Identifying Counties at Risk for Measles

PHI 513: Analytical Skills for Public Health II

2024/01/19

You are a CDC employee tasked with identifying the U.S. counties that are at risk of a measles outbreak. A CDC model provides you with estimates of measles vaccination rates among school-aged children in all 3143 U.S. counties, as well as standard errors and degrees of freedom remaining for each county after estimation.

You decide to take a conservative approach, assuming that counties are at risk unless evidence strongly suggests otherwise: you want to be confident that a county's vaccination rate is over 99% to classify it as "not at risk."

With a partner, write down an analysis plan that includes the following:

1. Definitions of the relevant variables (parameters, estimates, etc.)
2. The hypotheses you will test
3. The statistical test you will use for each hypothesis (which will produce a p-value)
4. How you will adjust the resulting p-values to correct for multiple testing
5. Assumptions made by your analysis plan

You and your partner will each write your names on the sheet that you hand in at the end of class for participation credit. You should also take a picture of your plan, because this week's homework will require you to implement it in R using real data, displayed below!