

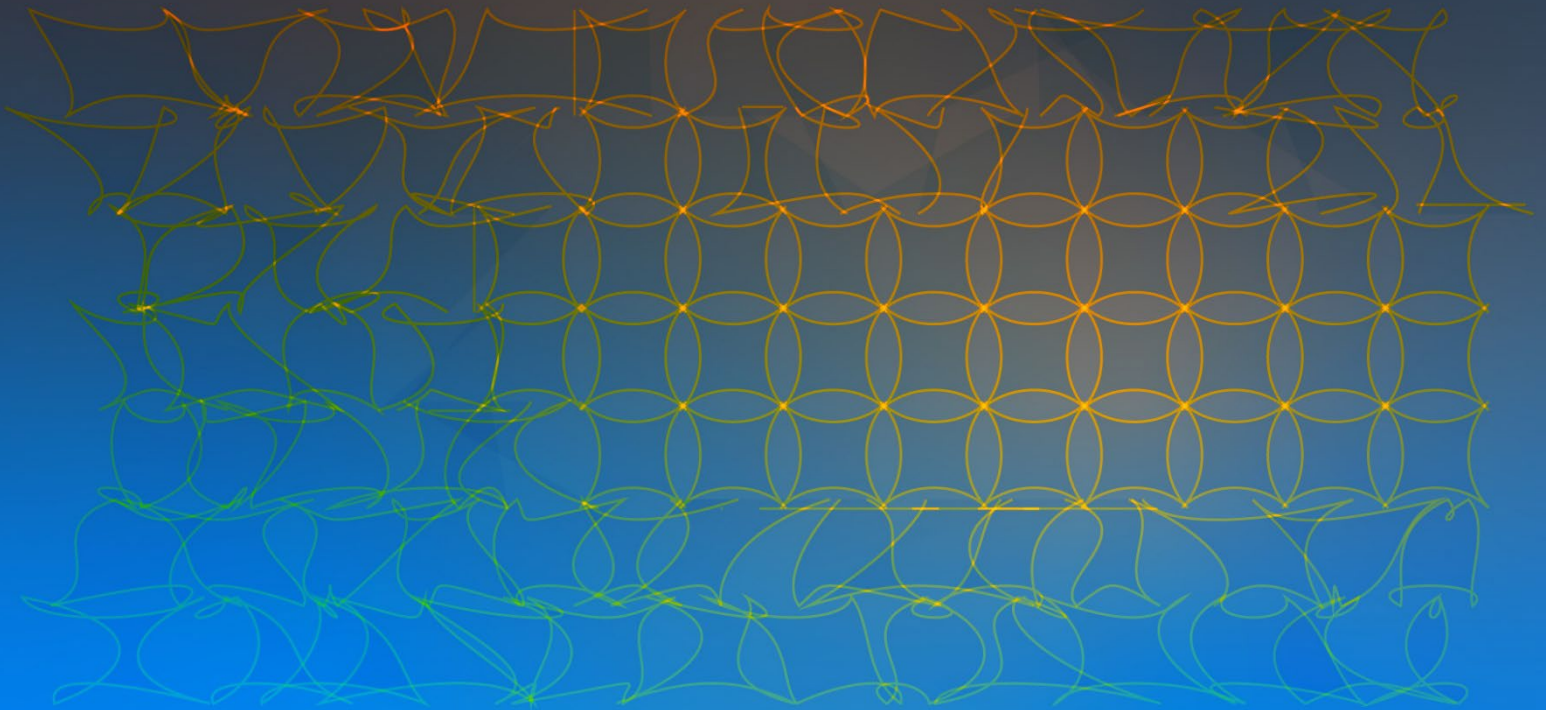
MILLIMAN CLIENT REPORT

# Independent Review of Wider Circle's Methodology for Quantifying Financial and Healthcare Utilization Impact of the Connect for Life Program

Commissioned by Wider Circle

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## Executive summary

Wider Circle developed a methodology to quantify the potential impacts of its Connect for Life (CFL) community care program. Wider Circle engaged Milliman to conduct a review of this methodology to determine the appropriateness of this methodology for achieving Wider Circle's stated purpose. This report:

- 1) describes Wider Circle's CFL community care program,
- 2) outlines Wider Circle's approach to quantifying the impacts of their program,
- 3) discusses some potential limitations of the approaches used by Wider Circle, and
- 4) outlines important caveats and limitations of Milliman's review of Wider Circle's methodology.

This report is intended to provide feedback on the actuarial appropriateness of Wider Circle's methodology for quantifying program impact as it was presented to Milliman and may not be appropriate and should not be used for any other purpose. Actual experience may differ from historical experience, and the results for any particular CFL customer may be unique to the characteristics of that customer, point in time, and other factors not considered in this assessment. We are only commenting on the general approaches provided to us by Wider Circle for calculating estimated impacts attributable to the CFL program offerings. This information does not constitute an endorsement or recommendation of the CFL program, nor does it quantify the value of the CFL program in aggregate or for any specific group or individual historically or in the future.

Overall, we conclude that the methodology Wider Circle uses to quantify the potential impact of its CFL program is reasonable and appropriate, in terms of approach and assumptions used, for its intended use. Wider Circle's approaches for quantifying impact are consistent with typical actuarial practices.

Any reader of this report must possess a certain level of expertise in areas relevant to this analysis to evaluate the significance and reasonability of the assumptions and the effect of these assumptions on the results. We recommend that all parties be aided by their own actuary or other qualified professional when reviewing this report.

## Background

According to information provided by Wider Circle, the company offers a community-focused care management program that builds a trusted network of plan members to drive better health outcomes. Through the development of these community networks of members, the Wider Circle CFL program intends to improve social determinants of health, drive higher preventative care engagement and retention, and help its members navigate the complex healthcare system.

To quantify the estimated impacts of its CFL program, Wider Circle compares cost and utilization metrics for a cohort of members enrolled in the CFL program against a control group, both developed from an existing customer's healthcare claims data. A propensity-matching<sup>1</sup> process is developed to select the enrolled (case) group and the control group using various demographic, risk, cost, and utilization measures. Statistically significant differences of these measures between the groups in the period following CFL enrollment are used to develop average per-engaged member per-month (PEMPM) effects.

The scope of this report is limited to the methodology to quantify healthcare cost and utilization impacts only. There may be other methodologies to estimate benefits or drawbacks of the CFL program and other Wider Circle programs which are outside the scope of this report.

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<sup>1</sup> <https://www.publichealth.columbia.edu/research/population-health-methods/propensity-score-analysis>

# Overview and assessment of Wider Circle's CFL program impact methodology

## Methodology overview

Wider Circle's CFL program impact methodology is intended to be used to estimate the program effect (measured in terms of healthcare cost and utilization and clinical outcome or quality measures, when available) for an average member enrolled in CFL compared to a propensity-matched control population. The methodology used to determine the control group is summarized below:

- With an existing CFL customer's member and claims data, identify members eligible for the CFL enrolled (case) group and members eligible for the control group. To become enrolled, a member must first become engaged by attending a CFL event or interacting with a Wider Circle CFL staff member. Once this engaged member completes the CFL Onboarding (a set of 4-6 specific activities intended to introduce a member to the program), this member is considered an enrolled member. All members who were eligible for the CFL program but were not engaged or enrolled in the program are considered for the control group. Any members that started but did not finish CFL Onboarding are excluded from both case and control groups.
- For the control group, gather member data by creating rolling 12-month periods for each member – for example, a member's data from January 2021 through December 2021 and that same member's data from February 2021 through January 2022 would be separate records, each of which are eligible to be matched as a control, so that time periods match more closely between controls and cases. For the enrolled (case) group, gather member data for the 12-month period before their enrollment date.
- Prepare the claims data by verifying data quality (through Wider Circle's defined methods including identifying missing data and ensuring fields match standard codes) and removing claims that may lead to bias in the results, such as COVID-19 or accident/violence-related claims. Apply outlier handling logic which may include a three-standard-deviation winsorization (replace values above three standard deviations above the mean with the value at three standard deviations above the mean) on paid amounts or allowed amounts when available.
- Assemble the list of variables to be used for matching. These will always include:
  - age
  - gender
  - race, ethnicity, or primary language
  - risk adjustment factor score
  - health plan name or type
  - region (state, county, or city)
  - time in plan
  - baseline utilization measures of number of claims, number of inpatient claims, number of emergency department visits, number of primary care provider (PCP) visits, and total cost of care
- Using the *MatchIt* package in R, implement a propensity-score matching algorithm to assign a single control to each treatment member without replacement. After matching, assess match quality via statistical significance tests for each matched variable to confirm that there are not significant differences between groups.
- If match quality is poor (i.e., there are statistically significant differences in matching variables between the case and control populations), Wider Circle may employ a variety of adjustments, such as removing the case and associated control from the study, altering matching parameters, filtering out members with specific health conditions, or forcing an exact match on categorical covariates. In these circumstances Wider Circle will demonstrate that there were shortcomings in the matching step necessitating the methodology adjustments. Wider Circle customers should carefully consider whether the adjustments made to the methodology are appropriate and reasonable. Wider Circle will disclose any matches with significant differences between the enrolled and control groups and adjustments performed to improve matching and will not weaken the match quality to achieve more significant results alone.

- Once a match is produced, each control group member inherits the enrollment date of their enrolled group counterpart, and statistical tests are performed to determine if significant differences in cost and utilization exist between the two groups in the 12-month post-enrollment period. Wider Circle attributes its CFL program's impact to statistically significant difference in differences in average costs and utilization between the pre-enrollment and post-enrollment periods for cases compared to controls. Wider Circle will disclose all statistically significant results at the 95% confidence level and marginally significant results as low as the 80% confidence level, even those that correspond to negative impacts of the CFL program. Wider Circle also applies the Bonferroni correction<sup>2</sup> to significance levels used to mitigate the multiple comparisons issue.

Wider Circle has retained flexibility in approach for components of the methodology where an alternative technique may be used as Wider Circle feels appropriate – for instance, parameter adjustments to improve match quality, the method of handling missing fields on data, or other adjustments that may depend on the specific customer data used or hypothesis of interest. As these decisions cannot be enumerated, we are unable to comment on the appropriateness of the specific methodology used for any particular customer or study, only on the general methodology outlined above. Any reader of this report must possess a certain level of expertise in areas relevant to this analysis to evaluate the significance and reasonability of the assumptions and methodology adjustments and the effect of these assumptions and methodology adjustments on the results. We recommend that all parties be aided by their own actuary or other qualified professional when reviewing this report or evaluating the applicability of the Wider Circle program offerings to their own situation.

## Methodology assessment

We believe Wider Circle's methodology for estimating impacts of the CFL program are appropriate for its intended purpose. Notwithstanding this general conclusion, each customer or organization relying on Wider Circle's estimates should review the relevance and appropriateness of the assumptions used in Wider Circle's studies as it applies to each population of interest. Customer financial impacts within the methodology are based on allowed dollars and are not split between the payer, any employer group, and the member. Therefore, the impact for any one stakeholder may be overstated. When allowed dollars are unavailable, Wider Circle estimates impacts based on paid dollars which may underestimate the complete impact. Parties relying on Wider Circle's estimates from the CFL impact estimation methodology should consider the extent to which benefit design, retention, and other contractual terms affect their modeled impacts.

There are several possible limitations that should be considered by any party that relies on results produced by Wider Circle's CFL impact estimation. These limitations include, but are not limited to:

1. **Selection bias due to voluntary participation in a care management program.** It is generally the case that individuals who opt to participate in a care management program have behaviors and clinical risk that differ materially from individuals who do not<sup>3,4</sup>. This selection bias could result in higher or lower expected costs and utilization compared to average overall population costs and utilization. The propensity-matching process attempts to control for this bias, but it is impossible to control for completely.
  - a. For example, if individuals who opt into the CFL program are more willing to engage in activities that will improve their healthcare outcomes and have been taking steps to manage their own care in the absence of the CFL program, this could drive a reduction in baseline healthcare costs that is difficult to control for in a program impact methodology (thus overstating the impact of the CFL interventions).
  - b. For another example, if individuals who opt into the CFL program are drawn to participate due to their higher level of clinical risk or difficulty managing their own care or costs due to its complicated

<sup>2</sup> <https://pubmed.ncbi.nlm.nih.gov/24697967/>

<sup>3</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3760982/>

<sup>4</sup> <https://academic.oup.com/jrssa/article/183/1/3/7056419>

nature, this could drive an increase in baseline healthcare costs that is difficult to control for in a program impact methodology (thus understating the impact of the CFL interventions).

- c. There is no adjustment for or consideration of other care management programs that may influence cost and utilization in the baseline period or the performance period.
2. **Plausibility and attribution of results.** Many factors impact healthcare costs, utilization, and outcomes, and impacts may not be fully attributable to the CFL interventions. For that reason, program impact estimates should be evaluated alongside other metrics to help validate the plausibility of results.
  3. **Statistical credibility.** The size of the member population whose CFL impacts are being estimated can affect the potential for statistically significant results. Smaller populations are likely to have higher volatility within each metric and will likely require a larger average impact to each metric in order to detect the impact with statistical significance. In order to reduce volatility and increase the potential for statistically significant results, Wider Circle considers narrowing the study to specific subpopulations based on demographics or diagnosis. While these alternative approaches are reasonable, the relevance of the study conclusions to the customer's population should be carefully considered.
  4. **Non-normalized and restrictive matching.** Matching is performed on raw, non-normalized metrics to minimize distance, but matched differences are restricted to a maximum of 0.25 standard deviations for each metric. Using non-normalized metrics when matching means that a \$1 total cost of care difference has the same impact in a matching decision as a one claim, one age year, or one risk score unit difference. This will dampen the matching influence of variables that have a smaller range. Restricting the case-control difference each matched variable to a maximum of 0.25 standard deviations may result in considerable drop off of matched member volumes when compared to the pre-matched population. Customers should consider how representative the included matched population is of the population of interest.
  5. **Variation in methodology.** We reviewed the general default methodology for quantifying healthcare cost and utilization impacts of the CFL program. The methodology may be modified based on the customer data used or hypothesis of interest. Modifications can include, but are not limited to, removing biased claims, excluding members with certain health conditions, handling outliers or missing data, adding other covariates, using surrogate variables for covariates, adjusting the time period studied, using paid amounts when allowed amounts are unavailable, increasing the number of controls beyond one per case, or adjusting matching parameters.
    - a. Wider Circle's most common adjustment to the methodology is to adjust matching parameters to improve the overall match quality. This adjustment needs to be balanced against the extent to which improving match quality excludes members from the study.
    - b. The second most common adjustment to the methodology is altering the specific technique to handle missing data. The default method is to exclude a member from the study if a necessary field is not populated for that member. If more than 10% of the population has missing data, the field with missing data may be removed from the matching process, replaced with proxy variables (i.e. using city instead of region), or imputing numeric data with the mean or median of the field. These adjustments have potential drawbacks:
      - i. The incidence of missing data may be biased toward certain members and excluding up to 10% of a population could bias the study outcome with results that are not representative of the entire study population.
      - ii. Imputing numeric values with the mean or median may improve or diminish the likelihood a treatment member is matched to the most similar control group member which can affect the statistical significance of differences in differences between the cases and controls as well as the magnitude of the differences themselves.

Wider Circle will disclose and justify any methodology adjustments used in a study. We have not reviewed the entire range of these methodology variations and our opinion of the methodology's appropriateness is



limited to the default assumptions and methods outlined above. Adjusting the methodology could permit Wider Circle to make changes that influence the results in a way that show CFL in a more positive light, intentionally or unintentionally. Any party relying on Wider Circle's results should review any adjustments on a study-by-study basis to assess their appropriateness, both for validity of the study and for whether the study is still applicable for the party's population of interest after these adjustments. Interested parties should also understand that results from different Wider Circle studies may not be comparable due to methodology changes or differences between the customer data used for each study. We have not reviewed any particular study result and make no comment on the appropriateness of any adjustments (or lack thereof) in the methodology for any given study.

## Caveats, limitations, and qualifications

Austin Barrington and Adrian Clark are members of the American Academy of Actuaries and meet the qualification standards to render the actuarial opinion contained herein. To the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices.

This report is intended to provide our evaluation of the Wider Circle methodology for quantifying the healthcare cost and utilization impacts of their CFL program. It may not be appropriate, and should not be used, for other purposes. We did not assess the effectiveness or impact of Wider Circle's CFL program and makes no opinions about the effectiveness or impact of this program.

If distributed to third parties, the report must be shared in its entirety. We do not intend this information to benefit, or create a legal liability to, any third party, even if we permit the distribution of our work product to such third party. Those reviewing Wider Circle's calculations should take full responsibility for interpreting the results, which should be reviewed by someone knowledgeable in the areas of healthcare data and impact calculations.

This report is subject to the terms and conditions of the Consulting Services Agreement between Wider Circle and Milliman dated November 11, 2022. We understand that Wider Circle intends to provide public access to this report through an internet link, and therefore it could be viewed by its prospective customers, competitors, potential investors, or other interested parties. We consent to this distribution if the work is distributed in its entirety. Milliman does not intend to benefit and assumes no duty or liability to other parties who review this work.

In completing this review, we relied on information provided by Wider Circle, which we reviewed for reasonableness, but accepted without audit. If any of this information is inaccurate or incomplete, the contents of this report along with many of our conclusions may likewise be inaccurate or incomplete. This review incorporates Milliman's experience in working with similar programs that rely on administrative claims data. Wider Circle customers' actual results may differ from modeled projections due to factors such as population health status, reimbursement levels, delivery systems, changes in Wider Circle's programs, changing regulations, and random variation. It is important that Wider Circle and Wider Circle's customers monitor actual experience and make adjustments to assumptions, as appropriate.

While we find the methodology appropriate, all methodologies, algorithms, and formulas are by nature assumption driven. We are not commenting on the assumptions chosen for any particular calculation of CFL impacts performed for any Wider Circle customer. No attempts to replicate the Wider Circle assumptions, recalculate results, test for potential omissions, weaknesses, or biases were made. Furthermore, we did not review Wider Circle's specific care management activities or whether those activities would produce results to demonstrate a causal relationship between care management activities and resulting cost and utilization impacts.



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