo the analysis on a full statewide basis, reconciling the savings and admission reduction claims with the state and federal data cited above and/or clearly explaining why seemingly authoritative statewide and state-to-state data on medical event rates and costs would not apply.

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REFERENCES

1. **Cosway R, Girod C, Abbott B.** Analysis of Community Care of North Carolina Cost Savings: Milliman Report for the North Carolina Division of Medical Assistance. <https://www.communitycarenc.org/elements/media/files/milliman-executive-summary.pdf>. Published December 15, 2011. Accessed December 16, 2011.
2. **US Department of Health & Human Services.** Agency for Healthcare Research and Quality Healthcare Utilization and Quality Project. <http://hcupnet.ahrq.gov/HCUFNet.jsp>. Published 2009. Accessed May 2011.
3. **MACPAC June 2011 Report to the Congress: The Evolution of Managed Care in Medicaid. Medicaid and CHIP Payment and Access Commission.** <http://www.macpac.gov/reports>. Revised June 25, 2011. Accessed September 8, 2011.
4. **Peikes D.** Medical Home Evaluations: Why They Fail, How to Structure Them. Webinar for the Medical Home Audioconference Series. Mathematica Policy Research, Inc. <http://www.ehcca.com/presentations/MedHome20100526/peikes.pdf>. Published May 26, 2010. Accessed May 26, 2010.
5. **Lewis A.** Fictional outcomes reporting: the "back story" of the North Carolina Medicaid PCMH and other demonstrably invalid outcomes. Presented at: The Sixth National Medicaid Congress; June 13-15, 2011; Washington, DC. <http://www.medicaidcongress.com/past6/agenda/index.html>. Accessed June 17, 2011.
6. **Brown R.** Strategies for Reining in Medicare Spending Through Delivery System Reforms: Assessing the Evidence and Opportunities. Mathematica Policy Research. The Henry J. Kaiser Family Foundation. <http://www.kff.org/medicare/upload/7984.pdf>. Published September 2009. Accessed October 1, 2009.
7. **The Henry J. Kaiser Family Foundation.** Medicaid Enrollment: June 2010 Data Snapshot. Kaiser Commission on Medicaid Facts. <http://www.kff.org/medicaid/upload/8050-03.pdf>. Published February 2011. Accessed April 15, 2011.
8. **Ellis ER, Roberts D, Rousseau DM, Schwartz T.** The Kaiser Commission on Medicaid and Uninsured. Medicaid Enrollment in 50 States: June 2008 Data Update. <http://www.kff.org/medicaid/upload/7606-04.pdf>. Published September 2009. Accessed November 11, 2011.
9. **Al Lewis.** Community Care of North Carolina: the Disease Management Care Blog isn't going to quote it without a big caveat. Disease Management Care Blog. <http://disease-management-careblog.blogspot.com/2009/02/community-care-of-north-carolina.html>. Published February 5, 2009. Accessed February 5, 2009.
10. **Lurito K.** CCNC/ACCESS Cost Savings—State Fiscal Year 2005 and 2006 Analysis. Phoenix, AZ: Mercer Government Human Services Management Consulting. September 19, 2007.
11. **Reid RJ, Larson EB.** Financial implications of the patient-centered medical home. *JAMA*. 2012;308(1):83-84. doi:10.1001/jama.2012.7661.
12. **Burns J.** North Carolina PCMH's data offer promise, spur debate. *Managed Care*. http://www.nxtbook.com/nxtbooks/medimedia/managedcare_201203/index.php#26. Published March 2012. Accessed March 3, 2012.
13. **Schoen C, Fryer A-K, Collins SR, Radley DC.** State Trends in Premiums and Deductibles, 2003–2010: The Need for Action to Address Rising Costs. *The Commonwealth Fund*. <http://www.commonwealthfund.org/Publications/Issue-Briefs/2011/Nov/State-Trends-in-Premiums.aspx>. Published November 17, 2011. Accessed December 3, 2011.
14. **The Henry J. Kaiser Family Foundation.** Medicaid-to-Medicare Fee Index, 2008. <http://www.statehealthfacts.org/comparetable.jsp?ind=196&cat=4>. The Henry J. Kaiser Family Foundation. Published 2008. Accessed March 12, 2012.
15. **Robeznieks A.** Remodeling required. *Modern Healthcare*. <http://www.modernhealthcare.com/article/20120218/MAGAZINE/302189938/1140>. Published February 18, 2012. Accessed February 18, 2012.
16. **The Henry J. Kaiser Family Foundation.** Medicaid's New "Health Home" Option. <http://www.kff.org/medicaid/upload/8136.pdf>. Published January 2011. Accessed October 23, 2012. ■