What tables and variables should I use from the Census and American Community Survey (ACS)?

The table below shows the table and variable names we recommend for calculating concentrated disadvantage. If you are using different tables or variables, please make a note when presenting your estimates.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Table(s)</th>
<th>Variable(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of individuals below the poverty line</td>
<td>S1702 - ACS; for 2010 estimate, use 5-year ACS ending in 2012; table indicates it is for families but variable description does not specify families; this is the table / variable we have been recommending</td>
<td>HC02_EST_VC01</td>
</tr>
<tr>
<td>Percent of individuals on public assistance</td>
<td>B09010 - for 2010 estimate, use 5-year ACS ending in 2012</td>
<td>HD01_VD02 - this count includes cash assistance, SSI and food stamps/SNAP; divide by HD01_VD01 to get percentage</td>
</tr>
<tr>
<td>Percent female-headed households</td>
<td>DP-1 - Census DP02 - ACS</td>
<td>HD02_S157 - Census HC03_VC11 - ACS</td>
</tr>
<tr>
<td>Percent unemployed</td>
<td>S2301 - ACS</td>
<td>HC04_EST_VC01</td>
</tr>
<tr>
<td>Percent less than age 18</td>
<td>S0101 - ACS</td>
<td>Total population under five yrs, HC01_EST_VC03; total population aged five to 14 years, HC01_EST_VC23; and the total population aged 15 to 17 years, HC01_EST_VC24. Each is the percent of population in the specified age group. The sum should give you the percent less than 18</td>
</tr>
<tr>
<td>Households with individuals &lt;18 years</td>
<td>DP-1 – Census DP02 - ACS</td>
<td>HD01_S152 - Census HC01_VC06 - ACS</td>
</tr>
</tbody>
</table>
Where can I get some help in calculating the standard deviation?

To calculate concentrated disadvantage (CD), you will need to calculate a standard deviation for each percent using the entire distribution of the percents (across all of the census tracts). You can use an excel function for standard deviation or you can calculate it in a statistics program like SAS, STATA, or SPSS. If you want to calculate it in steps, this is a quick primer on the formula that might be helpful – mathsisfun.com/data/standard-deviation-formulas.html

How is the Z-score calculated? Is it the percent for the indicator of interest (e.g., % below poverty)?

The equation to do the Z-score transformation is: \( Z = \frac{\text{score} - \text{mean}}{\text{standard deviation}} \). Calculate a z score for each of the five percents from the census data individually, and then average across the five z-scores to come up with the final z-score. It might be useful to do this in a spreadsheet or using a statistical program so you can track each step of the CD calculation.

What do you do with counties that have missing Z-scores because, for example, a value was suppressed in the table?

When calculating CD using census tract information, we recommend using the ACS five-year estimates in order to avoid missing data. If you are missing one or more of the five components of CD, you should exclude the census tract from the calculation. When you are missing data from suppression of values, it is helpful to examine the areas where there are missing data; they are often tracts that contain airports, open fields, or other places where no one actually lives. If this is the case, they can be excluded from the calculation but the county can be included if there are other census tracts with valid data. If you exclude census tracts because the denominator is zero or missing, you should not include the data for those census tracts in the numerator calculations.

Can you calculate concentrated disadvantage as a count/sum of the risks?

The original methodology for CD includes a more complicated process of identifying a large number of economic variables and conducting a factor analysis to see which factors are “loaded” then the CD is calculated for those variables as we put into the methodology; to create a more standard (and attainable) CD, we pre-selected five factors that were used most often and then followed the methodology of z-score transformation and using percentiles on the average score. There are other measures of disadvantage and deprivation that have been used. If you decide you want to do something different from the specified calculation, you certainly could, but you would need to note that it is no longer comparable to the methodology listed and would need to be interpreted differently (and not compared across states).

What should I include in my interpretation if I calculate concentrated disadvantage differently than what is recommended above?

As noted above, there are other methodologies for calculating measures of CD. If you use an alternate calculation from the one recommended in the narrative or use different tables or variables than described above, we recommend adding the following text to your interpretation: “While this indicator is similar to the Life Course Indicator Concentrated Disadvantage (LC-06), this indicator was calculated with the following modifications (list here) that deviate from the recommended methodology for the Life Course Indicator.”

How comparable are concentrated disadvantage estimates generated from different geographies?

In the indicator narrative, we note that even when you use the methodology outlined for your geography, the values for CD are only valid for that geography because the percentiles are developed internally. To truly compare CD across states, or across counties from different states, the percentiles would need to be established using the entire nation’s data; to date, we are not aware that anyone has completed this level of analysis. Therefore, estimates of CD generated across states should not be directly compared. In your interpretation, we recommend adding the following text: “While this indicator was calculated with the recommended methodology for the Life Course Indicator Concentrated Disadvantage
(LC-06), it should not be directly compared with Concentrated Disadvantage estimates from geographies outside of this state."

**Pulling tables from American FactFinder**

Go to American FactFinder ([factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml](http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml)), select “Advanced Search,” and search for the table name in the “topic or table name” box. When you get to a screen like that of Figure 1 below, select your desired geography from the menu on the left (see notes in Figure 2). Check the box next to the table you want, and then select download to get as zip file for the full set of census tracts. Figure 3 shows what an individual table looks like – you do not want to be copying these down one tract at a time.

**Figure 1. List of tables from America FactFinder**

![Image of American FactFinder screenshot showing search results for tables]

**Figure 2. Example of selecting census tract geography**

![Image of American FactFinder screenshot showing an example of selecting a census tract]
Figure 3. Example of a table for a single census tract

What are some ways that I can talk about concentrated disadvantage?
As a measure of community well-being, CD adds more information than looking at income rates. High CD is linked to low social capital. Communities with high CD have less ability to improve conditions in their neighborhoods, limit neighborhood violence, and intervene in the community for the common good than neighborhoods without high CD.
Indicator narratives for 4th grade proficiency (LC-57), incarceration rate (LC-58), and voter registration (LC-59), can be referenced to further expand on the concept of social capital and the effects of social capital on health over the life course.

Certain poor health outcomes are linked to CD. The indicator narrative discusses how CD affects equity, public health, and individual health. Outcomes that have been linked to CD include:

- Decreased verbal ability in children
- High school drop out
- Teen pregnancy
- Adolescent delinquency
- Decreased overall health
- Mental health/risk taking behaviors
- Community level adverse health outcomes – infant mortality rate, low birth weight and child maltreatment
- Future individual mortality

It can be difficult to highlight health impacts tied to CD without seemingly putting blame on the people in the affected communities. Use techniques such as place-based language and highlighting the bidirectional relationship between health and wealth to stress the impact community well-being has on health outcomes. It also may help to point out that areas with high CD may be areas with low social capital that are in need of resources to achieve better health and economic outcomes.

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