Maryland Department of Health and Mental Hygiene
Mental Hygiene Administration

DATA SHORTS

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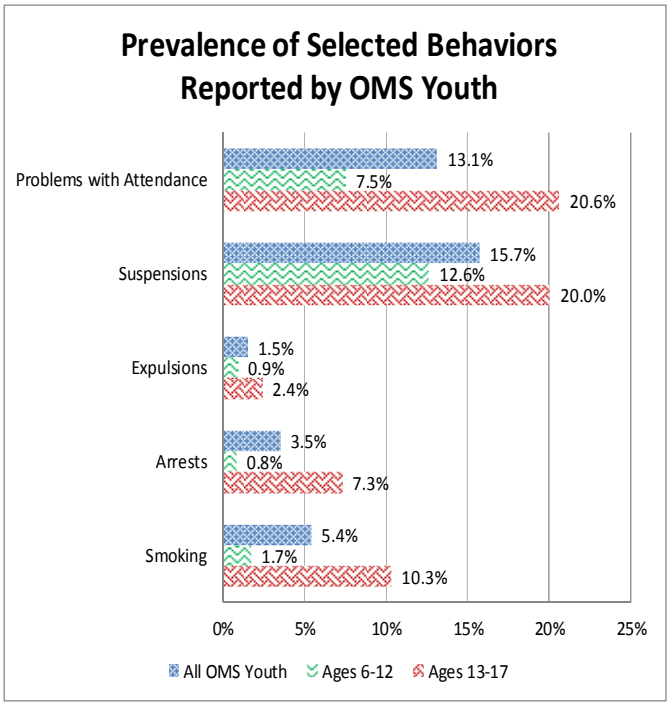
"Apples to Apples": Data Interpretation and Context

Since the inception of the Outcomes Measurement System (OMS) Datamart, one of the questions that has most frequently been asked is whether observed differences are "significant". In reality, statistics are most often used when dealing with samples, groups that are selected to represent larger populations. Statistics determine the error that is likely to be associated with the sampling process. Most basically, statistics tell us how likely it is that differences that we find would be the result of this sampling error rather than a "real" difference between groups.

The statewide OMS is not a sample, but an entire population. So while the question of statistical significance can be an important one when comparing subgroups, the more pertinent question is whether differences are meaningful.

Because there is no test for meaningfulness, determining it is qualitative, not quantitative. It is essential to understand the data and the groups that one is examining to make some determination about the meaningfulness of differences. For example, among youth, negative behaviors are more likely to increase with age. Selected youth data from the OMS from 2012 are used here to demonstrate this in the graph. They show results for all youth, for those ages 6 to 12, and for those ages 13 to 17. They examine the presence of five negative behaviors in the past six months: problems with school attendance, school suspensions, school expulsions, arrests, and smoking.

As shown in the graph, none of the behaviors exceed 20.6% for either age group. In all cases, the data for the youth ages 6 to 12 are below the total percentages, while the percentages for youth ages 13 to 17 are above the total percentages. If comparing the results for a program serving youth in elementary



school with the data for all youth statewide, it is necessary to filter the statewide data to those youth ages 6 to 12 to complete a more valid comparison. Otherwise, it might misleadingly appear that the program was producing much better outcomes than was true statewide. Similarly, in comparing a middle and high school based program to the total youth OMS population statewide, it is necessary to restrict the statewide data to youth ages 13 to 17 to complete a more valid comparison. Otherwise, it would most likely appear that the program was not doing as well in preventing negative behaviors.

In the process of trying to compare data, then, it is essential to assure that the groups on which the comparisons are being made are similar in composition, especially with respect to a demographic characteristic that would be likely to affect the behavior being examined. Stated more directly, one must always try to compare "apples to apples".

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