In the field of child welfare, several different calculations are used to assess dispar-ity. The goal of using the calculations is to determine at which decision points within a system children of different races may experience inequitable outcomes. This brief will discuss two calculations:

- *The Disparity Index* (DI), which is appropriate for measuring inequity in victimization and entry rates, and

- *The Relative Rate Index*[1] (RRI), which the Annie E. Casey Foundation recommends using for placement type, exit decision points and other post-entry decision points, plus as a secondary means of examining entry disparities.

Calculating the Disparity Index

DI compares the likelihood of one group experiencing an event to the likelihood of another group experiencing that same event. For example, a DI can be used to deter-mine whether black children are more or less likely than white children to enter foster care. The DI is calculated by dividing the rate per 1,000 children in the population for one racial group by the rate per 1,000 for the comparison racial group. A result less than 1 indicates the numerator group is less likely to experience the event, greater than 1 indi-cates they are more likely and equal to 1 indicates that the two groups are equally likely to experience the event. Table 1 provides an example using data from 2012.[2] It shows that black children are 1.81 times more likely than white children to enter foster care, while Native American children are 2.89 times more likely. The DI for white children is 1.00, denoting it is its own comparison group.

Table 1: National Disparity Indices for Foster Care Entry

GROUP	ENTRY RATE PER 1,000	DI CALCULATION	DI RESULT
White	2.91	2.91 / 2.91	1.00
Black	5.39	5.39 / 2.91	1.85
Native American	8.40	8.40 / 2.91	2.89

Drawbacks of the Disparity Index

The problem with using DI to assess disparity for all decision points after entry is that disparity at the front end of the system can mask or inflate disparities at subsequent decision points. Calculating the DI uses the general population as the basis for the rate per 1,000, regardless of the decision point being assessed.

This may make sense when determining disparity in entry rates, but it is not as useful when examining disparity at points deeper in the child welfare system. For example, if you want to determine the disparity in exit rates, using the general population as the basis would mean including a large number of children who never entered foster care and thus could never exit foster care. The use of the general population for all decision points may result in a DI adding together the disparities present at all prior decision points. This makes it difficult to determine at which decision points disparities exist in order to target them for intervention.

By comparison, the RRI adjusts for the relative risk a population of children has of experiencing an event, making it easier to discern which decision points are associated with disparity.

Calculating the Relative Rate Index

The RRI uses the same mathematical calculation as the DI. However, the population used as the denominator to calculate the rate per 1,000 changes to reflect the number of children who are actually *at risk* of experiencing an event. For instance, to exit foster care, a child must have entered foster care at some point; the population of children served during the year would be used as the rate per 1,000 denominator.

When using the RRI, it is vital to correctly determine which population is appropriate to use as the denominator. Figure 1 (below) shows how the RRI creates a "funnel" that results in a smaller population at risk of an event the deeper into the system you look. However, the flow is not necessarily linear. "Entering foster care" can be the population for several events. Similarly, one event may have more than one possible risk population. For example, to answer the question, "What is the disparity in exiting to family?", the population could be all children who entered during a time period, were served during a time period, were in group placements or were in care at least 60 days. The population chosen will depend on the question you seek to answer. If your analysis is focused on group placements, you will want to use the children in group placements as your population.

Figure 1: Graphic Example Representing the "Shrinking" Population for the Relative Rate Index
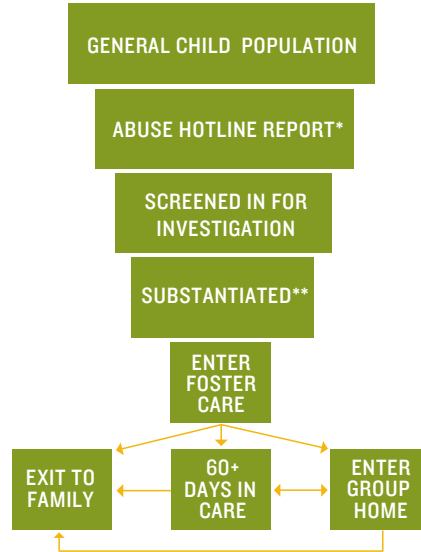
*While limiting the population based on reports is ideal, it may not be possible as most systems do not have a reliable means of tracking race for reports that do not receive an investigation.

**Not all systems require substantiation of abuse for a child to enter foster care. The funnel should reflect the requirements of the system being analyzed.

Comparing the RRI and the DI

As Table 2 shows,[3] the DI and RRI give sharply different views. The DI makes it appear that black and Native American children are more likely to exit than white children. However, because the DI uses the general population number as its denominator for the rate per 1,000, the result includes the known disparity at entry (as shown in Table 1). When examining only those children who were served, and therefore could exit, the RRI shows that black and Native American children are slightly less likely than white children to exit.

Table 2: Comparison of DI and RRI on Exits from Foster Care Using National Data

GROUP	EXIT DI CALCULATION	DI RESULT	EXIT RRI CALCULATION	RRI RESULT
White	2.47 / 2.47	1.00	375.27 / 375.27	1.00
Black	4.98 / 2.47	2.02	350.55 / 375.27	0.93
Native American	6.97 / 2.47	2.82	354.85 / 375.27	0.95

Important points to keep in mind

As with any measure, population size can influence the calculation. A location that has few Native Americans in the general population and only a couple such children in care may have a large RRI compared to whites. The decision on which groups to analyze should be based on the racial/ethnic makeup of your location. For example, if your area has a large Vietnamese population it would be important to calculate disparity for this group. Racial and ethnic groups are not evenly distributed throughout the country. When measuring agency performance compared to other systems, you should select a location that looks similar to yours in terms of general population makeup.

Lastly, the measure also is only as reliable as the data from which it is calculated. This goes beyond ensuring that workers check off race in your data system. Recent changes in the U.S. Census Bureau's methods for recording race and ethnicity highlight the fluid nature of such classifications. Research has found that racial self-identification and classification of others can be influenced by life events.[4] Quantifying the degree of disparity in your system is important, but such analysis should always be supplemented with the qualitative experiences of your clients.

1 Several other terms have been used by others to describe this type of measure, including adjusted risk index, adjusted disparity index and relative risk index.

2 Sources: 2012 AFCARS Public Use Files and 2012 KIDS COUNT Data Center.

3 Sources: 2012 AFCARS Public Use Files and 2012 KIDS COUNT Data Center.

4 Saperstein, A., & Penner, A.M. (2010). The race of a criminal record: How incarceration colors racial perceptions. *Social Problems,* 57(1), 92–113.