Food Inspections Assignment
A Data Analyst Journey

The aim is to analyze, model, and visualize food inspection data to uncover insights and improve public health transparency

- Dealing with Food Establishment Inspections in two cities
  - Chicago and Dallas
  - Sample food inspection report of Dallas and Chicago
- All the above cities are recording data on food inspections
  - Note that both cities differ in **schema** such as The aim is to analyze, model, and visualize food inspection data to uncover insights and improve public health transparency
- **Tools to be used:**
  - Databricks for processing. However, data profile and cleansing you can do either in Databricks or Alteryx
  - ER studio / Navicat for data modeling

Food Establishment Inspections

Each part 25 Marks

- Deliverables – follow Medallion architecture wherever applicable
  - Part 1
    - Data is provided in a delimited format. Download it from **here**
    - Profile the data and document the findings (Alteryx or DQX can be used)
      - Goal is to understand structure, quality, characteristics
      - Helps to find common attributes to create a dataset which can be merged and loaded to target.
  - Part 2
    - Design Dimensional Model
    - Source to target mapping document to be created.
    - Deploy the model (Databricks final tables should match to this model)
  - Part 3
    - Load dimensional model
      - Read silver zone (cleansed) and load the model (Gold zone)
      - Name Dimensions and Facts with appropriate prefix such as dim_ / fact_
      - Implement SCD2 for any one of your choice of dimension table.
  - Part 4
    - Create BI dashboards
      - Power BI / Tableau (Any one of the tools usage is fine to create reports/dashboards)

Food Establishment Inspections

- Silver zone data validation rules to be incorporated as expectations (drop the bad rows)
  - Restaurant Name, Inspection Date and Type, Zip codes cannot be null
  - Zip codes cannot be null and should be in valid format
  - Violation score in Dallas cannot be more than 100
  - Chicago inspection results cannot be null
  - Every inspection must have at least 1 unique violation and duplication violations to be loaded as distinct
  - In Dallas dataset –
    - if violation score is 90 or more than we should not have more than 3 violation associated
    - Inspection result cannot be PASS if any of the violation contains Urgent/Critical terms
- Derive violation score for Chicago based on the table provided here →
- Remember –
  - All good practices discussed in the class must be incorporated
  - Profiling and analysis to be clearly documented
  - Cleansing Steps and adjustments performed to be documented
  - Submit screen shots clearly showing the end results
  - Code must be integrated to GIT as explained in class
  - Will grab the source code from GIT for grading
  - Git commits post due date will not be considered
  - Note that violation codes and descriptions in Chicago are not structured
    - Standardize the schema for violation codes and descriptions between both datasets so that you can store data properly
    - Dallas violations codes and Chicago violation codes dont need to match however, create a dim that stores both sets

Chicago Results	Derive score based on Results
Pass	90
Pass w/ Conditions	80
Fail	70
No Entry	0
All other types	NULL

What to show on Dashboard

Expected Visuals

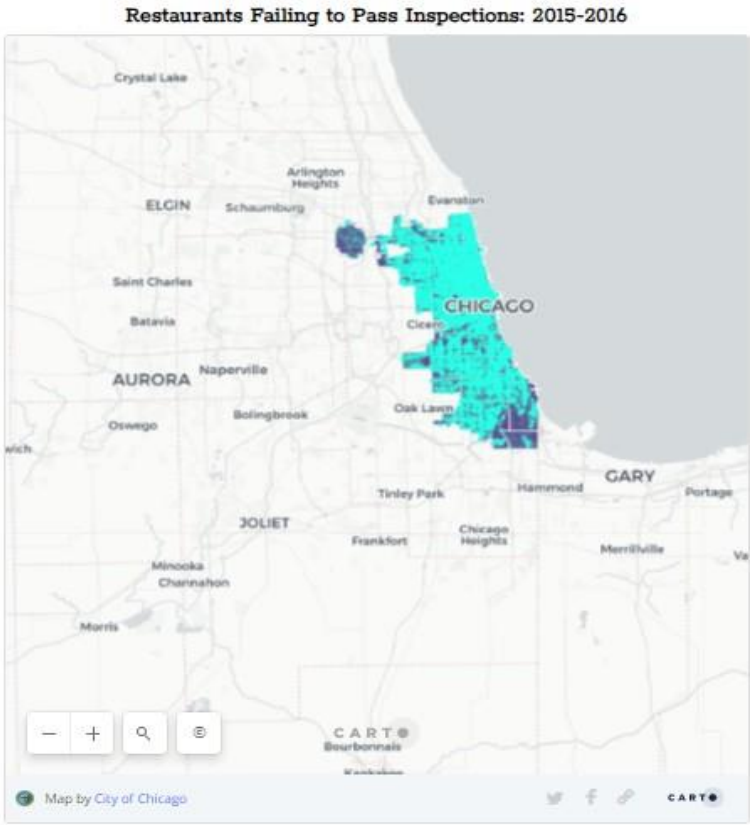
- Examine food inspection results by:
  - Inspection result
  - Inspection type
  - Risk category
  - Facility type
  - Violations (Codes, descriptions)
  - Business inspected
    - DBA (Doing Business As), AKA (Also Know As), License
  - Location
- Inspection report
  - All above with inspection #, license #, violations & inspector comments

Chicago Food Inspections

Open Data & Analytics

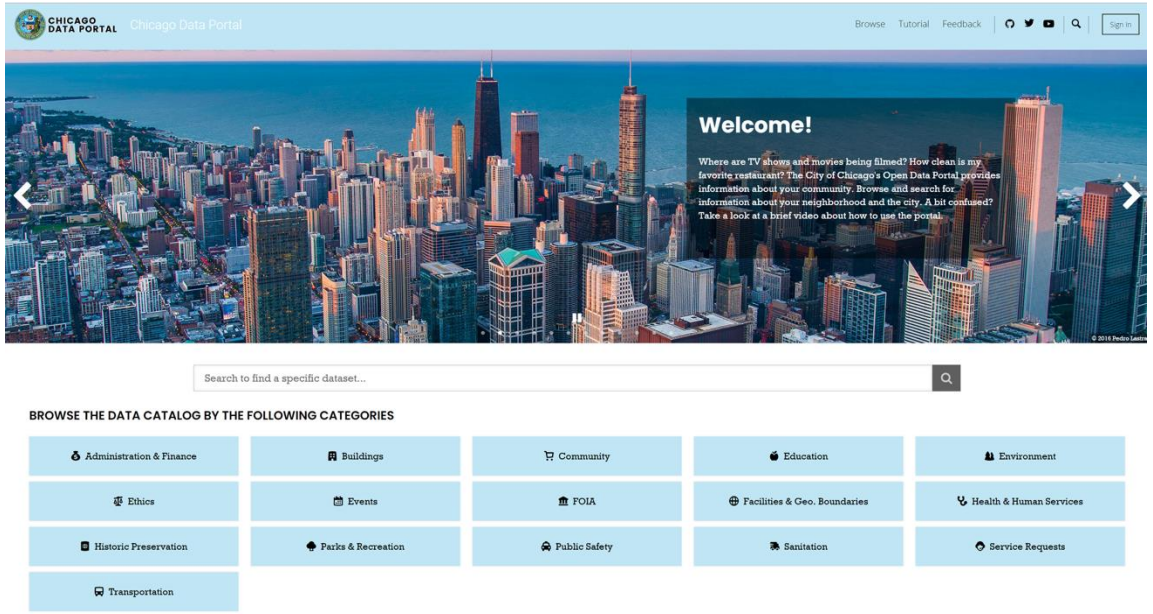
Collaboration was a key component of this project, with researchers at the Department of Innovation and Technology, Department of Public Health, Allstate Insurance Company, and Civic Consulting Alliance all working together. Each variable used in the model, with the exception of widely available weather and inspector data, was available on Chicago's open data portal. The portal provides access to hundreds of datasets, which have been used to improve transparency, allow application development, and catalyze commercial activity for start-ups and large enterprises.

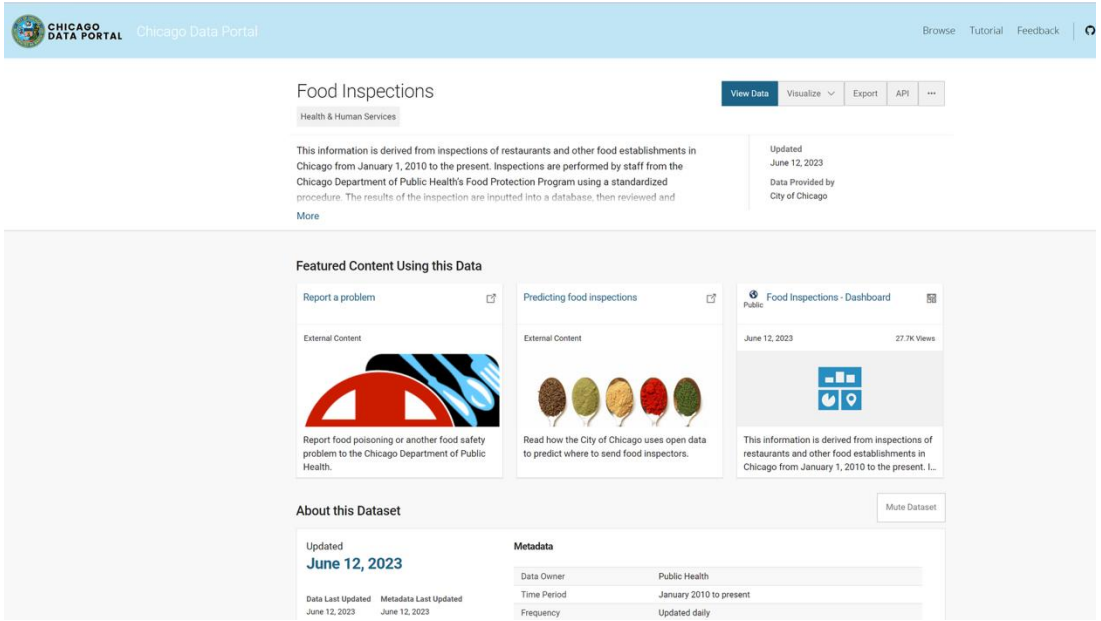
The portal was an effective tool to allow for such collaborative research. This project was able to leverage Chicago's key data assets: its large volume of data, the transparency and size of its open data portal, and its ability and willingness to conduct research to improve city services, introduce savings, and increase engagement with Chicago-area businesses.



Chicago Food Inspection DATA

- Data URL
  - [City of Chicago | Data Portal | City of Chicago | Data Portal]
  - [Food Inspections | City of Chicago | Data Portal]
  - [Health code requirements for food establishment]





Chicago Food Inspection DATA

CHICAGO DATA PORTAL Chicago Data Portal

Browse Tutorial Feedback

Food Inspections

Health & Human Services

View Data | Visualize | Export | API | ...

This information is derived from inspections of restaurants and other food establishments in Chicago from January 1, 2010 to the present. Inspections are performed by staff from the Chicago Department of Public Health's Food Protection Program using a standardized procedure. The results of the inspection are inputted into a database, then reviewed and

More

Updated
June 12, 2023

Data Provided by
City of Chicago

Download Food Inspections

Download Food Inspections for offline use in other applications.

CSV | CSV for Excel

Additional Formats

CSV for Excel (Europe) | TSV for Excel

RDF | XML

RSS

Featured Content Using this Data

Report a problem

External Content

Report food poisoning or another food safety problem to the Chicago Department of Public Health.

Predicting food inspections

External Content

Read how the City of Chicago uses open data to predict where to send food inspectors.

Public **Food Inspections -**

June 12, 2023 27.7K Views

This information is derived from inspections of restaurants and other food establishments in Chicago from January 1, 2010 to the present. I...

About this Dataset

Mute Dataset

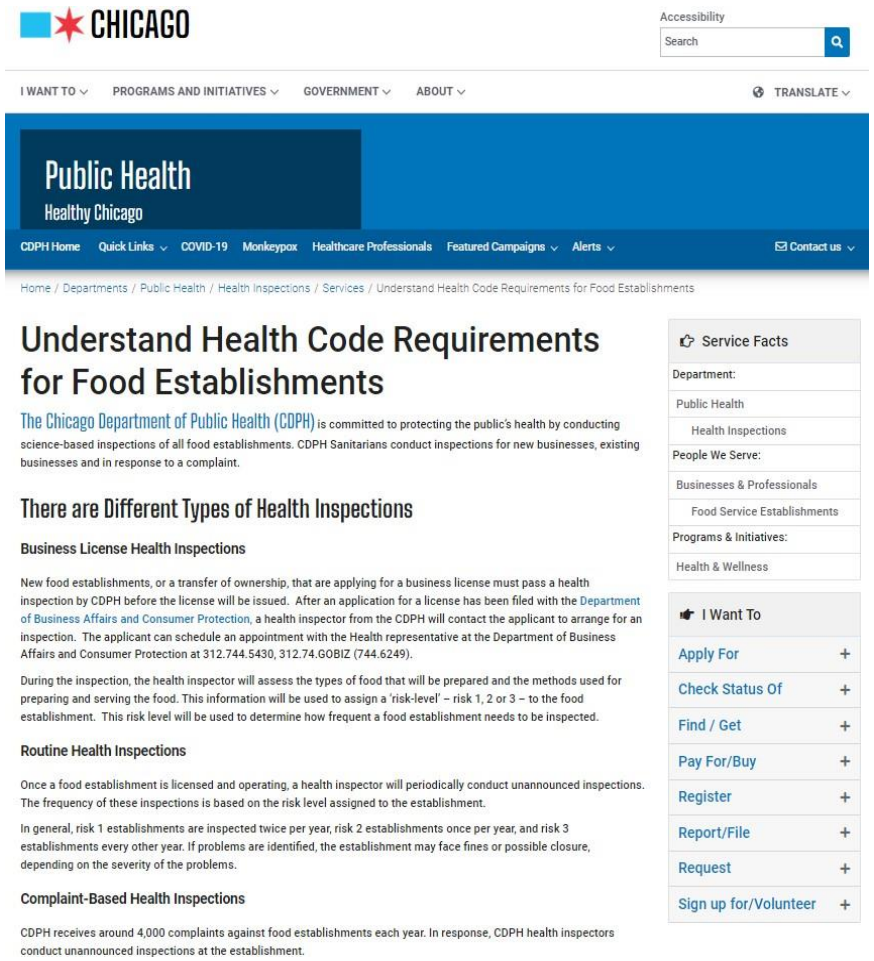
Updated
June 12, 2023

Metadata

Data Owner	Public Health
Time Period	January 2010 to present

Chicago Food Inspection – Health Code Requirements

- [City of Chicago :: Understand Health Code Requirements for Food Establishments]



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Accessibility

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Public Health
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Home / Departments / Public Health / Health Inspections / Services / Understand Health Code Requirements for Food Establishments

Understand Health Code Requirements for Food Establishments

The Chicago Department of Public Health (CDPH) is committed to protecting the public's health by conducting science-based inspections of all food establishments. CDPH Sanitarians conduct inspections for new businesses, existing businesses and in response to a complaint.

There are Different Types of Health Inspections

Business License Health Inspections

New food establishments, or a transfer of ownership, that are applying for a business license must pass a health inspection by CDPH before the license will be issued. After an application for a license has been filed with the Department of Business Affairs and Consumer Protection, a health inspector from the CDPH will contact the applicant to arrange for an inspection. The applicant can schedule an appointment with the Health representative at the Department of Business Affairs and Consumer Protection at 312.744.5430, 312.74.GOBIZ (744.6249).

During the inspection, the health inspector will assess the types of food that will be prepared and the methods used for preparing and serving the food. This information will be used to assign a 'risk-level' – risk 1, 2 or 3 – to the food establishment. This risk level will be used to determine how frequent a food establishment needs to be inspected.

Routine Health Inspections

Once a food establishment is licensed and operating, a health inspector will periodically conduct unannounced inspections. The frequency of these inspections is based on the risk level assigned to the establishment.

In general, risk 1 establishments are inspected twice per year, risk 2 establishments once per year, and risk 3 establishments every other year. If problems are identified, the establishment may face fines or possible closure, depending on the severity of the problems.

Complaint-Based Health Inspections

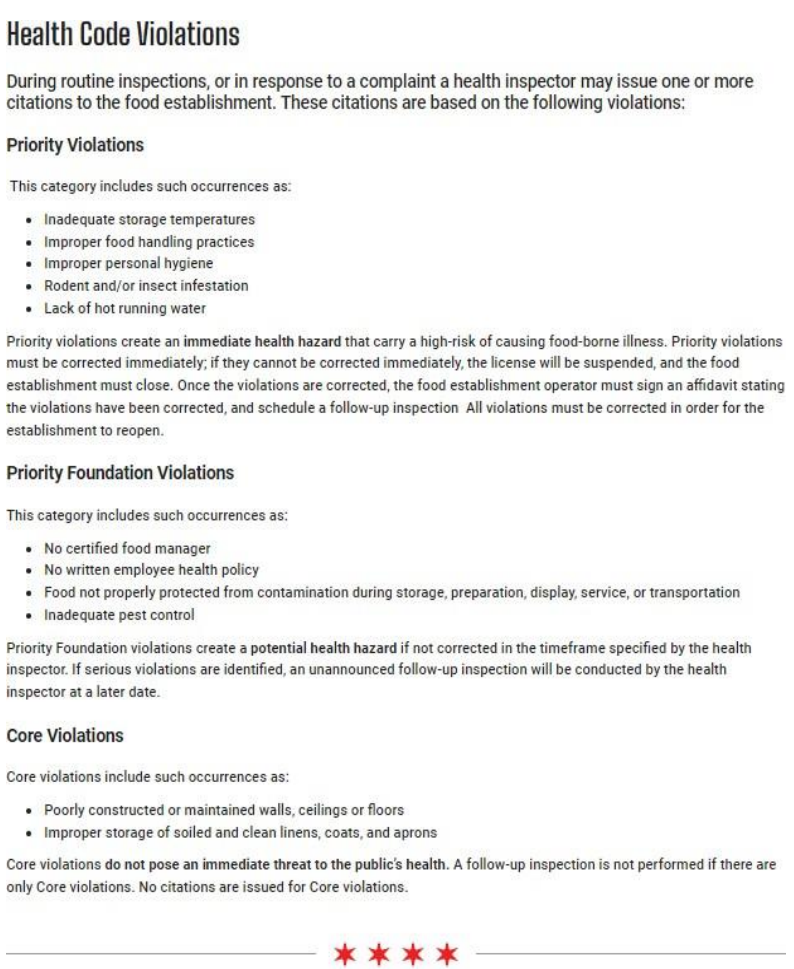
CDPH receives around 4,000 complaints against food establishments each year. In response, CDPH health inspectors conduct unannounced inspections at the establishment.

Service Facts

Department:
Public Health
Health Inspections
People We Serve:
Businesses & Professionals
Food Service Establishments
Programs & Initiatives:
Health & Wellness

I Want To

Apply For +
Check Status Of +
Find / Get +
Pay For/Buy +
Register +
Report/File +
Request +
Sign up for/Volunteer +



Health Code Violations

During routine inspections, or in response to a complaint a health inspector may issue one or more citations to the food establishment. These citations are based on the following violations:

Priority Violations

This category includes such occurrences as:

- Inadequate storage temperatures
- Improper food handling practices
- Improper personal hygiene
- Rodent and/or insect infestation
- Lack of hot running water

Priority violations create an **immediate health hazard** that carry a high-risk of causing food-borne illness. Priority violations must be corrected immediately; if they cannot be corrected immediately, the license will be suspended, and the food establishment must close. Once the violations are corrected, the food establishment operator must sign an affidavit stating the violations have been corrected, and schedule a follow-up inspection All violations must be corrected in order for the establishment to reopen.

Priority Foundation Violations

This category includes such occurrences as:

- No certified food manager
- No written employee health policy
- Food not properly protected from contamination during storage, preparation, display, service, or transportation
- Inadequate pest control

Priority Foundation violations create a **potential health hazard** if not corrected in the timeframe specified by the health inspector. If serious violations are identified, an unannounced follow-up inspection will be conducted by the health inspector at a later date.

Core Violations

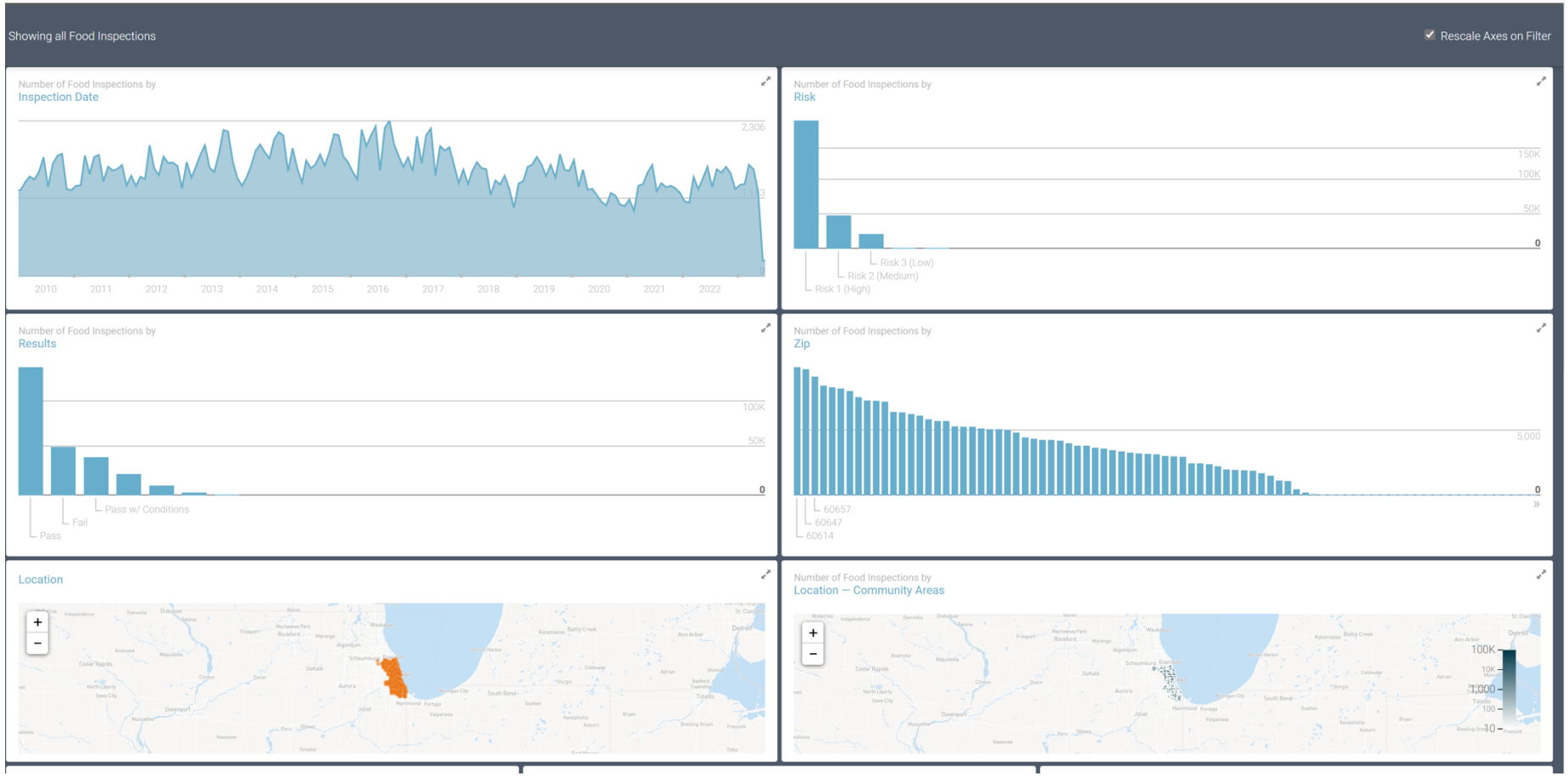
Core violations include such occurrences as:

- Poorly constructed or maintained walls, ceilings or floors
- Improper storage of soiled and clean linens, coats, and aprons

Core violations **do not pose an immediate threat to the public's health.** A follow-up inspection is not performed if there are only Core violations. No citations are issued for Core violations.

Chicago Food Inspection – sample Dashboard

- [Food Inspections - Dashboard | City of Chicago | Data Portal]



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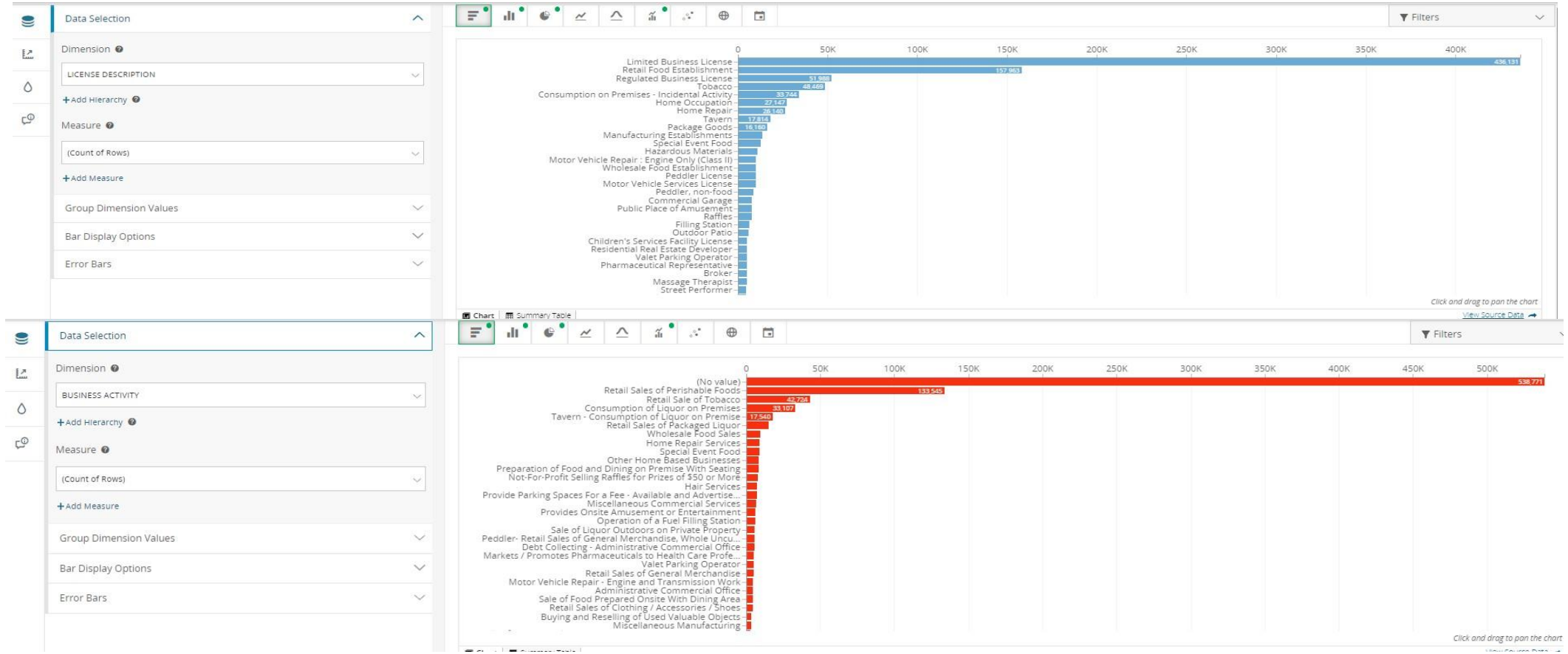
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