

Chronic Disease Cost Calculator - Version 2 Top Frequently Asked Questions (FAQ)

1. What does the expanded Version 2 of the Chronic Disease Cost Calculator do?

The expanded Version 2 of the Chronic Disease Cost Calculator (henceforth Cost Calculator) is a downloadable tool that provides a fast, convenient, and reliable way to generate estimates of the economic burden of chronic diseases at the state and payer levels.

The Cost Calculator estimates state-level medical expenditures for the following chronic diseases: arthritis; asthma; cancer; cardiovascular diseases (CVD) including congestive heart failure (CHF), coronary heart disease (CHD), hypertension, stroke, and other heart diseases; depression; and diabetes. Medical expenditure estimates are provided for the entire state population (all payers and the uninsured) and separately for Medicaid, Medicare, and privately insured. The Cost Calculator also estimates state-level absenteeism costs for the above chronic diseases. It allows users to generate estimates of the costs of selected chronic diseases using customized inputs. Finally, it provides 10-year projections of the medical costs of chronic diseases.

Cost Calculator cost estimates reflect how much money major payers spend on a specific set of chronic diseases within a state in one year. The statistical analysis used to generate these estimates minimizes double-counting of costs across diseases, which often occurs in other cost estimates. For a detailed explanation of Cost Calculator methodology, refer to the *Cost Calculator Technical Appendix*.

2. Why are the Chronic Disease Cost Calculator estimates important?

These estimates provide vital information to better understand how pervasive these chronic diseases are and the cost burden they impose. Measures of economic burden, as provided by the Cost Calculator, are especially helpful for understanding the financial consequences of selected chronic diseases. Such information is essential for making informed investment decisions for chronic disease prevention, resource allocation, and disease management programs.

These estimates should not be viewed as “too high” or “too low.” Rather, they need to be taken in context by considering the overall health needs of the population and the degree to which those needs are being met. Further, medical spending and absenteeism, which are included in the Cost Calculator, are only a portion of the total cost burden of these chronic diseases. The Cost Calculator does not take into account other sources of economic burden such as lost economic productivity due to disability and premature death. Although these estimates represent only a portion of the total economic burden of these diseases, they provide crucial information to better understand the scope of the problem.

3. What is new in Version 2?

The following features are new for Version 2 of the Cost Calculator:

- Inclusion of asthma, arthritis and depression
- Estimates of the medical costs of the selected chronic diseases to Medicare, private insurance, and all payers combined (including other payers such as TRICARE, out-of-pocket, the uninsured, etc.)
- Estimates of state-level absenteeism costs for the selected chronic diseases
- Projections of estimates of the medical costs of selected chronic diseases in the near future.

4. What are the limitations of the Chronic Disease Cost Calculator?

All reported numbers are estimates and could differ from actual values. The Cost Calculator is designed to provide the best possible estimates given the data available on each state's allocation of medical resources for each of the 10 chronic diseases. The default data used by the Chronic Disease Cost Calculator have at least five limitations:

- 1) Medical Expenditure Panel Survey (MEPS) data used in the Cost Calculator are derived from household reports of medical care utilization. However, provider reported expenditure data are used extensively to supplement the data collected from households to improve accuracy.
- 2) The MEPS sample design excludes the institutionalized population (i.e., excludes expenditures associated with nursing home residents). Although National Nursing Home Survey data were used to adjust for long term care costs, these adjustments were based on data from 2004, which are older than the other data sources.
- 3) Although the overall sample size is reasonably large, the expenditure estimates are associated with uncertainty, and the variance in the estimates is greater for those diseases that are less prevalent in the population.
- 4) The changes in prescription costs caused by Medicare Part D are only partially captured in the Cost Calculator, because these changes were implemented in 2006 but Cost Calculator medical expense data spans from 2004-2008.
- 5) The cost projections do not reflect changes to the health care system that result from technological innovation, changes to the organization of healthcare provision, or recent health reform legislation such as the Affordable Care Act (PL 111-148). See question 13 for more detail on the cost projections.

5. Why could the Cost Calculator spending estimates be different than other chronic disease cost estimates?

There are several reasons why the Cost Calculator spending estimates may be different than other spending estimates that use different methodologies:

- The statistical analysis used by the Cost Calculator employs an econometric methodology that minimizes double-counting (i.e., overlap of disease costs) of medical expenditures going to multiple diseases. This can be especially important for the many categories of cardiovascular disease included in the Cost Calculator.
- The per person cost estimates are based on all persons receiving care for a disease within the interview year, rather than new diagnoses during the year, and include people at any stage of treatment. For example, cancer costs may appear low because they include both people in the acute phase of treatment and those receiving longer term follow-up.
- The Cost Calculator estimates expenditures among persons with the disease that are attributed to that disease. Other studies define disease cost by summing only claims with diagnosis codes for the disease or report all medical expenditures for persons with the disease, which can result in higher estimates.
- The Cost Calculator only estimates specific costs due to chronic diseases: medical costs and absenteeism costs (time away from paid work). Other costs of chronic diseases, including productivity losses through presenteeism (impaired productivity while at work, associated with future fair/poor general health), premature mortality, and reductions in the quality of life, are not included in the estimates.
- The default Cost Calculator estimates are also based on nationally representative data, not state-specific disease data. Further, some estimates may be using data from different years. Users can incorporate more geographically specific or current inputs in the Cost Calculator.

There are additional reasons spending estimates for the Medicaid population in particular might be lower than one might assume:

- Treated population estimates for the Medicaid population may appear lower than expected because the majority of Medicaid beneficiaries are age 18 and under (51%), almost double the proportion found within the general population, and with the exception of asthma and depression these chronic diseases are far less prevalent in this younger population. Because of this, Medicaid costs may be lower than one would assume.
- The majority of Medicaid beneficiaries receiving treatment for any of these 10 chronic diseases are dually eligible for Medicare coverage. The Medicaid expenditure estimates in the Cost Calculator only include the Medicaid portion of spending for dual eligibles and do not include Medicare expenditures. Medicare is the primary payer for most services for dually eligible beneficiaries.

6. What if there are discrepancies between the Cost Calculator estimates and other Medicaid and/or Medicare estimates?

The Cost Calculator provides consistent estimates of state Medicaid and Medicare chronic disease expenditures for all states using a single methodology and common set of databases.

Cost Calculator estimates may differ from other state Medicaid and Medicare estimates for several reasons:

- Differences in the type of data (e.g., survey vs. administrative).
- Definition of the chronic disease treated population.
- Methodology to attribute costs to diseases (e.g., accounting vs. regression).
- Differences in the time period of the data. Estimated spending in the Cost Calculator is based on 2004-2008 data inflated forward to 2010 dollars.
- All estimates involve some uncertainty. Although estimates in the Cost Calculator may appear different from other estimates, they may not be statistically significant differences.

However, when discrepancies occur, users should contact the state Medicaid department and state health department to help determine which set of data and modeling assumptions are most appropriate in the given situation.

7. Because hypertension and diabetes are both diseases themselves and also risk factors for other diseases, do they present any issues for the Cost Calculator?

Given that both hypertension and diabetes are themselves diseases that require treatment as well as leading causes of other diseases in the Calculator, these cost estimates include expenditures for the diseases for which they are risk factors. As a result, when summing the costs of hypertension and/or diabetes with the costs of other cardiovascular diseases, a small amount of double-counting will occur. The Cost Calculator provides estimates for “Diseases of the Heart” and “Total CVD” that avoid double-counting of costs across diseases. The costs for “Diseases of the Heart” include CHD, CHF, and other heart disease. The costs for “Total CVD” include “Diseases of the Heart,” stroke, and an estimate of hypertension costs that avoids double-counting of costs with other diseases. If users are interested in an estimate of the medical cost of hypertension and diabetes net of any attributable downstream costs, we found in our analysis for the default estimates, that excluding the costs of complications lowers the estimates for hypertension and diabetes by approximately 34% and 39%, respectively.

8. Can the Cost Calculator be used to compare my state with other states or the nation? My state has higher/lower medical spending than other states. Why?

The Cost Calculator was not designed to make statistical comparisons between states or between a state and the national estimate. In addition, summing the costs across states does not provide an accurate national estimate.

The primary factors that influence a state’s total estimated cost for each disease are the treated population for these diseases in the population and variables specific to each insurance program, including the number of people served, the age distribution of the payer’s population, eligibility criteria, and services covered. Cost Calculator estimates are

a reflection of services and treatment provided according to self-reports and do not necessarily capture the full burden of disease or the need for services among this population.

9. Why are estimates not provided by sex by age?

Estimates by sex by age are not provided because of small sample sizes in the source data. Where sample sizes permit, we report treated population and costs *separately* by sex and by age group.

10. What kind of guidance or technical support is available?

Directions for use are available at the Cost Calculator website (www.cdc.gov/nccdphp/resources/calculator.htm) and through help buttons on the Cost Calculator itself. The *User Guide* and the *Technical Appendix* both provide guidance on the Cost Calculator. In addition, technical support can be requested at the website or at the following email address: cdc Cost Calculator@cdc.gov.

11. What is “treated population” for each disease and how does it differ from disease prevalence?

Treated population is defined as the number of people receiving care for the disease in the previous year. MEPS treated population is based on a **shorter time frame (one year)** than self-reported disease prevalence estimates like the Behavioral Risk Factor Surveillance System, which assesses if the person **has ever been diagnosed** with the disease. Therefore, the Cost Calculator-estimated proportion of the population that is considered to be the “treated population” for a given disease is likely to be smaller than disease prevalence estimates.

12. What are the cost projections based on, what can they be used for, and what are their limitations?

The Medical Cost Projections allow users to view projections of the direct medical costs of the selected chronic diseases to all payers combined for each year from 2010 through 2020. The projections are estimates based on default inputs and real 2010 dollars, inflated by 3.6% each year to estimate the average annual growth in per-person medical costs. The projections also incorporate the anticipated demographic changes to the U.S. and state populations. The projections do not reflect changes to the health care system that result from technological innovation, changes to the organization of healthcare provision, or recent and future health reform legislation such as the Affordable Care Act (PL 111-148). They also do not include estimations of future lost productivity or other indirect costs of chronic disease.

In providing an idea of what future chronic disease costs could be, the cost projections have several uses. The projections can be useful for states in their Medicaid planning and

for other planning for future chronic disease cost growth. The projections show the impact of coming changes in population size and age and gender distributions on health care costs. Observed differences between Cost Calculator projections and future reported costs may be a useful starting point for research exploring chronic disease cost trends, though it should be stressed that the Cost Calculator itself will not provide any answers for this research, normative or otherwise.

Although the Cost Calculator cost projections are intended to be the best possible estimates, these projections incorporate many unavoidable uncertainties, and no one should rely on them as statements of certainty. As described elsewhere, the “current” calculated costs that the projections are based on themselves contain multiple estimations. All the limitations described above apply, including the fact that the projections are representative of the information we had available at the time of the analysis. Additionally, the cost projections are based on a status quo assumption and only reflect historical medical cost growth and demographic changes. Medical care practice will continue to change in ways both known (the scheduled rollout of the provisions of the Affordable Care Act) and unknown (dissemination of new technology, new modifications to care delivery systems). These changes will impact costs in ways not captured by the Calculator cost projections. Future demographic changes will also not be exactly like those currently predicted. For all of these reasons, as well as potential differences in underlying methodologies, future chronic disease medical costs recorded for states or the nation will vary from the projection numbers provided by the Calculator, and potentially by large amounts. Any differences between Calculator cost projections and future recorded medical costs are not by themselves necessarily good or bad, and should not be used to measure the success or failure of the U.S. healthcare system generally or chronic disease cost containment more specifically.