

Nom nom, where to take Tom?

**Review of 2015 NYC
restaurant inspections**

Restaurants in NYC are inspected every 6 months to ensure compliance to regulations for sanitation and food handling

Inspectors give **penalty points** for violations. More points earned signifies more problems. Points are at the discretion of the inspector, based on severity.

Restaurants inspected* :

21,272

Restaurants tied to a cuisine:

14,902

Violations recorded:

127,347

Critical violation groupings:

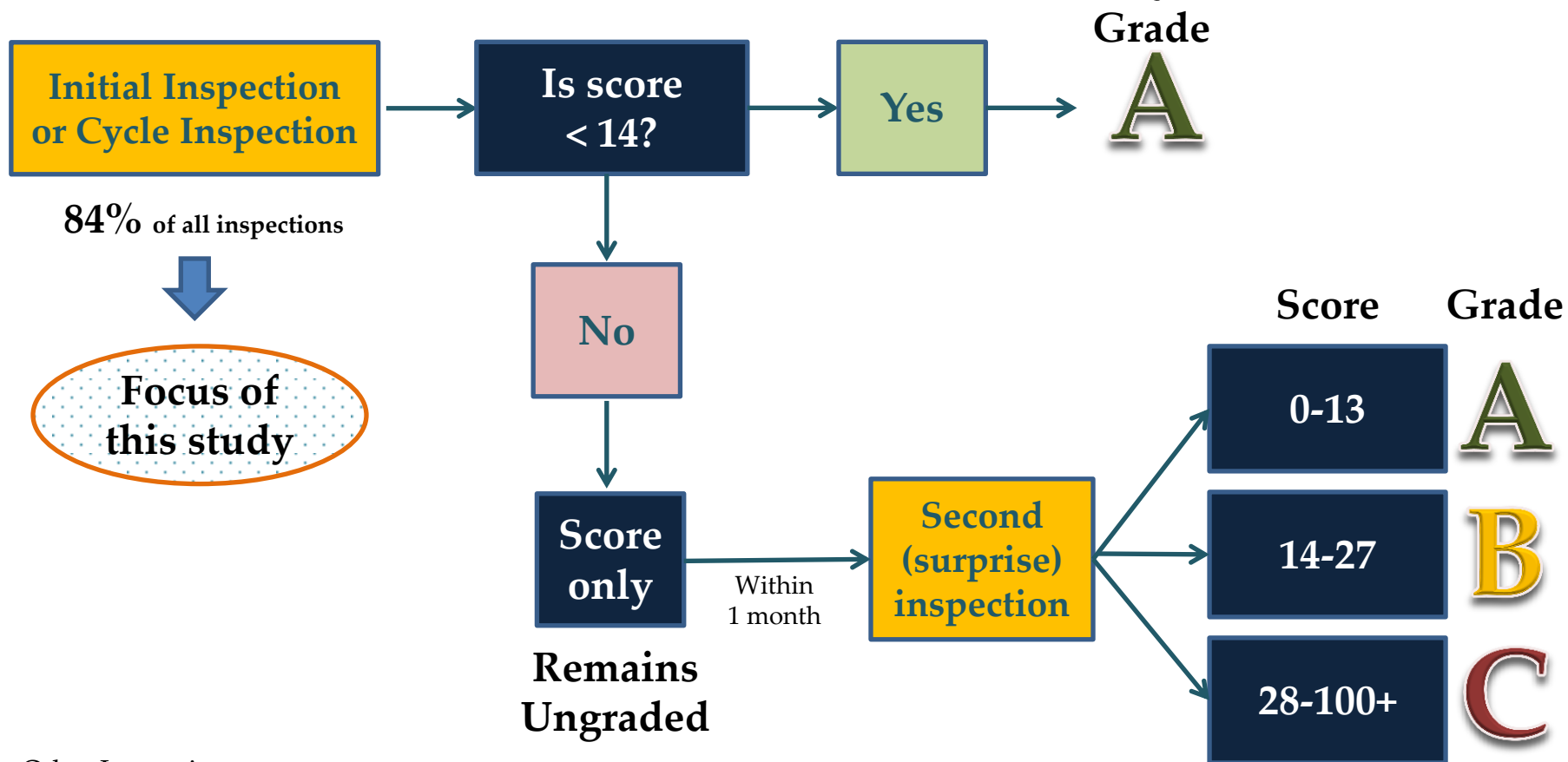
- 15 Food contamination during prep
- 10 Food temperature problem
- 9 Inadequate sanitization
- 7 Milk/Water/Eggs/Fish/Shellfish
- 7 Facility not suitable for food handling
- 1 Obstructing inspector

General violation groupings:

- 10 Poor Facility Maintenance
- 3 Dented Cans/Thawing/Contact Surface
- 3 Pesticide & Garbage

A total of 65 possible violations

Restaurants have two tries to earn an A in a cycle (6 months)

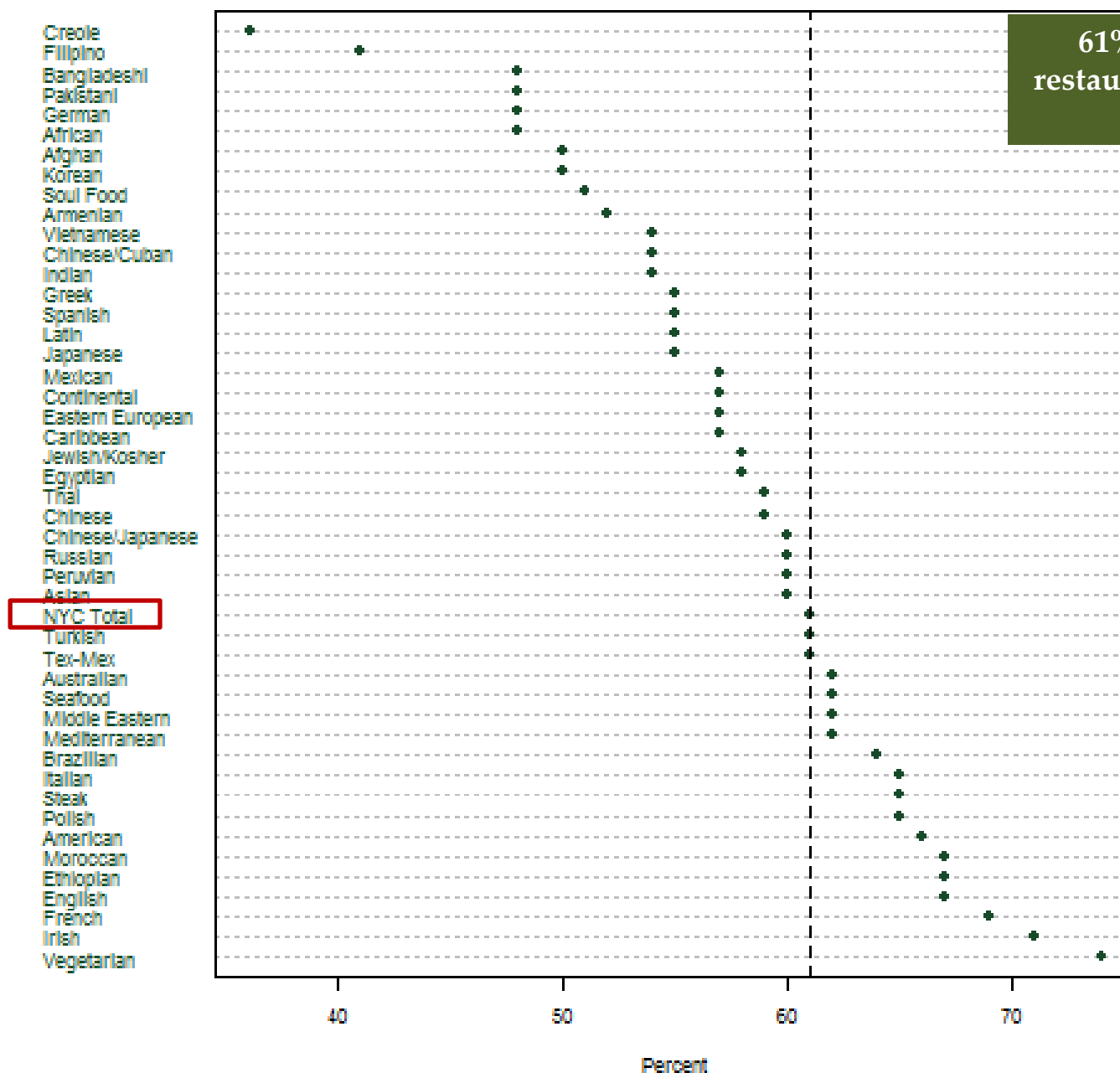


Other Inspections:

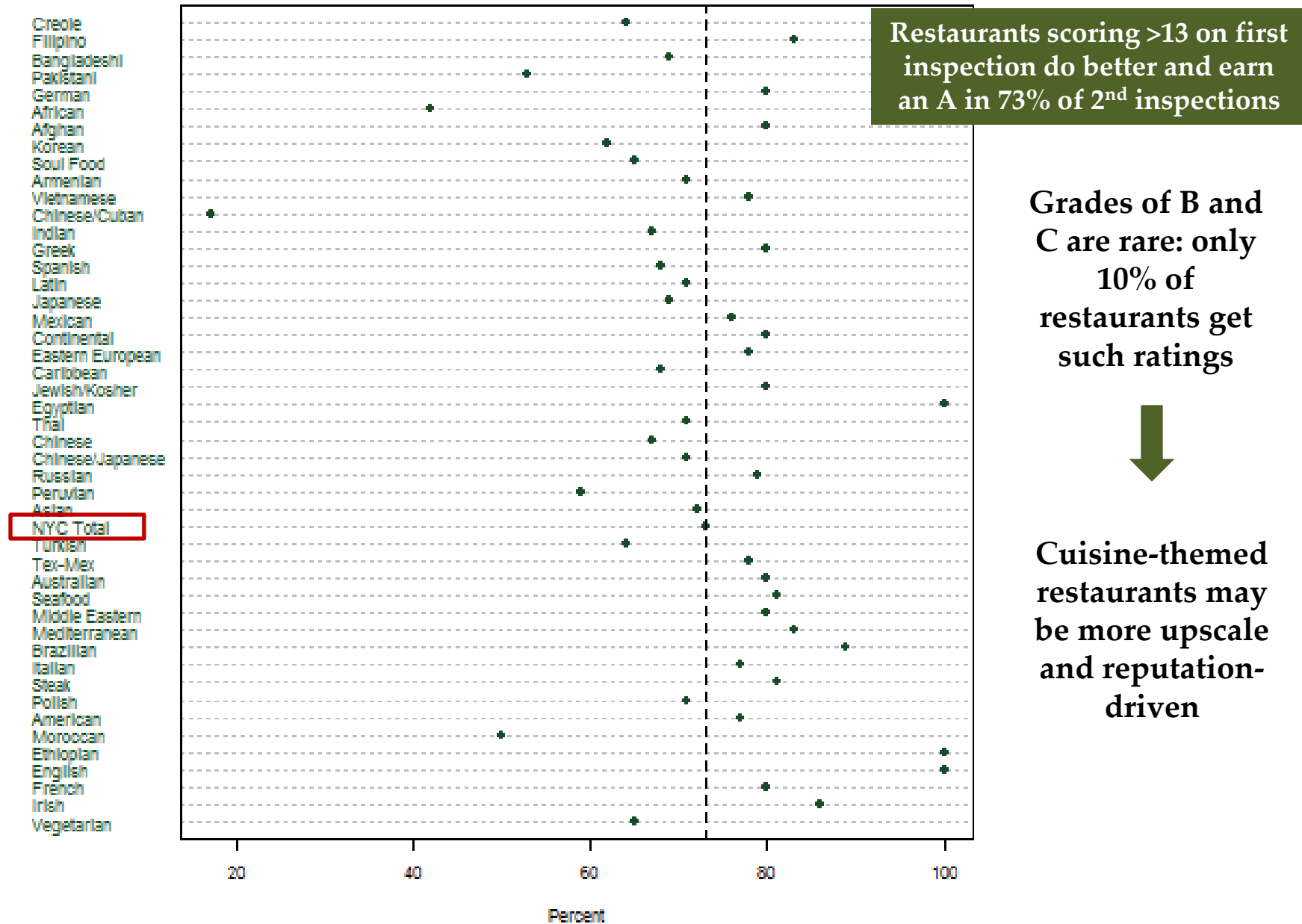
Pre-Permit Inspection	Administrative / Miscellaneous Inspection	Smoke Free Air Inspection	Trans Fat Inspection	Calorie Posting Inspection	Inter-Agency Inspection
9%	3%	2%	1%	<1%	<1%

Percent Cuisines Earning Grade A on 1st Inspection

61% of cuisine-themed restaurants earn an A on first inspection

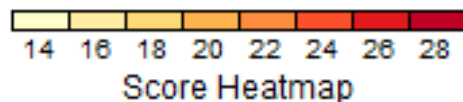
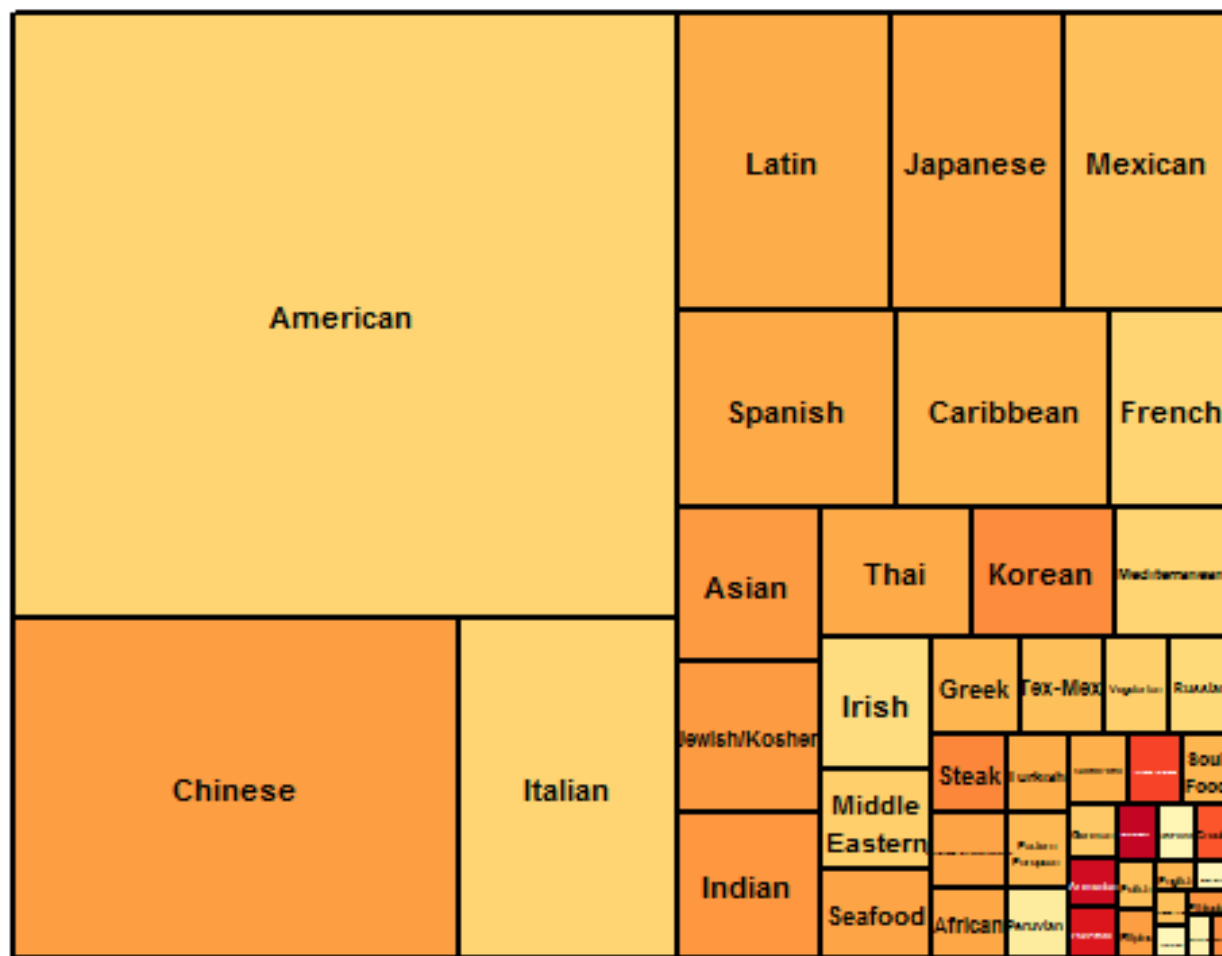


Non-Graded Cuisines Earning Grade A on 2nd Inspection



Source: NYC Open Data, Department of Health and Mental Hygiene, Graphic based on 13,730 inspections for cuisines with at least 10 restaurants

However, the average score on first inspection >13 for all cuisines, indicating that the tail commits a lot of violations

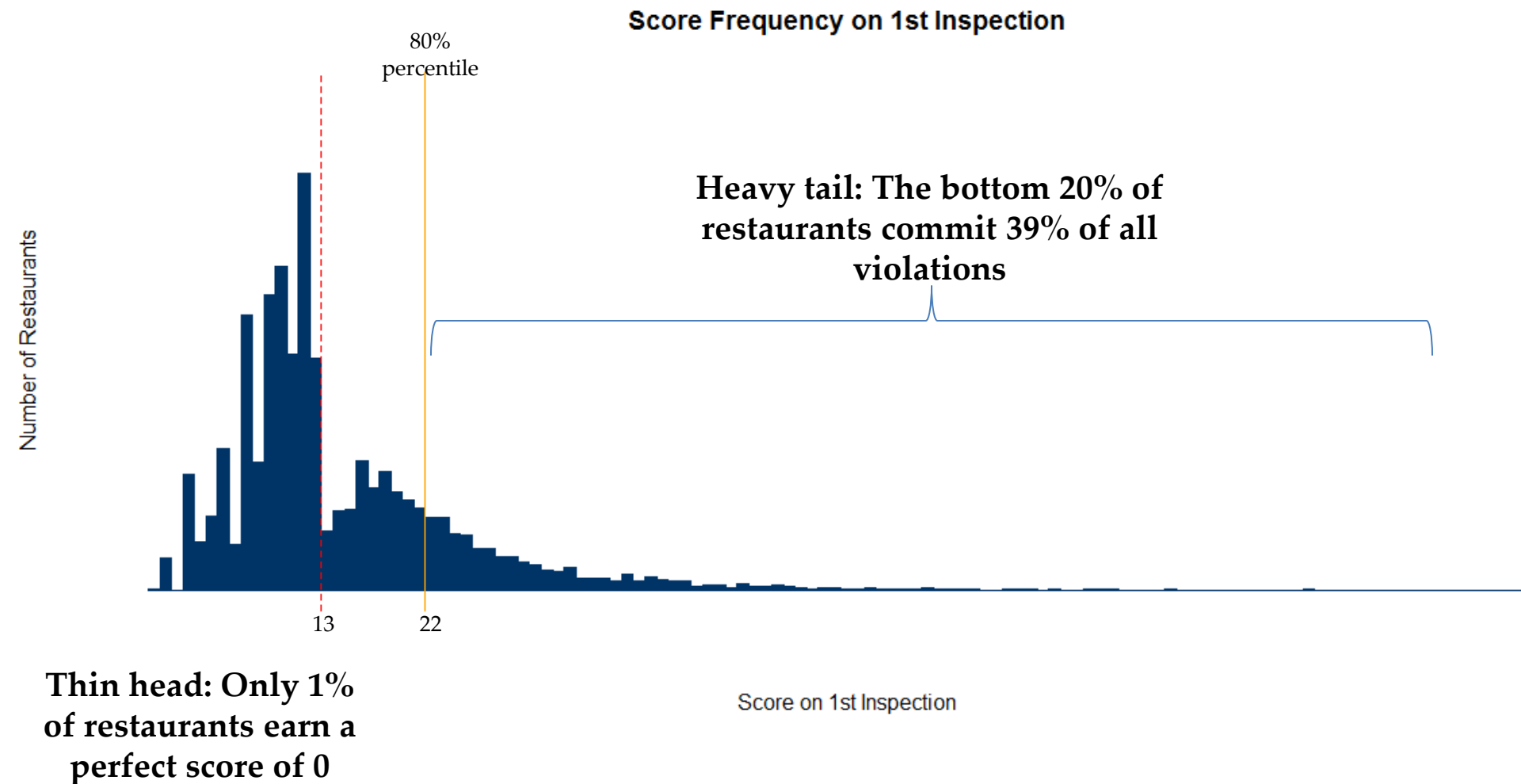


By borough, however, there is almost no difference:

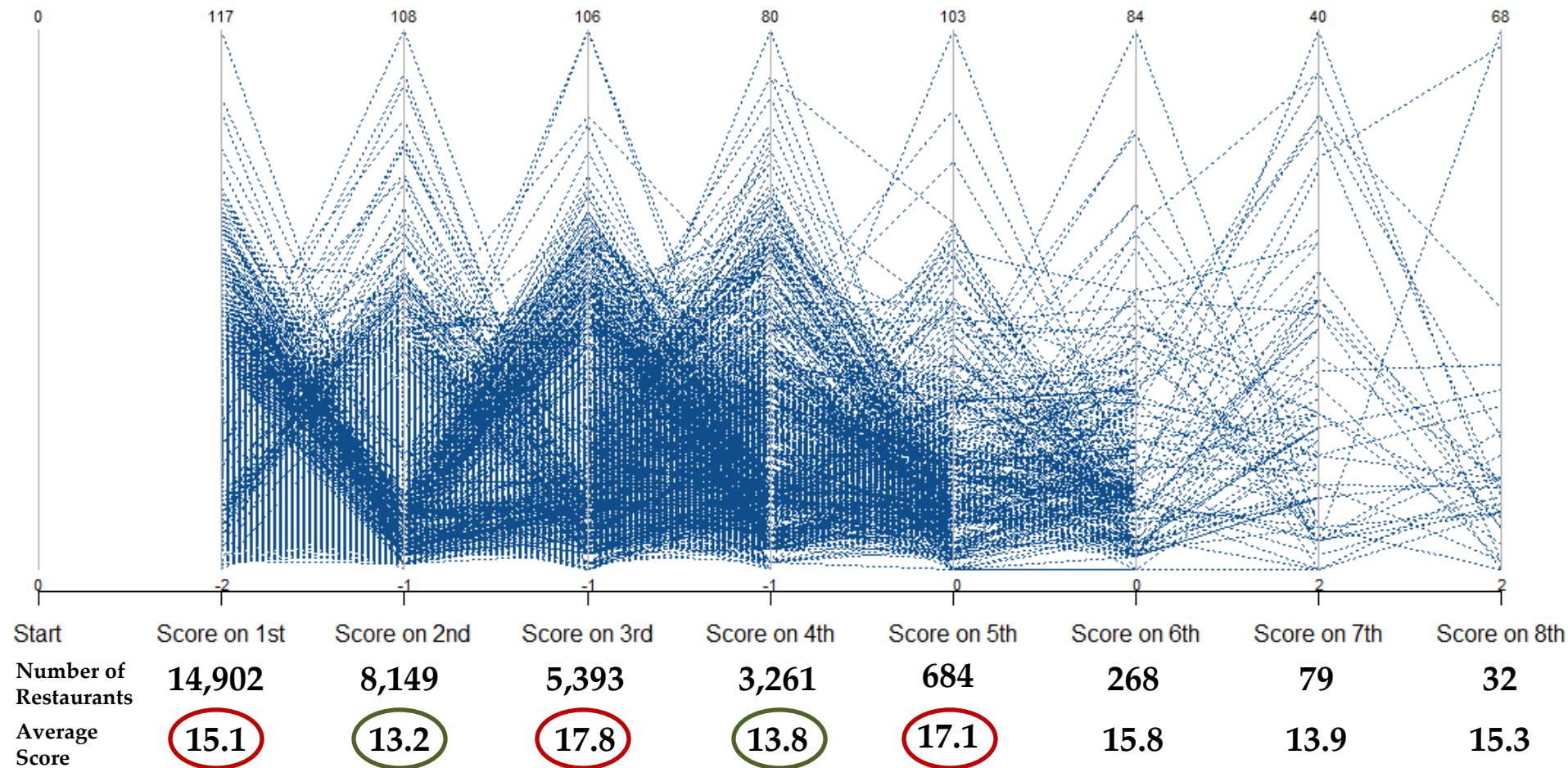
Brooklyn	15.4
Manhattan	15.2
NYC Total	15.1
Staten Island	15.1
Queens	14.9
Bronx	14.4

Borough is not a differentiator in restaurant quality

The A grade cut-off of 13 points separates the field into two clusters - each with a case for its own distribution



A graphic of all inspections in 2015 reveals that a lot of restaurants go in a yo-yo pattern

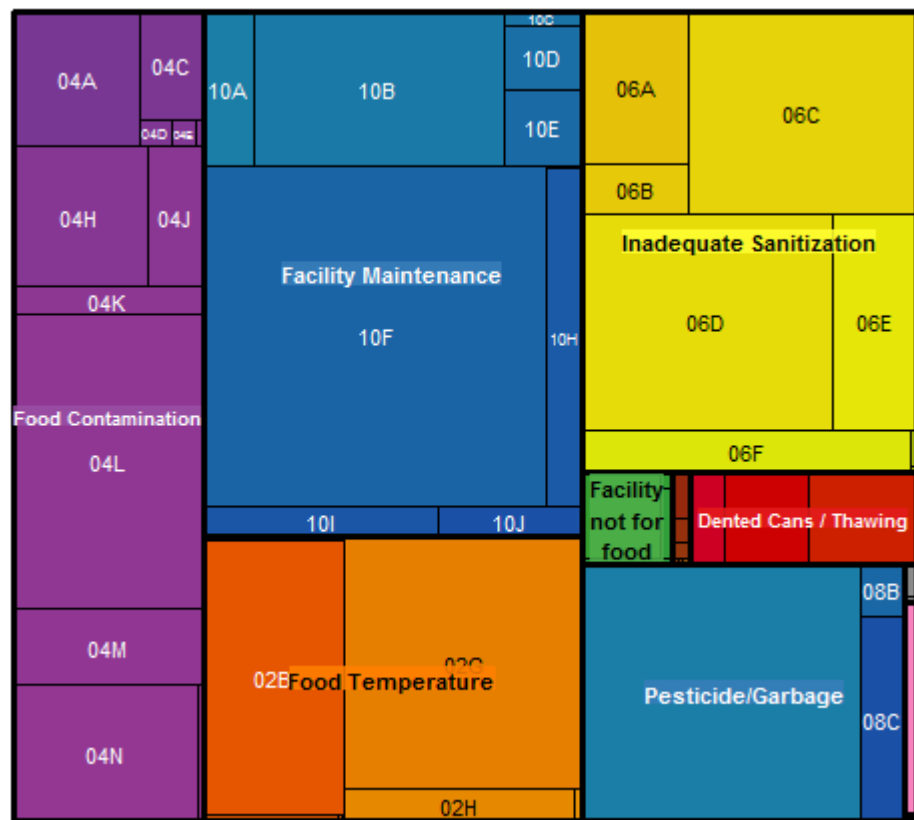


Improvement is not a sustained process, hence many frequent checks required (every 6 months)

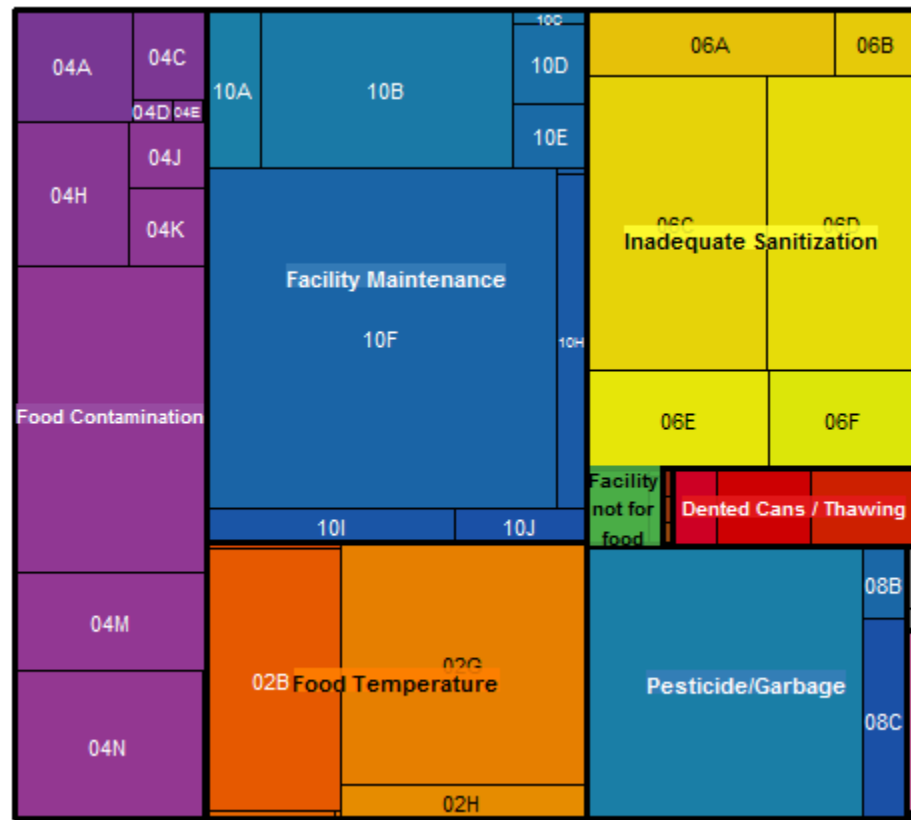
Source: NYC Open Data, Department of Health and Mental Hygiene, Graphic based on 13,730 inspections for cuisines with at least 10 restaurants

Violations decrease 53% between 1st and 2nd check, while restaurants decrease by 45%. However, problems stay the same.

First Inspection



Second Inspection



The violation types are strikingly similar in proportion at every inspection

Appendix: Key to violations – Critical Codes 02

VIOLATION CODE	VIOLATION DESCRIPTION
02A	Food not cooked to required minimum temperature.
02B	Hot food item not held at or above 140F.
02C	Hot food item that has been cooked and refrigerated is being held for service without first being reheated to 165F or above within 2 hours.
02D	Precooked potentially hazardous food from commercial food processing establishment that is supposed to be heated, but is not heated to 140F within 2 hours.
02E	Whole frozen poultry or poultry breasts, other than a single portion, is being cooked frozen or partially thawed.
02F	Meat, fish or molluscan shellfish served raw or undercooked without prior notification to customer.
02G	Cold food item held above 41F (smoked fish and reduced oxygen packaged foods above 38F) except during necessary preparation.
02H	Food not cooled by an approved method whereby the internal product temperature is reduced from 140F to 70F or less within 2 hours, and from 70F to 41F or less within 4 additional hours.
02I	Food prepared from ingredients at ambient temperature not cooled to 41F or below within 4 hours.
02J	Reduced oxygen packaged (ROP) foods not cooled by an approved method whereby the internal food temperature is reduced to 38F within two hours of cooking and if necessary further cooled to a temperature of 34F within six hours of reaching 38F.

Appendix: Key to violations – Critical Codes 03 and 04

03A	Food from unapproved or unknown source or home canned. Reduced oxygen packaged (ROP) fish not frozen before processing; or ROP foods prepared on premises transported to another site.
03B	Shellfish not from approved source, improperly tagged/labeled; tags not retained for 90 days.
03C	Eggs found dirty/cracked; liquid, frozen or powdered eggs not pasteurized.
03D	Canned food product observed swollen, leaking or rusted, and not segregated from other consumable food items .
03E	Potable water supply inadequate. Water or ice not potable or from unapproved source. Cross connection in potable water supply system observed.
03F	Unpasteurized milk or milk product present.
03G	Raw food not properly washed prior to serving.
04A	Food Protection Certificate not held by supervisor of food operations.
04B	Food worker prepares food or handles utensil when ill with a disease transmissible by food, or have exposed infected cut or burn on hand.
04C	Food worker does not use proper utensil to eliminate bare hand contact with food that will not receive adequate additional heat treatment.
04D	Food worker does not wash hands thoroughly after using the toilet, coughing, sneezing, smoking, eating, preparing raw foods or otherwise contaminating hands.
04E	Toxic chemical improperly labeled, stored or used such that food contamination may occur.
04F	Food, food preparation area, food storage area, area used by employees or patrons, contaminated by sewage or liquid waste.
04G	Unprotected potentially hazardous food re-served.
04H	Raw, cooked or prepared food is adulterated, contaminated, cross-contaminated, or not discarded in accordance with HACCP plan.
04I	Unprotected food re-served.
04J	Appropriately scaled metal stem-type thermometer or thermocouple not provided or used to evaluate temperatures of potentially hazardous foods during cooking, cooling, reheating and holding.
04K	Evidence of rats or live rats present in facility's food and/or non-food areas.
04L	Evidence of mice or live mice present in facility's food and/or non-food areas.
04M	Live roaches present in facility's food and/or non-food areas.
04N	Filth flies or food/refuse/sewage-associated (FRSA) flies present in facility's food and/or non-food areas. Filth flies include house flies, little house flies, blow flies, bottle flies and flesh flies. Food/refuse/sewage-associated flies include fruit flies, drain flies and Phorid flies.
04O	Live animals other than fish in tank or service animal present in facility's food and/or non-food areas.

Source: NYC Open Data, Department of Health and Mental Hygiene, Graphic based on 13,730 inspections for cuisines with at least 10 restaurants

Appendix: Key to violations – Critical Codes 05, 06, 07

05A	Sewage disposal system improper or unapproved.
05B	Harmful, noxious gas or vapor detected. CO ~1 3 ppm.
05C	Food contact surface improperly constructed or located. Unacceptable material used.
05D	Hand washing facility not provided in or near food preparation area and toilet room. Hot and cold running water at adequate pressure to enable cleanliness of employees not provided at facility. Soap and an acceptable hand-drying device not provided.
05E	Toilet facility not provided for employees or for patrons when required.
05F	Insufficient or no refrigerated or hot holding equipment to keep potentially hazardous foods at required temperatures.
05H	No facilities available to wash, rinse and sanitize utensils and/or equipment.
06A	Personal cleanliness inadequate. Outer garment soiled with possible contaminant. Effective hair restraint not worn in an area where food is prepared.
06B	Tobacco use, eating, or drinking from open container in food preparation, food storage or dishwashing area observed.
06C	Food not protected from potential source of contamination during storage, preparation, transportation, display or service.
06D	Food contact surface not properly washed, rinsed and sanitized after each use and following any activity when contamination may have occurred.
06E	Sanitized equipment or utensil, including in-use food dispensing utensil, improperly used or stored.
06F	Wiping cloths soiled or not stored in sanitizing solution.
06G	HACCP plan not approved or approved HACCP plan not maintained on premises.
06H	Records and logs not maintained to demonstrate that HACCP plan has been properly implemented.
06I	Food not labeled in accordance with HACCP plan.
07A	Duties of an officer of the Department interfered with or obstructed.

Appendix: Key to violations – Non-Critical Codes 08, 09, 10

08A	Facility not vermin proof. Harborage or conditions conducive to attracting vermin to the premises and/or allowing vermin to exist.
08B	Covered garbage receptacle not provided or inadequate, except that garbage receptacle may be uncovered during active use. Garbage storage area not properly constructed or maintained; grinder or compactor dirty.
08C	Pesticide use not in accordance with label or applicable laws. Prohibited chemical used/stored. Open bait station used.
09A	Canned food product observed dented and not segregated from other consumable food items.
09B	Thawing procedures improper.
09C	Food contact surface not properly maintained.
10A	Toilet facility not maintained and provided with toilet paper, waste receptacle and self-closing door. Plumbing not properly installed or maintained; anti-siphonage or backflow prevention device not provided where required; equipment or floor not properly drained; sewage disposal system in disrepair or not functioning properly.
10B	Lighting inadequate; permanent lighting not provided in food preparation areas, ware washing areas, and storage rooms.
10C	
10D	Mechanical or natural ventilation system not provided, improperly installed, in disrepair and/or fails to prevent excessive build-up of grease, heat, steam condensation vapors, odors, smoke, and fumes.
10E	Accurate thermometer not provided in refrigerated or hot holding equipment.
10F	Non-food contact surface improperly constructed. Unacceptable material used. Non-food contact surface or equipment improperly maintained and/or not properly sealed, raised, spaced or movable to allow accessibility for cleaning on all sides, above and underneath the unit.
10G	Food service operation occurring in room used as living or sleeping quarters.
10H	Proper sanitization not provided for utensil ware washing operation.
10I	Single service item reused, improperly stored, dispensed; not used when required.
10J	""Wash hands"" sign not posted at hand wash facility.

R Graphics used in this study:

- **Dot Chart**
- **Treemap**
- **Histogram**
- **Parallel Coordinates Graph**