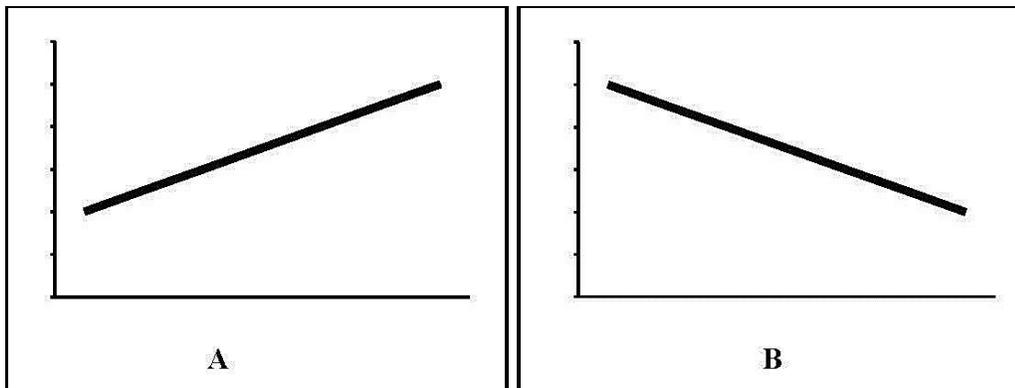


How to Interpret the Trend Analysis Report

Linear and quadratic changes occur independently. It is possible to have one, both, or neither. One is not better or more important than the other. There are four possible combinations of linear and quadratic changes.

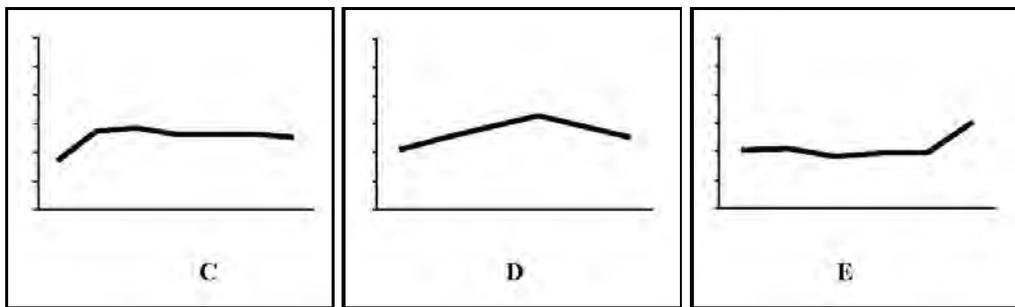
Linear change = YES; Quadratic change = NO

This means the prevalence either increased (A) or decreased (B) significantly over time. A graph of the trend line will be relatively straight.



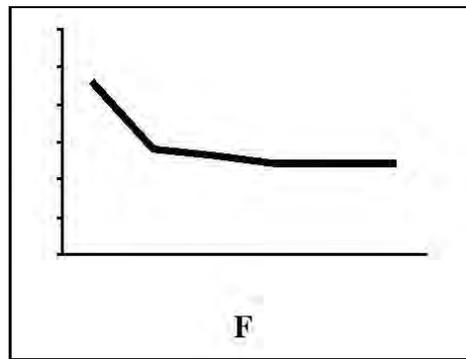
Linear change = NO; Quadratic change = YES

This means the prevalence increased or decreased slightly over time, but not enough to be a significant linear change, and then leveled off (C); the prevalence increased or decreased and then went in the opposite direction (D); or the prevalence started out level and then increased or decreased over time, but not enough to be a significant linear change (E). A graph of the trend line will have a bend in it. This report refers to the year when the bend occurs as the “inflection point.”



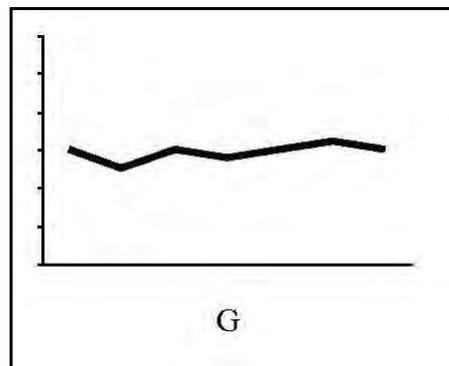
Linear change = YES; Quadratic change = YES

This means that while there was an overall significant increase or decrease in the prevalence over time, the prevalence has either leveled off or begun to move in the opposite direction (F). A graph of the trend line will have a bend in it.



Linear change = NO; Quadratic change = NO

This means that there was no significant change in the prevalence over time. A graph of the trend line will be relatively flat (G).



Notes

The analyses in the Trend Analysis Report are run using SUDAAN and Joinpoint statistical software.

SUDAAN logistic regression is used to test for linear and quadratic changes. Logistic regression uses all available years of data. It does not simply consider only the oldest and most recent data points.

When SUDAAN detects a quadratic trend, Joinpoint is used to determine the inflection point, or the year the “bend” occurs. Then SUDAAN is used again to test for linear trends on either side of the inflection point. The result for each of these tests is reported in the Trend Analysis Report.

SUDAAN t-test analysis is used to test for changes between 2016 and 2018.

Special care should be used in interpreting trend analysis for variables with very low prevalence. When the sample size is small, these analyses might fail to detect a statistically significant change when one might have occurred. When the sample size is large, these analyses might detect a statistically significant change that has no practical or “real-world” significance.