

Will Letter Grades in NYC Help prevent Salmonella Infections?

[Announcer] This program is presented by the Centers for Disease Control and Prevention.

[Sarah Gregory] Hi, I'm Sarah Gregory, and today I'm talking to Melanie Firestone. Melanie is a PhD candidate at the University of Minnesota School of Public Health. We'll be discussing her article about the use of letter grades for restaurant inspection scores in New York City. Welcome, Melanie.

[Melanie Firestone] Thank you, I'm excited to be here.

[Sarah Gregory] So, your study is about the effects of letter grades in restaurant health inspections on *Salmonella* infections. You compared implementation of letter grades in New York City on the rest of New York, without letter grades. First of all, I'm kind of surprised by this. I thought everywhere had these letter grades. Is this not true, and are there other types of grading being used in restaurants?

[Melanie Firestone] That's right. State and local health departments are responsible for inspecting food service establishments and for choosing how to disclose the information, and disclosure programs can actually vary quite greatly across state and local jurisdictions. And some places, like New York City and Los Angeles, use letter grades, but others use other systems, such as numerical scores or categorical rankings, such as a "Pass" or a "Conditional Pass" score. But even among places that use letter grades, there can be a lot of variation in how the grade is determined, and even where the placard is posted. For instance, in North Carolina, there is a statewide program where letter grades are based on a 100-point numerical scale and the signs must be posted upon entry. A larger number means fewer violations. By contrast, in New York City, a *lower* score means fewer violations, and the placard must be visible *before* entry.

[Sarah Gregory] So, if you have like a "12," that's a great score, and somewhere else...and in New York, is that what you're saying?

[Melanie Firestone] Correct. So, a "12" would be an "A" still, by New York standards, but would be likely a restaurant that would not be operational in North Carolina.

[Sarah Gregory] Gotcha, okay. Why did you decide to do this study?

[Melanie Firestone] There's been a lot of interest in public disclosure of restaurant inspection results, and letter grading, specifically, but there really haven't been many studies that have looked at the public health impact of programs like this. Because of New York...of how New York City implemented their program, it provided a valuable case study for assessing the impact of a public disclosure program in a way that hasn't previously been done.

[Sarah Gregory] And what time period did it cover?

[Melanie Firestone] We looked at *Salmonella* infection rates from 1994 to 2015. This allowed us to look at the trends in *Salmonella* infection rates over time and cover the period when New York City started its letter grade program.

[Sarah Gregory] Did you have any expectations when you began the study?

[Melanie Firestone] We anticipated seeing a decline in *Salmonella* infections in New York City after the city started its letter grade program. Letter grades actually represent transparency, and transparency can trigger a feedback loop that leads to improved sanitary conditions in restaurants, which in turn, can lead to a reduction in illness. Letter grading provides information to consumers, when and where they need it, allowing them to make informed decisions about potential risks. Restaurant operators then perceive having a lower grade as bad for business and, therefore, have an incentive to improve and maintain sanitary conditions. Better sanitary conditions in restaurants can mean a reduction in the risk of foodborne illness. New York City, the department of health, has actually published a study previously which showed that letter grades...the letter grade program had led to improvements in sanitary conditions in their restaurants. So we went above and beyond and showed the public health impact of this.

[Sarah Gregory] So you're saying that letter grades are more beneficial for public understanding than these numerical grades or other kinds of grades, yes?

[Melanie Firestone] So, we...we're not saying that specifically, we're just saying that there has been a lot of interest in letter grading, and we have looked at New York's program specifically. Additional studies would be needed to look at other programs and to see the public health impact of those.

[Sarah Gregory] How'd you go about conducting this study?

[Melanie Firestone] We did an analysis to compare *Salmonella* infections before and after New York City started its letter grade program, and used the rest of the state as a control to account for spatial trends, since the rest of the state didn't have this program.

[Sarah Gregory] And...what did you find?

[Melanie Firestone] In 2005, New York City began weighting inspection violations to get restaurant operators to focus on important food safety practices. But our study showed that this did not have an impact on *Salmonella* infection rates. Our study showed, by contrast, that in 2010, when New York City implemented a letter grade program, where the inspection results were converted to a simple letter grade visible to patrons before they entered the restaurant, *Salmonella* infection rates declined an average of 5.3 percent per year in New York City, compared to the rest of the state.

[Sarah Gregory] And why do you think a letter grade helps to prevent *Salmonella* infections?

[Melanie Firestone] So, as mentioned earlier, letter grading promotes transparency, which triggers a feedback loop that improves sanitary conditions in restaurants, reducing the occurrence of risk factors associated with *Salmonella*. *Salmonella* provides a good measure of restaurant food safety practices because it can take advantage of the five major risk factors for foodborne illness, which are improper cooking, temperature, improper holding temperature, improper food sources, cross-contamination, and food worker hygiene.

[Sarah Gregory] Okay, so what do these findings mean for public health, in general?

[Melanie Firestone] This study shows the beneficial public health impact of New York City's letter grade program in regards to *Salmonella* infection. This is particularly relevant at a time when we really haven't seen declines in *Salmonella* infection rates nationally. Previous research has shown that restaurants are frequent settings for outbreak and sporadic (non-outbreak) cases of *Salmonella* infections. And our study provides evidence that letter grade programs can be a feasible tool for reducing *Salmonella* infections, an area that we think lends itself to further study.

[Sarah Gregory] Tell us about where you work and what you do there. And I know you're a PhD student, so I imagine most of your work is based around that, your research and such. And how did you become involved in this particular study?

[Melanie Firestone] So, my research focus is on reducing the burden of foodborne illness, using restaurants and *Salmonella* as a lens, so this is just one thing that we're looking at, as a part of that. I first became interested in this study because, prior to starting the PhD, I had only ever lived in locations that had letter grade programs. I'm actually from North Carolina, and then North Carolina has had a program of this sort since the 1940s. And so, I had always had the opportunity to use postings at restaurants to make a decision, once I'm there, whether or not I want to eat there. Once I moved to Minnesota, where we don't have any kind of public disclosure system like this, I started to become curious about the public health impact of these programs, and began working with my advisor, Dr. Craig Hedberg, to conceptualize the study.

[Sarah Gregory] Thank you so much for taking the time to talk with me today, Melanie.

[Melanie Firestone] Thank you for the opportunity.

[Sarah Gregory] Listeners can read the December 2018 article, Restaurant Inspection Letter Grades and *Salmonella* Infections, New York, New York, USA, online at cdc.gov/eid.

I'm Sarah Gregory for *Emerging Infectious Diseases*.

[Announcer] For the most accurate health information, visit cdc.gov or call 1-800-CDC-INFO.