Analysis Plan – General Overview

* Calculate expected lung cancer frequencies for each TX county
  + Calculate SIR’s for each county
  + Plot SIR’s over time using INLA modeling
    - Redo for each histologic type
* Calculate expected COVID-19 mortality rates\* for each TX county
  + Calculate SIR’s for each county
  + Plot SIR’s over time using INLA modeling
* Calculate exceedance probabilities for the different counties
* Determine whether there’s an association between the SIR’s of the counties for COVID-19 and for lung cancer (2017)
* Real lung cancer rates for Texas over time across counties
  + Cases by histologic type
* Create a model using COVID-19 mortality rate as the dependent variable and prevalence of cancer patients to see if it’s equivalent to 0
  + Repeat and consider some **additional covariates such as rurality**, etc.
  + Repeat using cancer as the dependent variable
* Bivariate map comparing COVID-19 cases/ 100,000 people as well as lung cancer/ 100,000 people
  + Same map but COVID-19 mortality rate
* Attempt using some spatial span/ clustering R packages to see if there are certain areas/ clusters where any of these rates/ covariates seem to play a particularly large role

\*There’s no literature suggesting that having cancer increases the likelihood of contracting cancer although there is literature suggesting that it increases the likelihood of passing away