

# CCNC'S IMPACTABILITY APPROACH: How “Finding the Needle in a Haystack” Continues to Yield Savings from CCNC Care Management



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## KEY POINTS FROM THIS BRIEF:

- CCNC's Impactability Score approach yields significant savings from care management in North Carolina's Medicaid program. For every \$1 spent on CCNC, the State saves \$3.
- Impactability Scores quantify the impact observed on patients receiving an intervention and adjusts for what is observed in a clinically-similar comparison group to control for “regression to the mean,” a common criticism of non-randomized studies. Predictive algorithms are then created to find these unique clinical opportunities where intervention has a high likelihood of impact.
- Since implementing its Impactability Scores, CCNC has continued to bend the curve by achieving an additional 13% and 27% reduction in total ED visits and inpatient admissions, respectively. This represents an additional 4% decrease in total Medicaid spending.
- Different from “hot-spotting” of high risk or high cost patients, “Impactability” leverages empirical evidence of CCNC's effectiveness for specific patients (i.e., the needles in the haystack). Consistent with recent findings, we found that just targeting the highest risk or highest cost patients does not yield desired results. CCNC takes it a step further.
- This more strategic approach, coupled with CCNC's strong primary care base and broad community cooperation, has been key to its success in keeping patients out of the hospital and keeping Medicaid spend down.

## Background

Since 2011, multiple evaluations have examined the savings impact of Community Care of North Carolina's managed care program for Medicaid and dual Medicaid-Medicare beneficiaries.<sup>1-6</sup> Studies differed in time frame, populations, and methodological approaches, but each concluded substantial Medicaid or Medicare savings net of program costs. Those that considered the total enrolled population each independently concluded a savings impact of approximately \$3 for every \$1 invested in CCNC.

Most of these evaluations were only able to look at performance of the CCNC program up through 2012. However, since then CCNC has made several enhancements in its approach to care management which bears reporting. One of the more significant improvements was a move from targeting the highest cost or highest risk patients to targeting those high risk, high cost patients most likely to benefit from care management with the implementation of Impactability Scores™.

The Impactability Scores™ are a numerical representation of the likely cost savings attributable to care management if the patient were to become engaged in care management. The number is empirically driven off what is observed from our in-house evaluations of our care management programs, modified over time to address new findings. Each of these evaluations uses a rigorous comparison group to remove the impact of “regression to the mean,” so that true impact can be measured. This approach allows for management and individual care managers to more accurately gauge the impact, or relative “effect-size” for any given patient, allowing for more data-driven targeting of patients.

It's important to note that Impactability Scores are not a risk-stratification tool, nor are they a hot-spotting tool. CCNC utilizes the Clinical Risk Grouper developed by 3M Health Information Systems<sup>7</sup>, for stratification of clinical risk. Clinical risk then becomes one of the ingredients in the generation of an Impactability Score as described elsewhere.<sup>8</sup> One could think of it as a type of “rising risk” indicator, but more accurately, “rising risk” where we have demonstrated our ability to mitigate that risk. As a result, it does not look for the highest cost or highest risk patients when targeting care management.

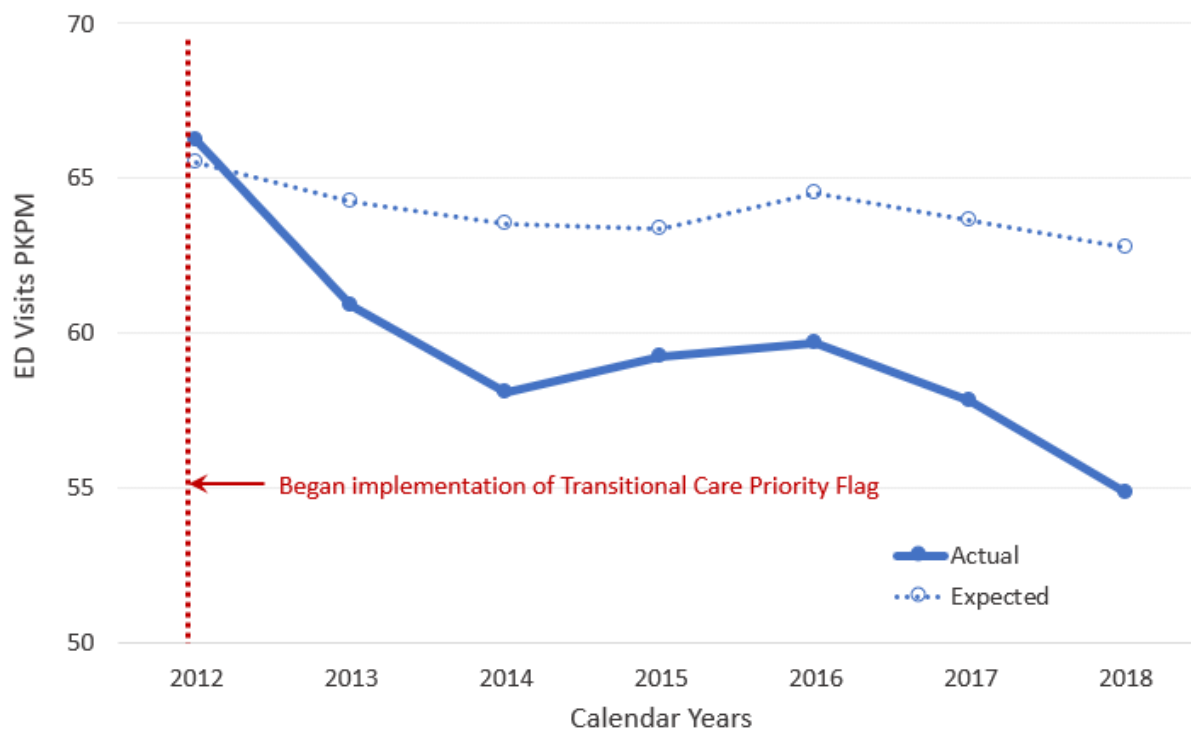
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Although the first Impactability Scores™ were not published until 2015, the precursor to the scores was the Transitional Care Priority flag, a priority indicator developed specifically for transitional care in 2012. That indicator came off the heels of the transitional care evaluation that found that CCNC's transitional care management had differential impacts across the risk-stratified population. It was one of the first studies to take the question from “does transitional care work” to “for whom does it work.”<sup>9</sup> Priority was given to clinical opportunities that would most likely yield a reduction in future admissions. In 2015 the Impactability Scores™ were launched, which took “Impactability” to the next level by incorporating the estimated dollar savings into the prioritization, thus ensuring that those clinical opportunities with the greatest savings potential would be prioritized.

## Results

Although the care management interventions are focused on specific patients, the real test of the effectiveness of the approach would be based on the overall impact of the population – assuming we targeted those who would benefit most, then we should see a measurable difference over time for the entire enrolled population. For this, we used the key performance indicators which CCNC began reporting on in 2014. For each key metric, we reported two numbers: 1) an actual rate observed during the report period for the population as a whole, and 2) an expected rate which is a risk-adjusted estimate based on the clinical case mix of the current population (i.e., as the enrolled population gets sicker or healthier, the expected value goes up or down). See the Methodology section for more details.

Figure 1: Impact of CCNC on ED Utilization from 2012-2018

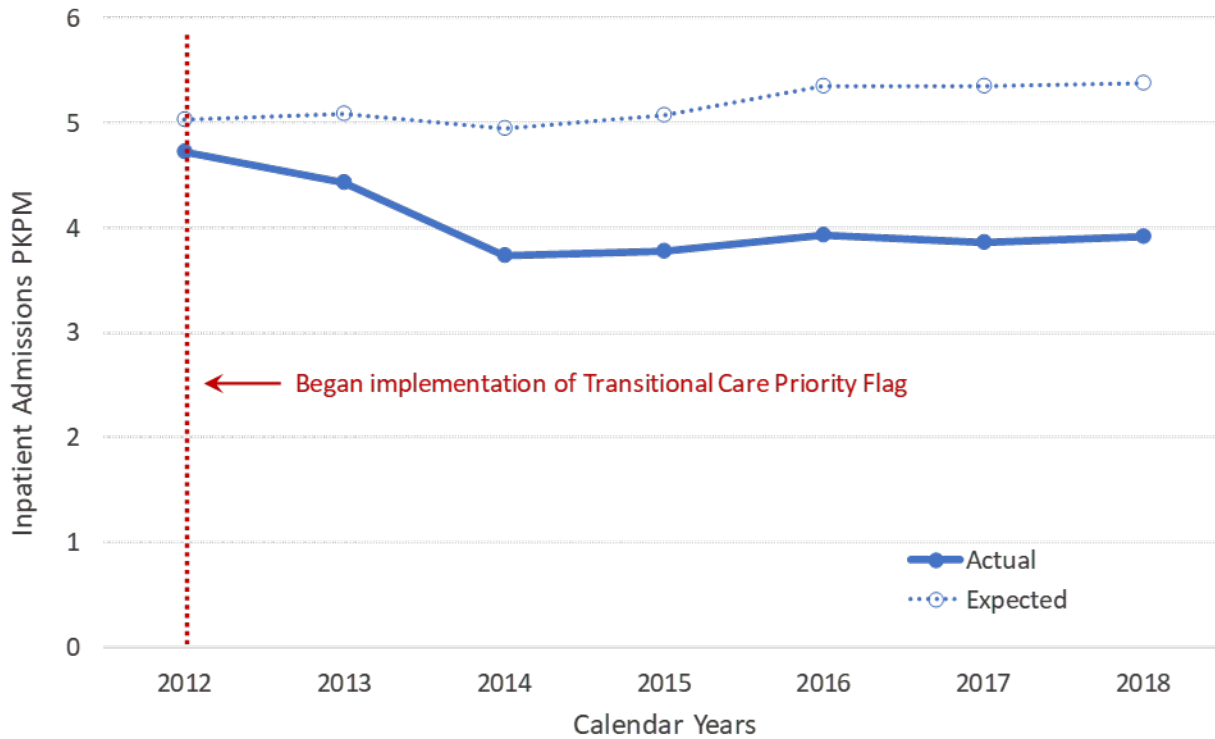


\*PKPM = per thousand member months

\*\*The “Expected” value is a measure of the number of ED visits that would have been expected without intervention, risk-adjusted to account for the case mix during that period.

As demonstrated by Figure 1, the overall ED utilization has dropped consistently since 2012, relative to a risk-adjusted expected rate. Although the Transitional Care Priority flag was focused on inpatient discharges, it’s not unreasonable to expect some additional impact on future ED visits as well. In the most recent period, CCNC enrollees experienced 54.9 ED visits for every 1,000 member months; this same population in 2012 would have had an estimated 62.8 ED visits for every 1,000 member months, and so are currently utilizing the emergency room **12.6% below expected**.

Figure 2: Impact of CCNC on Inpatient Utilization from 2012-2018

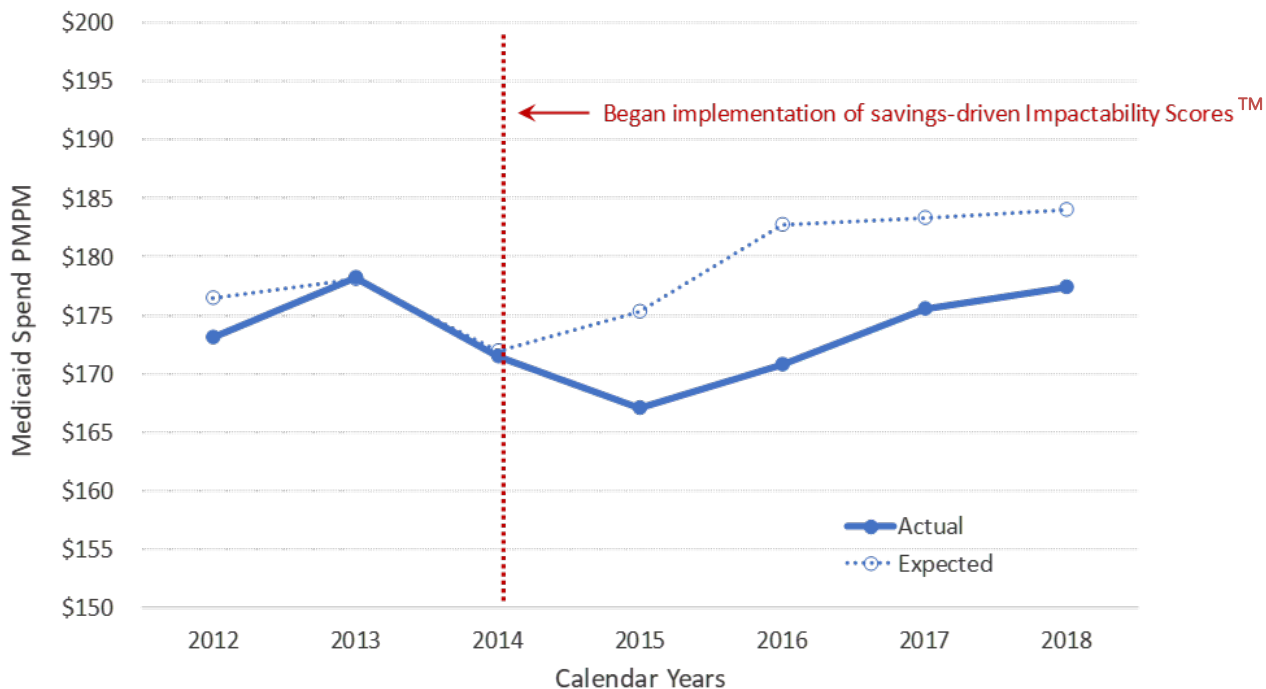


\*PKPM = per thousand member months

\*\*The “Expected” value is a measure of the number of inpatient admissions that would have been expected without intervention, risk-adjusted to account for the case mix during that period.

As demonstrated by Figure 2, the overall inpatient utilization dropped significantly in the first 3 years of the implementation of the Transitional Care Priority flag, and has maintained that exceptional rate ever since, relative to a risk-adjusted expected rate. It should be noted that except for behavioral health admissions and admissions for pregnant women, these rates include all inpatient admissions, regardless of whether they might be considered preventable or non-preventable. Hence, it’s reasonable to expect there to be some base level of inpatient utilization as just a function of the health of the population. We were able to remove approximately 1/4th of the inpatient admissions that would have occurred otherwise, likely most of those admits that might be considered preventable. In the most recent period, CCNC enrollees experienced 3.9 inpatient admissions for every 1,000 member months; this same population in 2012 would have had an estimated 5.4 inpatient admissions for every 1,000 member months, and so are currently experiencing **27.2% fewer inpatient admissions compared to expected**.

Figure 3: Impact of CCNC on Total Medicaid Spend from 2012-2018



\*PKPM = per thousand member months

\*\*The “Expected” value is a measure of the number of inpatient admissions that would have been expected without intervention, risk-adjusted to account for the case mix during that period.

As demonstrated by Figure 3, the total Medicaid spend per member per month didn’t start dropping significantly until we began implementing the scores that were keyed directly to estimated cost-savings, and have maintained that exceptional rate ever since, relative to a risk-adjusted expected rate. In the most recent period, CCNC enrollees incurred \$177.34 in Medicaid spend per member month; this same population in 2012 would have incurred an estimated \$183.96 per member month, and so are currently spending **3.6% less than would be expected**.

And, the effectiveness of CCNC’s Impactability Scores™ are not applicable to just the Medicaid population. There have so far been two case-controlled evaluations demonstrating a significantly positive ROI when CCNC has managed a Medicare population.<sup>4</sup> 10 More recently, an MSSP ACO was able to achieve substantial shared savings using our analytic tools to guide their interventions.<sup>11</sup> It’s possible they could also generalize to commercial populations, though that has not been tested yet.

A discussion of CCNC’s effectiveness would be incomplete without acknowledging the strong primary care foundation and community partnerships that have been critical for achieving the outcomes

reported here. Absent robust access and preventive efforts at the primary care level, care managers would not be able to focus their energies on those patients who need extra attention and intervention outside of the typical office visit. Equally important are the formidable partnerships with community agencies who help to serve as a safety net for patients with social determinants of health. North Carolina has been applauded for its support of strong partnerships and encouraging community solutions to some of these larger issues. Of note are the Healthy Opportunities pilots, which the NC DHHS has rolled out for addressing these needs in our communities. North Carolina continues to be a model for other states for how to create an environment that fosters collaboration to help meet the needs of the most vulnerable patients.

**A discussion of CCNC's effectiveness would be incomplete without acknowledging the strong primary care foundation and community partnerships that have been critical for achieving the outcomes reported here.**

## Methodology

**Overview.** This brief reported on the following 3 key performance indicators: total Medicaid spend per member per month, emergency department visits per thousand member months, and inpatient admissions per thousand member months. In addition to reporting on the actual rates, we provide a benchmark for what would be expected given the case mix of the population we are serving during each report period. Rates are reported at the overall program level.

**Total Medicaid Spend.** Although the total Medicaid spend is intended to capture total cost of care for CCNC's enrollees, there are some categories of spending for which we cannot accurately report. Specifically, we exclude capitation fees paid to Behavioral Health Managed Care Organizations for management of behavioral health services and pre-rebate pharmacy spend. We do not exclude these categories because we don't think we influence them. Rather, we exclude them because the available data do not allow us to make accurate assessments of the true spend. In addition to these two spending categories, we also exclude management fees paid to CCNC Networks and Practices, capitation payments for PACE providers, and capitation payments to MedSolutions. Following the method used in Medicare Shared Savings programs, we capped total spend at the 99th percentile by program category (separately for ABD and non-ABD enrollees).

**ED Visits.** All ED visits are included except for behavioral health ED visits, which have been removed from all reporting years for all patients remaining in the denominator. ED visits that happened on the same day for the same patient were counted separately.

**Inpatient Admissions.** Inpatient admissions include all acute inpatient visits except for those incurred by women who delivered during the reporting year. Women who deliver during the reporting year are removed from that year for the inpatient admission measures only. Additionally, all behavioral health

inpatient admissions are removed from all reporting years for all patients remaining in the denominator. Same-day transfers are not counted as a new inpatient admission.

**Methodology for Calculating Expected Benchmarks.** Non-dual Medicaid enrollees are assigned to Clinical Risk Groups (CRG) via 3M™ Health Information Systems Clinical Risk Grouper. CRG's take all available claims data during a given one-year period and assign individuals to one of 1,075 mutually exclusive groups characterized by number and type of chronic conditions and associated severity. CRG's allow CCNC to make more equivalent comparisons between clinically similar patients. Resource intensity weights are generated at the CRG/age/gender level based on the average spend among all Non-dual Medicaid eligibles during a baseline period (calendar year 2012), resulting in approximately 15,000 unique risk-stratification cells. Once individual weights are calculated, we apply them to the enrollees within any given reporting period and aggregate up to the program level for an estimate of case mix expressed as a number, where 1.0 is equivalent to the case mix for all Non-dual Medicaid beneficiaries in CY2012 (with higher numbers reflecting greater clinical complexity). This case mix index is then multiplied by the average Medicaid spend for all Non-dual Medicaid beneficiaries in CY2012 to arrive at an expected value for a particular reporting period. Note, the expected values are not adjusted for inflation. A similar approach is taken for calculating utilization benchmarks. However, because utilization occurs at a relatively low rate when looking at the population as a whole, we extended the baseline period to include both CY2011 and CY2012, providing us with two years of data for generating more reliable estimates of benchmark utilization.

## Conclusion

Recent studies have raised concerns about whether focusing care management programs on the highest cost and highest risk patients are effective.<sup>12-13</sup> CCNC has taken a more targeted approach by looking for clinical opportunities where our data has shown our interventions to have measurable impact, controlling for regression to the mean. Our unique approach of using Impactability Scores™, coupled with the strong primary care base and local care management infrastructure in NC, has continued to allow CCNC to make a significant impact on the cost and utilization of Medicaid patients enrolled in the primary care medical home program. Future innovations in North Carolina Medicaid, such as investments in addressing social determinants of health, will only add to the impact that CCNC continues to have on the population.

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## Suggested Citation

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