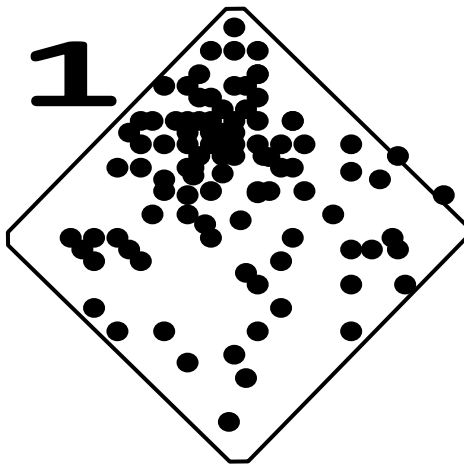
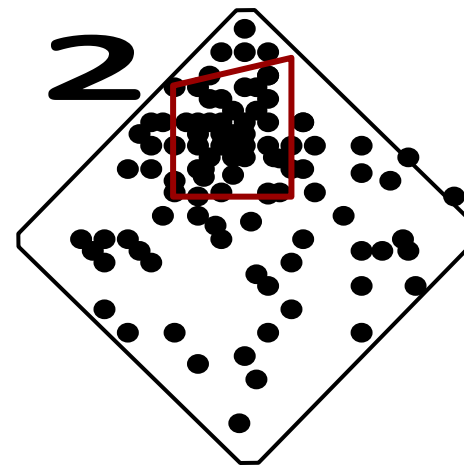


# What is a Population-Weighted Small Area Estimate?

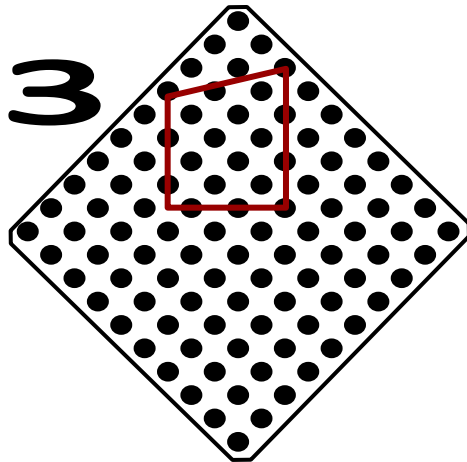


100 people live in this county. The dots represent the distribution of the total population.



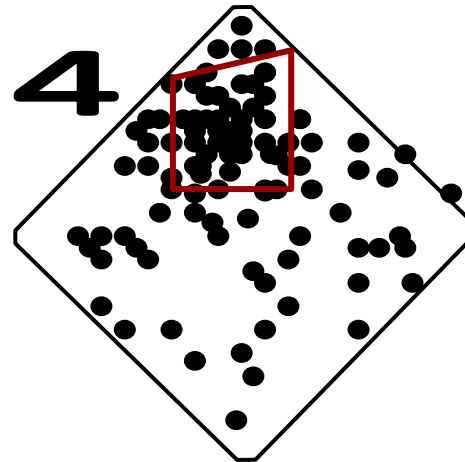
A data source indicates that the percent of population in this county who use tobacco is 25%, or 25 people.

You want to estimate the number of people in this red area that use tobacco.

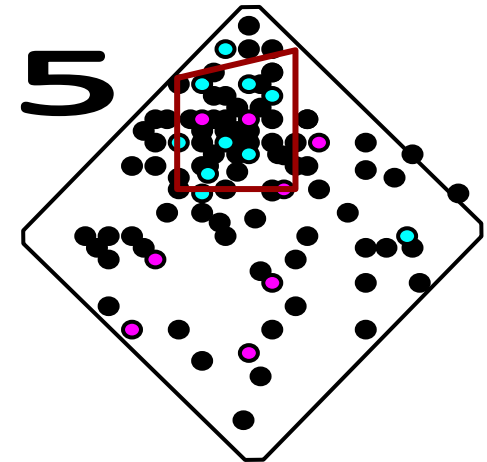


One way to estimate this is to assume that the tobacco using population is evenly distributed throughout the county. This red area covers about 1/5th of the entire county so the estimated number of people using tobacco is estimated at 5, or 1/5th of 25.

The flaw in this estimate is that we know for certain that the total population is not evenly distributed throughout the county so it is unlikely that the tobacco using population is so evenly distributed.



The small area estimate allows us to take into consideration the distribution of the population when estimating the tobacco usage. We can calculate the percent of total population living within the red area - let's say 75% - and weigh our estimate of the tobacco users. If 25 people in the county use tobacco, the estimated number using tobacco in this red area is 18.75 or 19 people.



In some cases, the data affects only a certain subset of the population. For example, when estimating the number of people with prostate cancer we can look at not only the distribution of population, but also consider where adult men are located. These kinds of considerations are noted in the Footnotes of the Reports.