**Milestone #2 due Wednesday, Oct 19: Literature Review.**

**As a team, submit a 1-page (or less) summary of each of two readings related to your selected project (up to 2 pages total).**

**Literature study: go through the following resources for background on the project and write a half to 1 page summary for each one**

## Delivering Faster Results with Food Inspection Forecasting

Chicago's Analytics-Driven Plan to Prevent Foodborne Illness

By Sean Thornton, May 19 2015

<http://datasmart.ash.harvard.edu/news/article/delivering-faster-results-with-food-inspection-forecasting-631>

All of Chicago’s 15,000 restaurants are required to adhere to food safety regulations to avoid foodborne illness. To enforce these regulations, the City of Chicago employs 30- 35 food inspectors. With so many restaurants and so few inspectors, there are not enough resources to fully police all restaurants at all times.

The traditional method of choosing who to inspect finds about 15% of inspections result in a critical violation – usually the food temperature is in the danger zone, resulting in dramatically increased odds of foodborne illness. The City of Chicago wondered whether data and analytics could help them improve their efficiency of choosing who to inspect.

Chicago is particularly well-positioned to try a data-driven approach to reduce foodborne illness. Chicago was recently awarded $1M from the Bloomberg Philanthropies Mayor’s Challenge, in which they proposed to aggregate and analyze data to make better and faster decisions. This led to the creation of the SmartData Platform, a place to access well-structured and up-to-date data from many sources.

With well-structured data available, the city also wanted to secure a collaboration for the project. With the help of Civic Consulting Alliance, they were able to partner with a team from Allstate Insurance, a Chicago-based company with strong data science talent.

The team, including Allstate Insurance and the City of Chicago, was able to predict which establishments are at highest risk of violating food safety regulations. They found that the factors most associated with a critical food safety violations were: a history of violations; having a tobacco or alcohol consumption license; length of time since the last inspection; location in the city; nearby garbage and sanitation complaints; nearby burglaries; and 3-day average high temperature.

Being able to predict the critical violations allows inspectors to prioritize those establishments and to catch violations earlier, keeping the city safer. In a trial month, the standard inspection approach was able to catch 141 violations; using the data-driven approach, the team estimates that the inspectors would have been able to catch 178 violations, a 26% improvement.

The City of Chicago has released its data and code for this project with the hopes that other cities can implement similar procedures or help them improve their own. However, most other cities would struggle to aggregate the data from many sources since they do not have a program similar to the SmartData Platform.

## Food Inspection Forecasting

Optimizing Inspections With Analytics

<https://chicago.github.io/food-inspections-evaluation/>