A Multi-Payer Analysis of Health Care Spending in North Carolina

Frequently Asked Questions

V1.1

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General Questions

What is an APCD (All-Payer Claims Database)? Are you using an APCD?

APCDs are large-scale databases that systematically collect health care claims data from a variety of payer sources from most health care providers. They are used to trend analysis, providing meaningful information for policymakers, consumers, employers, providers, researchers and other stakeholders. Unlike an APCD which systematically collects and standardizes claim-level data, this analysis coordinated a distributed aggregation among three collaborators: The Health Care Cost Institute, Duke University, and BlueCross NC. This approach circumvented the need to centralize and share claims-level data, but still allowed us to produce a robust analysis on health care spending in the state.

What payers were included in this analysis?

The payers whose claims were used in this analysis include two government payers: 1) the federally administered Medicare program which primarily serves people 65 and older as well as some people qualifying based on disability or those with end-stage renal disease, and 2) North Carolina Medicaid which serves low-income adults, children, pregnant women and women receiving postpartum care, refugees, and people with disabilities. This analysis uses data from four commercial insurers: BlueCross NC, UnitedHealth Group, Humana and Aetna. The data from commercial insurers specifically covers those who either 1) receive insurance coverage through jobs, also known as employer-sponsored insurance (ESI), or 2) receive coverage from a Medicare Advantage plan, an optional program for Medicare eligible beneficiaries that is funded by Medicare but administered by commercial insurers.

Why did you use data from 2016 and 2017?

We pooled two years of data to ensure enough data was available to report detailed spending categories. Dollars from 2016 were inflated to 2017 dollars to help adjust for the long study window. As such, this analysis best represents estimations of spending at a single point in time and does not function as a report of growth in spending over time.

We used 2016 and 2017 data for this report because claims data will often require at least a year to ensure data maturity in addition to the time needed for proper data cleaning, with some contributors requiring more time to process and clean data.

What does "spending" mean? What is "average annual spending per-person"?

"Spending" refers to the amount paid for services; it is the sum of the amount the insurer paid and the copayment or cost-sharing amount for which the insured is responsible for paying. This definition of spending does not include premiums paid by the insured. Spending per-person is the sum of all spending divided by the number of people, which allows for the comparison of spending across different categories, adjusting for the relative size of a population. Since we use two years' worth of spending data, "average annual spending per-person" is used in this analysis to describe the single year equivalent of spending per person; it is essentially the study's total spending per-person, divided by two.

I'm a data nerd, where can I find the data used to create this analysis?

To encourage transparency and future research, we've released all the aggregated data from this project. The data used to generate the interactive dashboard can be found [here](#).

We've also published downloadable files that contain more granular spending data (e.g. spending on hospice and skilled nursing facilities), as well as data on selected episodes (e.g. stroke, c-section delivery and vaginal delivery) and chronic conditions (e.g. diabetes and opioid use disorder), which can be found [here](#).

More information on the methodology for all the data can be found in the methodology document [here](#).

Population Questions

What is a "member"?

A "member" is a person insured by an insurance organization (i.e. they are a member of an insurance organization). In the context of this analysis, member and person may be used interchangeably since all the people in the study are insured.

What are "covered lives" and what are "annual covered lives"?

Our coverage data are based on enrollment counts from each of the data contributors. In any given month in 2016 or 2017 a person may be enrolled in an insurance plan, and this unit of measurement is known as a member month. A "covered life" is the yearly equivalent of the member month; a person with twelve months of coverage is equivalent to one covered life. This allows for the standardization of enrollment figures and accounts for people who disenroll or newly enroll in coverage during the study period.

Since our data includes two years, an "annual covered life" adjusts that count for a single year equivalent.

This analysis has just over six million annual covered lives, but there are just over 10 million people living in North Carolina. Who are the four million people not represented by the data?

While this analysis provides a comprehensive look at health care spending in North Carolina, it does not account for the total population of the state. It does not include spending and utilization among the uninsured population, those insured through the individual market, those enrolled in ESI administered by other issuers, members served on behalf of other Blues Plans (i.e. reciprocity members), other types of supplemental insurance, nor does it include those enrolled in Tricare or care delivered through the Veterans Administration (VA). Because these populations may be inherently different than the population included in this analysis, the findings may not be generalizable to the entire state of North Carolina.

Why don't you include the individual market data in your analysis?

Non-group plans, also known as the individual market, consist of plans offered through the Affordable Care Act's (ACA) health exchanges on HealthCare.gov, and plans sold off the exchange which include plans that are both ACA compliant and ACA non-compliant. Changes in health insurer's participation in the exchange marketplaces, and changes in regulations governing the ACA have resulted in a high level of volatility in the individual market from year to year. Given that we pool data over two years, we decided not to include an analysis of spending in the individual market to avoid mis-representing the current state of the individual marketplace.

People may change insurance over the two-year period. Where are they counted?

Since most insurers count enrollment in member months, generally, a person who switches insurance would have part of their member months accounted for by one insurer and the other part accounted for by the other insurer. For example, a person who is covered for 12 months by ESI in 2016 and then becomes covered for 12 months by Medicare in 2017 would have one ESI covered life for 2016 and one Medicare covered life for 2017. While we cannot link individuals across data sources, this structure ensures that individuals are not double counted within the study period. A notable exception are the people dually enrolled in Medicare and Medicaid. We were unable to match people across data sources, so a dually eligible member's enrollment is counted both in the Medicare data and in the Medicaid data. There are approximately 246,000 annual covered lives among the dually enrolled.

There seems to be some variation in gender and a lot of variation in age between the different payer groups. Is this expected?

Yes. Eligibility for enrollment in any of the payer groups is highly associated with age and health status; our data represents a fair distribution of the demographic profiles of beneficiaries in Medicare, Medicaid and ESI. Age distribution is largely a function of the eligibility criteria for the government funded insurance programs. We exclude people 65 and older from the ESI analysis as a matter of course; we exclude displaying data on children with Medicare to protect patient privacy given that there are very few children with Medicare.

I don't see any information on race or ethnicity among the study population. Why didn't you include it?

We believe the discussion of racial and ethnic disparities in access to care, utilization, and outcomes is one of the most important conversations to have when it comes discussing health care generally, and in the context of this analysis, health care spending specifically. Unfortunately, not all the data contributors readily collect information on race and ethnicity, and we were unable to use these demographic characteristics in our analysis.

While we cannot specifically link our analysis to the races and ethnicities of individuals in our study population, we provide a summary of the county-level demographic information from the 2018 American Communities Survey (ACS) to supplement the spending data, and provided it as an appendix in our downloadable data. More information about the ACS can be found here.

Spending Questions

What does "Total Spending" include?

"Total Spending" is the sum of all spending for all claims from our spending service categories: inpatient, outpatient, professional, and prescription drug.

What is included in each spending service category?

We include four broad spending service categories: inpatient, outpatient, professional, and prescription drug.

Inpatient applies to services rendered to patients who are kept in a health care facility overnight for treatment but not for observation. We include both acute inpatient stays and skilled nursing facility (SNF) stays and hospice spending in this category.

Outpatient applies to services rendered to patients by sections of a hospital that provide medical services not requiring an overnight stay or hospitalization. Examples include visits to the emergency room, outpatient facility spending, and observation stays among others.

Professional applies to services rendered to patients by a health care professional. These services include office visits, administered drugs, and behavioral health services among others.

Prescription drug spending includes payments made for drugs dispensed by retail and mail-order pharmacies.

A detailed list of the services included in each category is available in the methods document here.

How is average annual per-person spending by payer type calculated? How is average annual per-person spending by age calculated? How is average annual per-person spending by service category calculated?

For every sub-category of spending in this analysis, average annual per-person spending is the sum of spending for that category divided by the covered lives eligible to spend in that category. So, for example, the $15,670 average annual spending per-person in Medicare represents the sum of all Medicare spending divided by the total Medicare covered lives over a single year.

Note, our entire population is enrolled in medical coverage, which covers the inpatient, outpatient, and professional service categories; however, not all plans include prescription drug coverage. Calculations of per-person spending assumes that members without prescription drug coverage would spend the per-person average amount on prescription drugs. Caution should be used when trying to back-calculate figures from this presentation since some values for some individuals may be imputed. Source data are available in the accompanying public use files here.

Spending is related to age and gender. Are these spending metrics adjusted to account for those differences?

Yes, we adjusted for age and gender differences to facilitate comparison across geographic areas. Specifically, we calculated each gender-age group's share of medical and prescription drug coverage months for each payer type statewide. We then weighted the payer-type specific per-person spending in each county by the statewide share. We used the statewide share of medical coverage months for inpatient, outpatient, and professional services categories, and the statewide share of prescription drug coverage months for prescription drug spending. This results in a per-person

spending in each county that assumes a consistent age-gender composition within the payer type. To calculate average per-person spending across all payer-types, we weighted county per-person spending by the county share for the payer type before summing.

Spending is often contextualized in terms of price and utilization. Do you include any of these measures in addition to spending?

The data in this analysis only contains spending data. While spending is a function of price and utilization, among other factors, we cannot determine what combination of these factors influenced spending within this analysis. However, as part of this project, we were able to construct a set of sentinel episodes of care that help to frame spending in terms of utilization. These include caesarian section delivery, vaginal delivery, lower extremity joint replacement, and stroke, and can be found in the supplemental PUF files [here](#)**.** Our episodes aggregate all spending across inpatient, outpatient and professional services for members utilizing the index service in the episode. More information about the additional data can be found in the methods document [here](#).

Why is Medicare spending slightly higher in this analysis compared to figures publicly produced elsewhere?

This analysis used 100% of Medicare Part A, Part B and Part D claims for all beneficiaries residing in North Carolina enrolled in both Medicare Part A and Medicare Part B. We included all costs paid by Medicare as well as all costs paid by the beneficiary (including any costs the beneficiary is responsible for, but paid by a third party, such as a Medigap plan). Medicare spending in this analysis also includes certain "pass-through" payments made by Medicare to providers for things like direct medical education, kidney acquisition costs, and certain capital related costs. Additionally, we inflate 2016 claims to 2017 amounts and average spending over the two-year period. As such, this methodology may differ from other published sources of spending on Medicare in the state.

Geographic Distribution Questions

How are people assigned to a county?

Insured members with a ZIP code of "27XXX" or "28XXX" qualified as being a North Carolina resident and were included in the study. We assigned each insured member to one of North Carolina's 100 counties based on their county of residence in the first month in which they appear in the data and assigned them to that county for the duration of the study period. Members switching between the data contributors would potentially be reassigned to a new county based on the residence information of their first month in the new payer group's database.

Note that all spending in this analysis is attributed to the county of the member's residence.

What can this analysis tell me about spending relative to providers in an area?

Spending is not calculated by provider. Furthermore, spending in this analysis is based on where a person lives, not where they receive their care. This data should not be used to form conclusions about spending associated with specific providers or groups of providers.

Some data are missing in the county-level per-person health care spending dashboard. Why?

To ensure that individuals, providers, and payers were not identifiable in the public data, we do not report data where:

- Fewer than 11 unique individuals in the county had a claim for a service in the category.
- Fewer than 5 unique providers delivered a service in the category to patients in county.
- There was not a sufficient mix of payers in the county (for the employer-sponsored insurance and Medicare Advantage populations).

Why is average per-person spending significantly higher in some counties and significantly lower in other counties?

A variety of factors may contribute to a high or low spending in any region. For example, counties with a lower number of members may have some members who disproportionally impact average spending in that county. Prices for services may be higher or lower in one county compared to the average, utilization patters among members and providers may vary by region. Concentration of providers compared to the concentration of payers has also been shown to be related to health care prices. Additionally, while we do adjust spending for age and gender within payer groups, both the concentration of different types of payers and differing levels disease burden may vary by region and thus impact spending. Theses, as well as other factors, may impact spending, however, this analysis by itself is not equipped to explain the causes of spending variation.