

# Rate Stabilizing Tool

## Generating robust local-level measures of population health

The Rate Stabilizing Tool (RST) is an ArcGIS-based tool that enables users to input their own record-level data to generate reliable, local-level age-standardized measures of chronic disease (e.g., prevalence, incidence, mortality) or other population health outcomes. The RST uses Bayesian modelling techniques to generate population health estimates and enable users to evaluate statistical uncertainty in the estimates. The RST is especially useful for estimating population health measures when the population or number of events is small.

### Key Features

- Developed in response to increasing demand for small area measures of chronic disease.
- Uses Bayesian spatial smoothing models to generate robust small area estimates at the county and sub-county levels.
- Produces measures of statistical uncertainty (i.e. credible intervals) for each estimate that is generated.

### Why Should I Use the RST?

You should use the RST if you need to generate measures of disease burden for small geographic areas. One critical component in the use of GIS for chronic disease prevention and health promotion is the generating estimates at the local level (e.g., county, census tract) that are both accurate and precise. In general, the smaller the population size, the smaller the event counts, and the greater the instability in population measures of chronic disease. In particular, small counts are often encountered when analyzing small geographic areas (e.g., census tracts) or examining population subgroups (e.g., race/ethnicity, sex) or sparsely populated regions (e.g., rural areas). The RST overcomes these limitations by using Bayesian statistical methods to generate stable, precise estimates.

### What Software Do I Need to Use the RST?

The RST is a toolbox that is added to ArcGIS. You need a license to either ArcGIS Desktop or ArcGIS Pro to use the RST.

### What Data Do I Need to Use the RST?

The RST uses individual level data to generate stable rates. If you only have data that has already been aggregated to a geographic level, we provide instructions for transforming those data to a format that the RST can use.

### How Do I Get the RST?

Download the RST from <https://www.cdc.gov/dhdsp/maps/gisx/rst.html>. This webpage also has includes detailed statistical methods, instruction manuals, and additional references.

For more information, please see the article in *Preventing Chronic Disease* titled “The Rate Stabilizing Tool: Generating Stable Local-Level Measures of Chronic Disease”.



**Centers for Disease Control  
and Prevention**  
National Center for Chronic Disease  
Prevention and Health Promotion