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Salmonella: A Heated Discussion

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Salmonella: The mere mention of the four-syllable word strikes fear in diners and restaurant owners worldwide. Many different bacteria and viruses can cause foodborne illness, but Salmonella is the classic. Contaminated fresh eggs used for making hollandaise sauce once caused a large outbreak in one of our most famous Creole eateries. Years later in 2001, Salmonella-laden juice from contaminated raw chicken dripping into a pan of cooked bell peppers caused an infamous St. Bernard Parish outbreak.

Just how likely is a restaurant meal a ticket to a foodborne illness in Louisiana? Your faithful medical correspondent hears about these matters on a regular basis. I get calls from my patients with gastrointestinal woes. I get calls from private citizens who still think I'm the city health director, a position I last held in 1995. And I get calls from attorneys looking into these matters from both sides of the fence.

The federal Foodborne Disease Outbreak Surveillance System is an online database listing foodborne outbreaks by state. According to this database, Louisiana had 72 foodborne related outbreaks between 1998 and 2011. During this 13-year period, only 14 reported outbreaks were traced to contaminated meals at restaurants or banquet facilities. Other common sources of infection included private homes, schools, jails, workplace cafeterias, camps and churches, in that order.

Just like our city's crime statistics, these published statistics underestimate the true incidence of foodborne illness in Louisiana with one difference: Public health officials freely admit that there are far more foodborne outbreaks than make the official statistics. But there's good news for restaurant lovers. Most diagnosed Salmonella infections are sporadic and not related to restaurant food. A man I'll call Theo Calvin had a typical experience.

Calvin fuels his tank every morning with a big breakfast. One Monday he dove into a New Orleans area restaurant just off Interstate 10 popular for its all-you-can-eat breakfast buffet. He quickly inhaled eggs, a biscuit with gravy, a sausage patty, hash browns, cooked rice of some sort and cantaloupe. He washed it all down with hot coffee.

Two hours later he felt queasy. By noon he knew something was amiss and suspected food poisoning. He stopped at a fried chicken outlet on the Northshore, not for chicken but for a run to the bathroom. First he vomited, and then his bowels exploded with diarrhea. He felt better after these gastrointestinal eruptions, but his continued frequent and loose bowel movements didn't allow for

a restful night's sleep.

Calvin stayed home Tuesday. He couldn't control what had become near constant diarrhea and unrelenting nausea. Then what began as a chill turned into persistent fever. By Wednesday, he was in his doctor's office. She took one look and arranged for his admission to NorthShore Regional Medical Center. (I know how she felt. A busy office with a filled waiting room is no place for an acutely ill patient with vomiting and profuse diarrhea.)

At NRMC, Calvin had an elevated white blood cell count, and a microscopic examination of his stool also showed numerous white blood cells. His admission diagnosis was infectious colitis, and he received intravenous fluids and antibiotics. By the time his fever resolved, the laboratory had found a *Salmonella* species growing in his stool culture.

After he was discharged from the hospital, Calvin dropped a nickel on the restaurant. He later testified that a state inspector called him back saying an after-the-fact inspection had found problems. The hot food in the buffet line was being kept at 120 degrees when it was suppose to be maintained at 140 degrees.

Calvin was livid. He called an attorney who filed a suit against the restaurant. There was only one problem: Even though the buffet line had some health code violations, it was obviously not the source of Calvin's illness. The breakfast buffet was innocent by incubation period.

Ingested *Salmonella* must first survive an acid bath in the stomach before they attach and multiply in the intestinal wall reaching a critical mass necessary to cause symptoms. The initial multiplication of *Salmonella* in the gut is akin to an orchestra warming up. A gurgle here or there, maybe the sensation of something amiss, but no real symptoms until the end of the incubation period, which varies depending on the species of bacteria, the ingested dose and the overall health status of the victim.

The incubation period from ingestion of tainted food to onset of initial gastrointestinal symptoms differs for different foodborne illnesses, but for *Salmonella* infections the incubation period generally ranges from one to three days but can be as long as a couple of weeks if only a few *Salmonella* organisms are ingested.

Calvin's symptoms started two hours after that Monday breakfast. As any sophomore medical student knows this timeline was obviously too short for Calvin to have contracted his *Salmonella* from the breakfast buffet. His infection could have been acquired from any food or drink ingested days before his onset of symptoms. Like most folks diagnosed with *Salmonella* infection in Louisiana, he had what epidemiologists call a sporadic case not involving others who ate the same food. Improper food handling at home with cross contamination is an often source of transmission.

But what about Calvin's insistence that there had been an off-taste to the rice and cantaloupe? The initial symptom for foodborne diseases is often an altered sense of smell or taste. This leads a person to assume incorrectly that the last food they ate before more typical symptoms such as vomiting or diarrhea is the culprit food.

Salmonella commonly contaminate a variety of ingested products, with eggs and poultry products leading the list. More recent *Salmonella* outbreaks were traced to consumption of various contaminated products including herbs, green onions, tomatoes, peanut butter, ground beef, mangoes, scrapped ground tuna used in sushi rolls and even dog food. Transmission can also be from pets and person-to-person.

Gag Orders

Past, current, and in-between restaurant reviewers on foodborne illness experiences

"In my nine years as the restaurant critic at the Picayune, I only remember food poisoning happening once, and it was my dining companion and not me. We ate at a now defunct place in the lakefront area. Paulette Perrin called me the next day saying she had stayed up all night vomiting. I forgot what specific food item we decided it was." – Gene Bourg, restaurant critic at The Times-Picayune 1986-'95

"What I think may be food poisoning symptoms may be just my overdoing it, but at least twice a year I may feel bad, vomit, and have not much of an appetite for a day or so. But I eat out 8 to 10 times a week and just chalk it up to the cost of doing business." (P.S. To Anderson's physician from the author: If Anderson were my patient, I would check him for gallbladder disease.) – Brett Anderson,

restaurant critic at The Times-Picayune who's finishing a sabbatical as a Neiman Fellow at Harvard University.

"Astonishingly, I've never gotten it. The closest thing would be on an extended trip to China. I intentionally guzzled from the tap to "acclimate" myself to the regional whatevers in the water supply. I had an upset stomach for maybe two days and then for the next six weeks or so there, I didn't have a problem. And I ate some funky stuff. I don't even want to talk about some of the stuff I ate there."

– Jay Forman, Food and Dining Editor at New Orleans Magazine since 2007

