



Georgia Department of Public Health

A "Snowjam 2014" Perspective on Georgia Outbreaks



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State Epidemiologist
March 28, 2014

We Protect Lives.

Tuesday, January 28, 2014



We Protect Lives.

Let's Relive My Snowjam Journey (and relate it to GA Outbreaks)



- Vehicle: “Redwing”
- Distance: 19 miles
- Duration: 16 hours
- Speed: 0.8 MPH
- Snowfall: 2 inches

Let's Relive My Snowjam Journey (and relate it to GA Outbreaks)

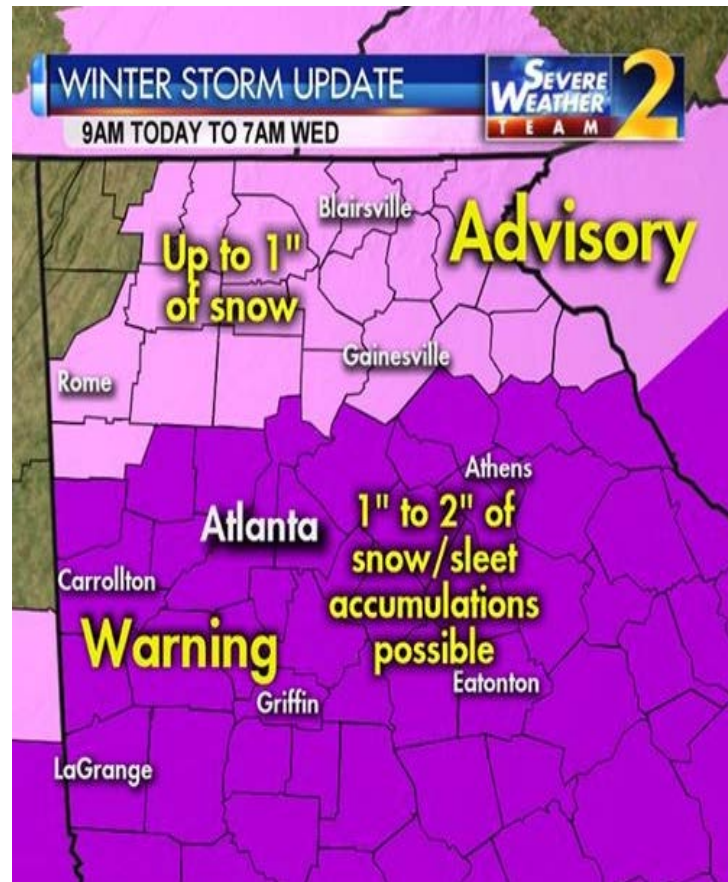


1. Ignoring Warning Messages I
2. Ignoring Warning Messages II
3. Frozen In Place/Paralyzed
4. “The Hunger Games”
5. Catching Fire
6. Inadequate Restroom Facilities
7. Home Sweet Home



Ignoring Warning Messages I

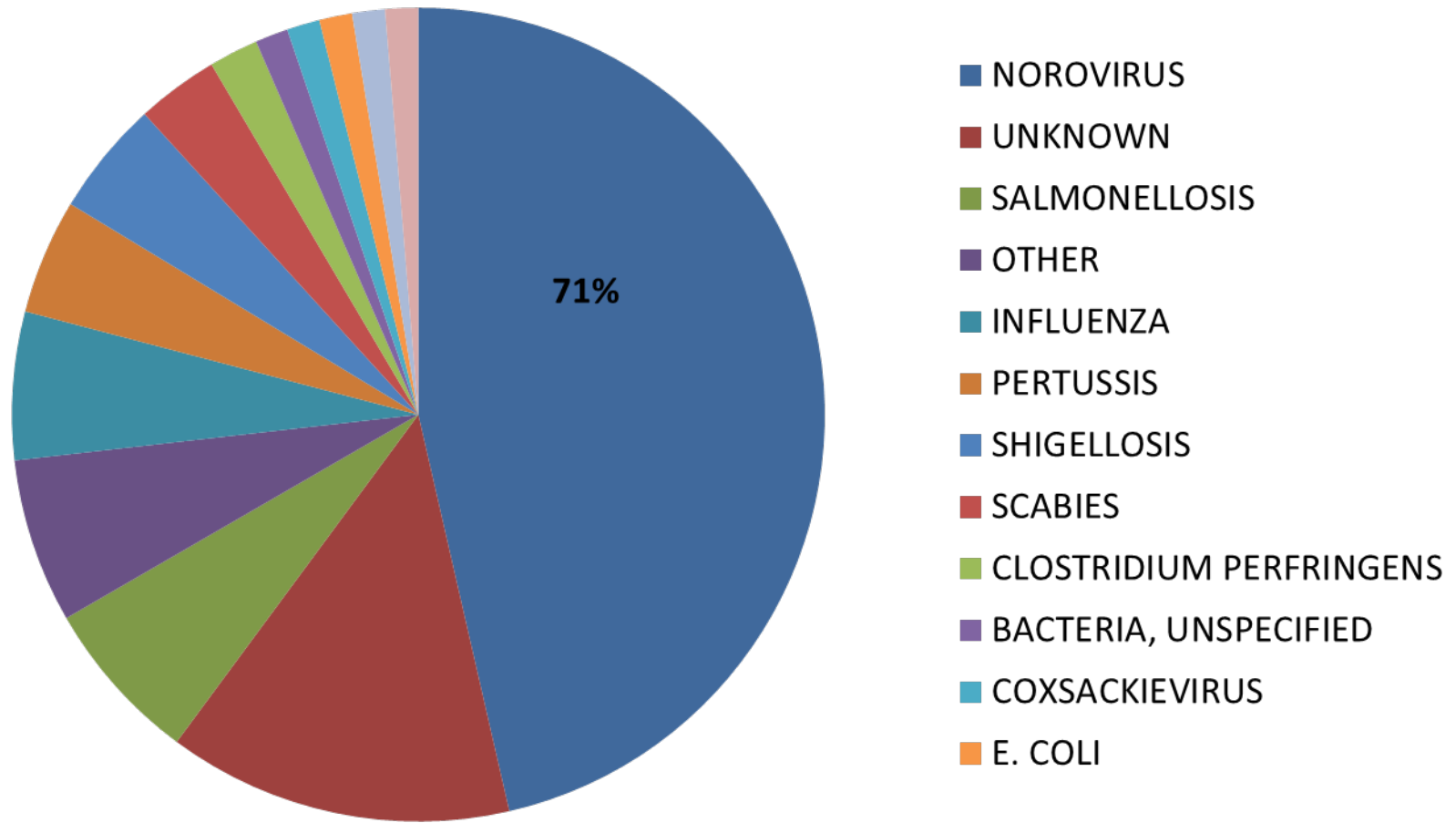
Forecast for Tuesday



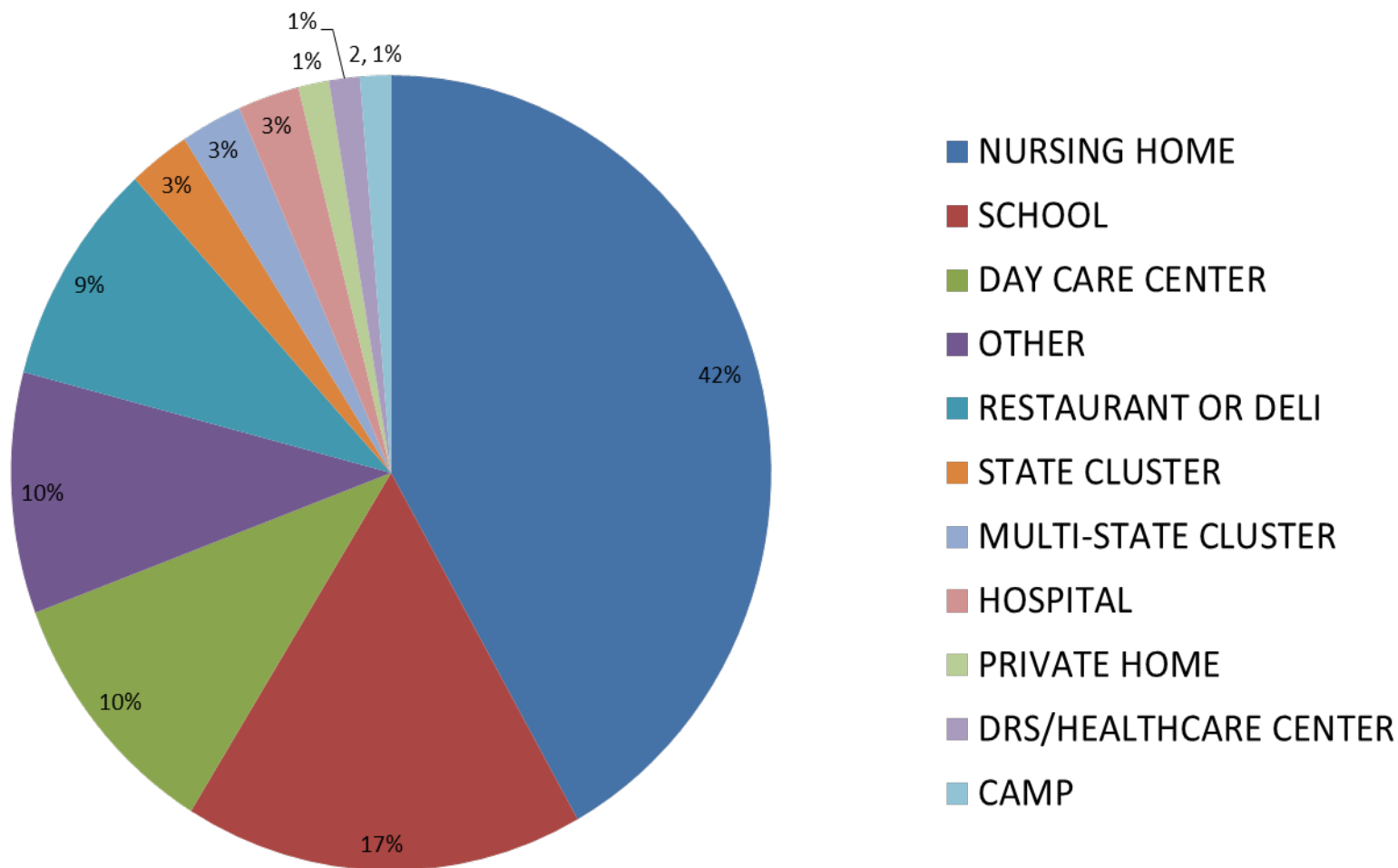
Drive to Work Downtown



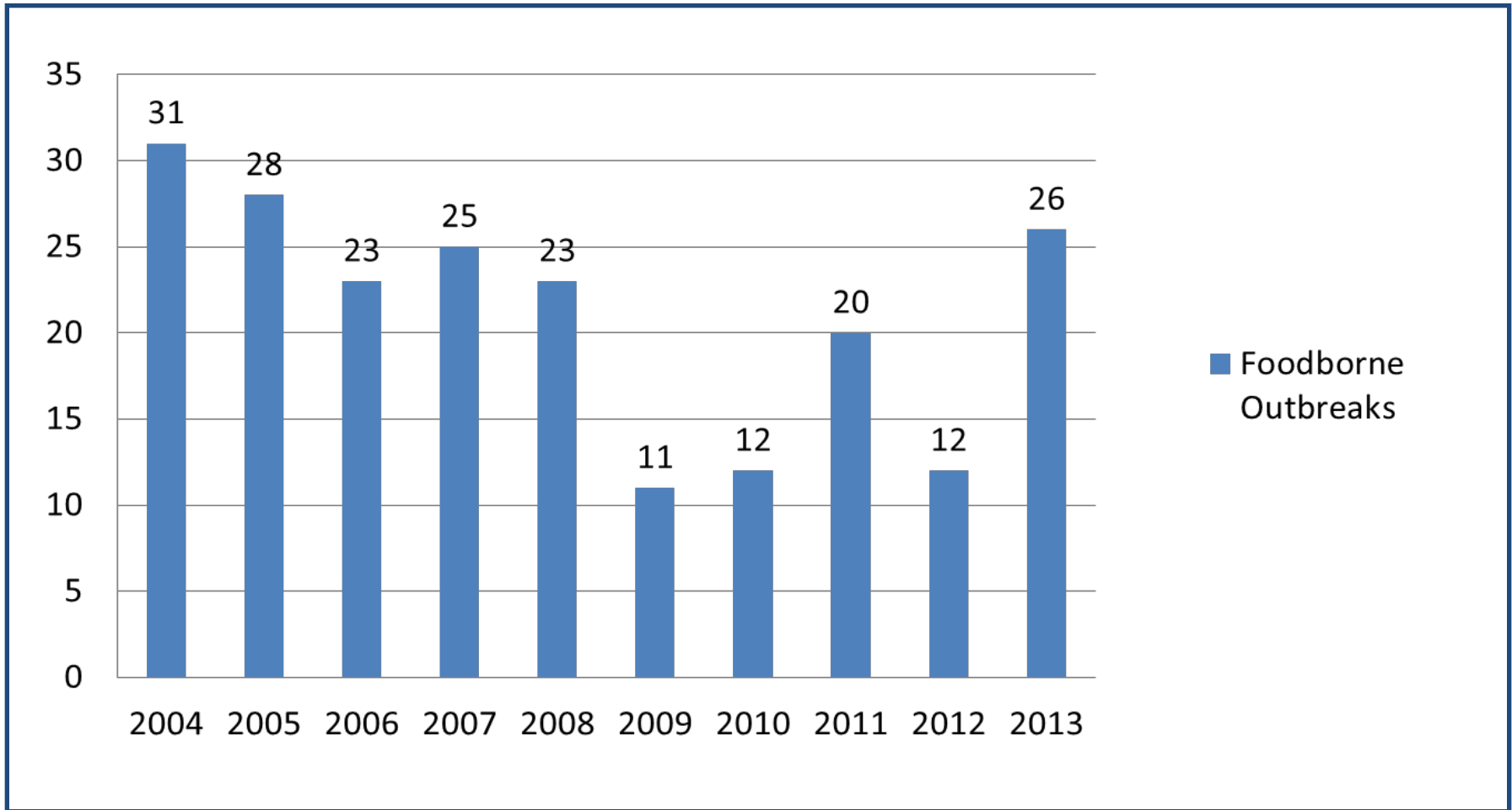
Etiologies of Confirmed Georgia Outbreaks, 2013 (n=153)



2013 Georgia Outbreaks: Settings (n=153)



Confirmed Foodborne Outbreaks, Georgia, 2004-2013



Ignoring Warning Messages II



Outbreak of *Mycoplasma pneumoniae* Infections among University Students

What Outbreak? Students Tune Out Tweeted Health Warnings

by DEBORAH FRANKLIN

August 01, 2013 2:11 PM

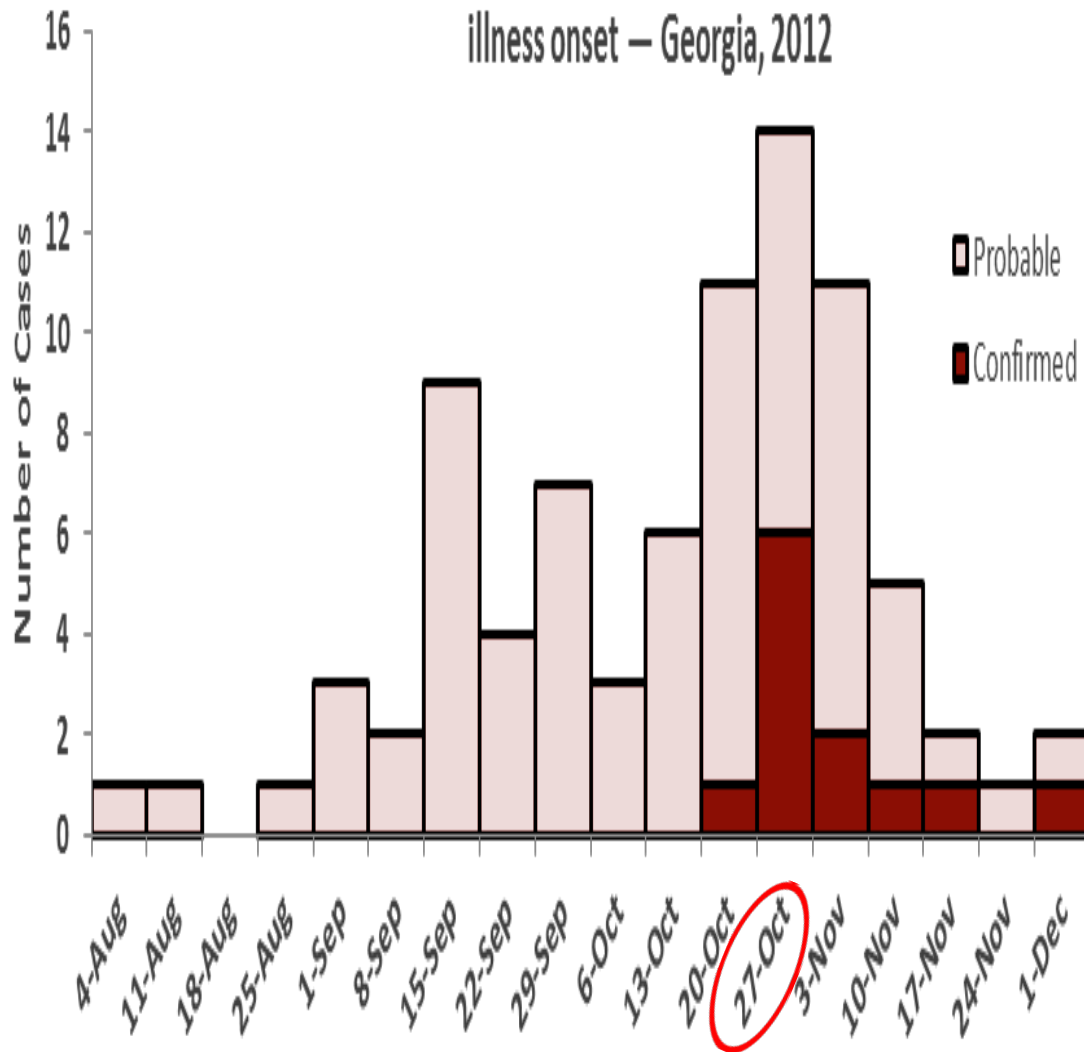


Buzz, Georgia Tech's mascot, wasn't the only bug in the students' midst last fall. An outbreak of bacterial pneumonia sickened at least 83 in what the CDC called the largest known outbreak at a university in 35 years.

Collegiate Images/Getty Images

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Number of *Mycoplasma* cases (n=83) among University X students by week of illness onset — Georgia, 2012



Case Characteristics	No. Cases (%)
Total cases	83 (100)
Confirmed	12 (14)
Probable	71 (86)
Sex	
Male	60 (72)
Female	23 (28)
Median age (years)	21
Age range (years)	18-30
Underlying conditions	
Asthma	10 (12)
Allergies	5 (6)
Radiographs taken	82 (99)
Evidence of pneumonia	61 (74)

Prevention: Getting the Word Out

- Prevention of *M. pneumoniae* spread relies on health behaviors like hand and respiratory hygiene, and self-isolation when ill.
- However, in a survey of 105 GT students in December, 54% said they were unaware of this outbreak despite a campuswide e-mail message, social media postings, and posters on campus.
- Students can be hard to reach—information overload.
- More research needed to understand best methods to deliver health warnings to students.

Frozen in Place/Paralyzed

WEDNESDAY, JAN. 29, 2014 ajc.com | ajc.com

Sunny High 62, Low 37
Forecast: Sunny, with a chance for rain on Thursday. High 65, Low 37. Saturday: Partly cloudy, 63-74. Sunday: Partly cloudy, 63-74.

The Atlanta Journal-Constitution

Credible. Compelling. Complete.

FREE ALL-DAY ACCESS ON MYAJC.COM AND TODAY'S PAPER APP

FROZEN IN PLACE

» Hundreds of kids, teachers stranded at schools overnight. » Motorists stuck on icy roadways for hours on end. » Governor declares state of emergency for all 159 counties.

Road to gridlock

► **TRAFFIC:** Commuters across metro Atlanta began their daily commute on Wednesday morning, but many were stuck in traffic for hours. White traffic lights at many Atlanta area intersections were out, and some were broken. **► **ROADS:** Many roads were closed or had lane closures. **► **TRUCKS:** Many trucks were stuck in traffic. **► **TRUCKS:** Many trucks were stuck in traffic. **► **TRUCKS:** Many trucks were stuck in traffic.********



Snow, ice lock up traffic as commuters clog roads

The snow is over, but early morning temperatures were expected to drop into the teens. Snowy slush is on the forecast, with highs in the low 50s - not enough to melt the 1 to 2 inches of ice and snow that has already covered the ground.

Commuters

State transportation officials predict road conditions will continue to be treacherous across most of metro Atlanta. They are advising people to stay home if they can, and warning those who must

Schools

Most of Atlanta's public schools are closed today. For a complete list of closings, visit ajc.com.

Government

Gov. Nathan Deal issued the order after the state agency to close today. Some local government officials have announced closings and delays across metro Atlanta. He asks to call or check online first if you have government business.

Weather updates all day long

A new assessment Tuesday, traffic and weather can change in minutes - and change our lives for hours. To keep you up on the latest developments, visit ajc.com and ajc.com as they update us on the latest coverage, from the latest forecasts, to snowfall, to traffic disruptions - ajc.com.

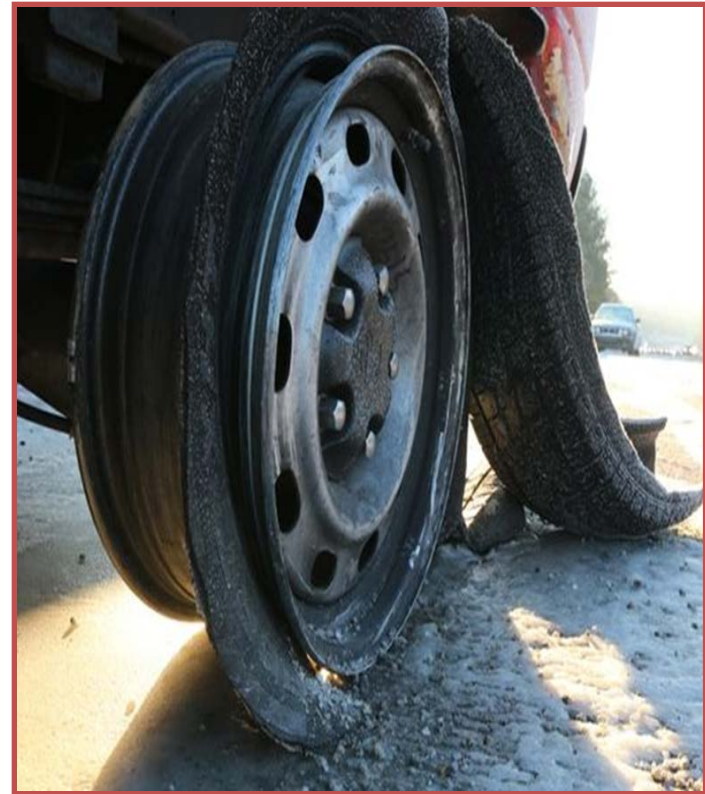
Snow commutes

Snow, traffic take toll

It took more than four hours for one teacher to get home. Meanwhile, stranded travelers commiserated at Hartsfield Airport. But now compared to a man who goes to work in a car on a congested Interstate. Read their stories. ajc.com

By Craig Schreiber
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and Maria Simons
maria.simons@ajc.com

By Tom Ichniowski
tom.ichniowski@ajc.com



Outbreak of Foodborne Botulism Texas and Georgia, 2013

- Botulism is a rare but serious neuroparalytic illness that can lead to respiratory failure and death.
- In December 2013, 4 cases of botulism were identified among 8 men of Middle Eastern descent who shared meals at an apartment in Amarillo, Texas.
- All four were hospitalized (one in Augusta, GA); two required mechanical ventilation and two were treated with botulism anti-toxin.
- Epidemiologic investigation implicated one batch of homemade **turshi** (fermented vegetables) eaten over a one-month period to be associated with illness.

Turshi??

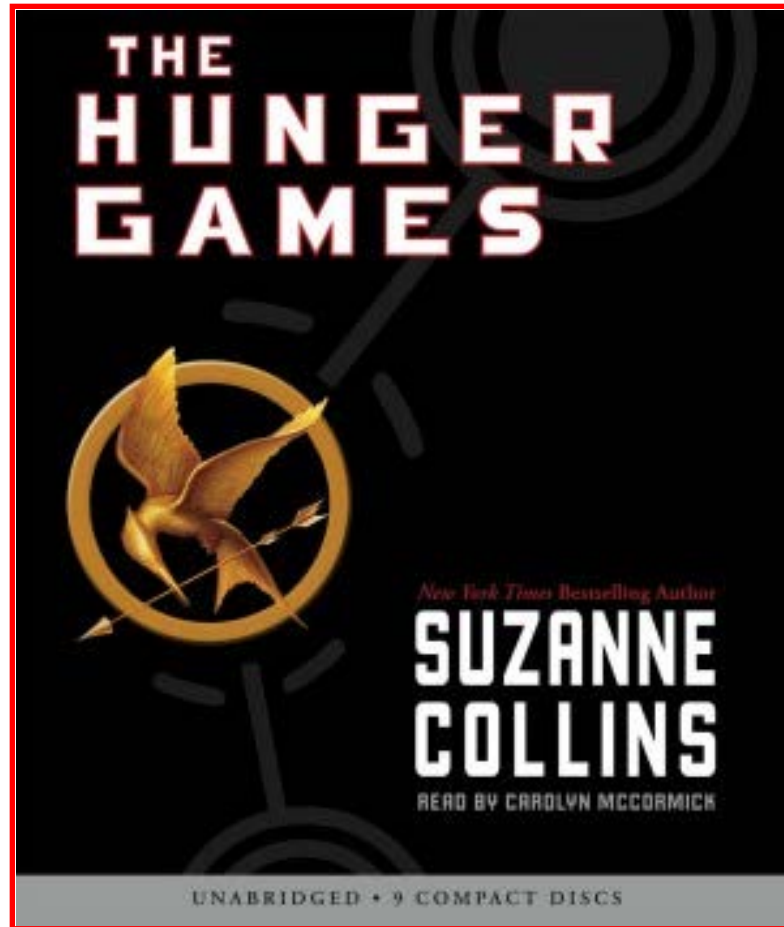


- Turshi is served cold after fermenting broccoli, cauliflower, and cabbage for 3 weeks--then adding salt and vinegar.
- Fermentation (prolonged storage at room temp in a low-acid, low-salt environment) may be conducive to *C. botulinum* spore germination and toxin formation.
- Botulinum toxin can be distributed unevenly in foods.
- Investigators should be aware that cold fermented foods can be associated with botulism.

10:00 PM



“The Hunger Games”

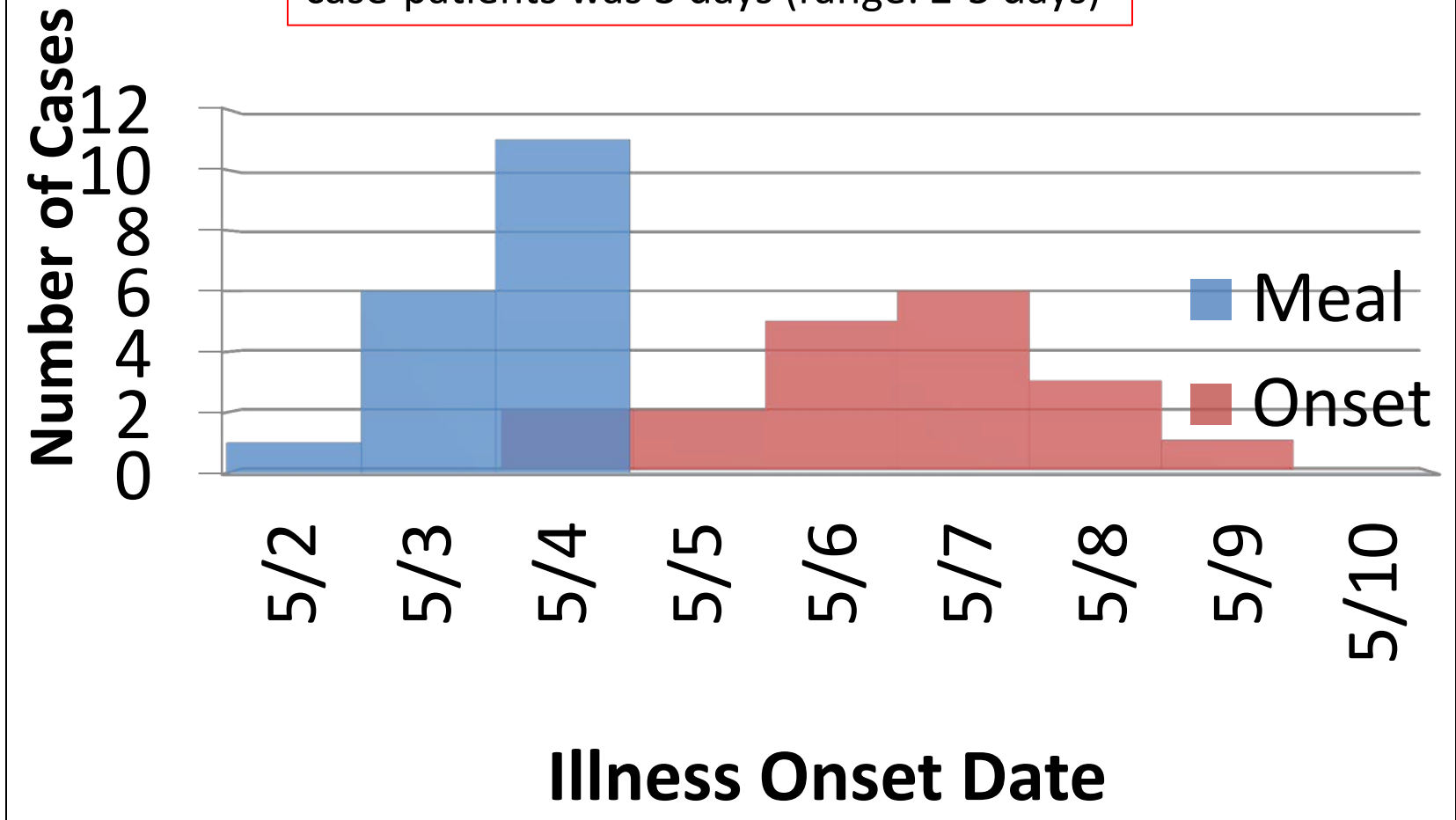


Outbreak of *E. coli* O157:H7 Infections Associated with a Barbecue Restaurant

- May 6-10, 2013: Stephens County Hospital reports 7 patients with shiga-toxin- producing *E. coli* (STEC) infections.
- 5/7 reported consuming food from BBQ A in Stephens County during the weekend of May 2-4, 2013.
- *E. coli* O157:H7 culture and PFGE testing were performed on clinical specimens at the Georgia Public Health Laboratory .
- Additional case finding yielded a total of **19** cases (11 confirmed and 8 probable); **all** had eaten at BBQ A during May 2-4.
- 74% (14/19) of cases were male and 47% (9/19) were under 18 years old.
- Seven cases were hospitalized; five cases developed HUS and no cases died.

Epidemic curve, *E coli* O157:H7 Outbreak, Stephens County, Georgia, 2013

The median incubation period among case-patients was 3 days (range: 2-5 days)



Case Control Study: Risk Factors for Illness among BBQ A Patrons, May 2-4, 2013

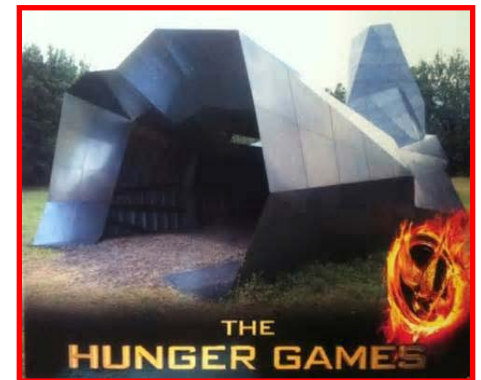
Exposure	Case	Total	Attack Rate	Odds Ratio (OR)	Fisher Exact p-value	Confidence Interval (CI)
Applesauce	2	2	100.0%	--	0.111	
Dine In	17	28	60.7%	15.45	0.005	1.73-138.24
Iced Tea	16	31	51.6%	18.13	0.001	2.14-153.55
Cake	1	2	50.0%	2.2	0.542	
Pulled Pork	16	43	37.2%	2.96	0.298	
Stew	15	45	33.3%	1.17	1	
Bread	9	29	31.0%	0.84	1	
Chips	9	31	29.0%	0.61	0.545	
Coleslaw	5	31	16.1%	0.16	0.004	0.05-0.57
Chicken	1	7	14.3%	0.27	0.399	
Ribs	0	2	0.0%	--	0.539	

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Environmental Investigation of BBQ A

- 4 potential sources of contamination, proliferation, and/or survival of *E. coli* O157:H7 were identified in BBQ A:
 - One large cutting board in smokehouse used for all raw meat and produce
 - No dedicated handwashing sink in smokehouse
 - No temperature logs were kept for meat
 - Cooling practices insufficient



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Environmental Investigation



E. coli O157:H7 Outbreak at BBQ A: Conclusions

- No one risk factor/food item was implicated by the investigation.
- Several potential points of cross-contamination and temperature abuse were identified.
- However, we didn't specifically identify that the iced tea was contaminated with raw beef or produce.
- It is possible that an unidentified exposure occurred since iced tea and dining in were both statistically associated with illness and with each other.



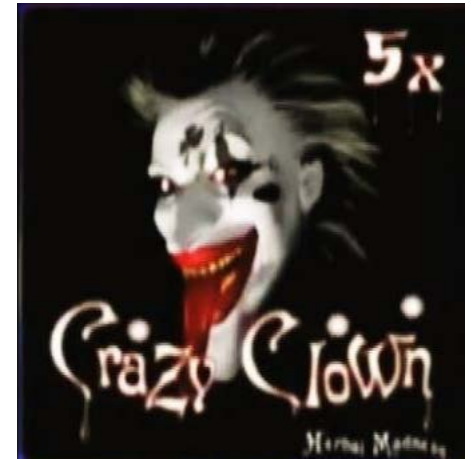
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“Catching Fire”



Outbreak of Severe Illness Associated with Smoking Synthetic Cannabinoids

- Synthetic cannabinoid (SC) use has emerged as a growing public health threat in the U.S.
- SCs are designer drugs applied to dried plant material and smoked.
- Several colloquial names: Spice, K2, Crazy Clown
- In August 2013, 8 persons from Brunswick, GA presented to the local ED with anxiety, delirium, psychosis, aggressive behavior, and seizures after smoking the same Crazy Clown product at a party.
- Three were admitted to the ICU; toxicologists at the Georgia Poison Center were consulted.



Outbreak of Severe Illness Associated with Smoking Synthetic Cannabinoids

- Additional case finding revealed a total of 22 patients seen at the Brunswick ED after smoking Crazy Clown during August 22–September 9, 2013
- The 22 patients were aged 16–57 years (median: 25 years); 18 (82%) were male.
- Complications included pneumonia (two patients), rhabdomyolysis (one), and myocardial infarction (one).
- Five patients tested positive for ADB-PINACA, a previously unrecognized SC.
- Law enforcement authorities traced the Crazy Clown to a single Brunswick smoke shop.



Outbreak of Severe Illness Associated with Smoking Synthetic Cannabinoids

- All Crazy Clown, marketed as “herbal incense”, was removed from the Emporium.
- Tested by the GBI Crime Lab, which identified the same substance found in affected patients (ADB-PINACA).
- Although new, this substance qualified as a Schedule I controlled substance under Georgia law.
- The smoke shop owners were charged with possession of a Schedule 1 controlled substance with intent to distribute.
- No additional cases were identified in Brunswick, but a similar outbreak occurred a week later in Colorado with many of the same SCs.



Inadequate Restroom Facilities

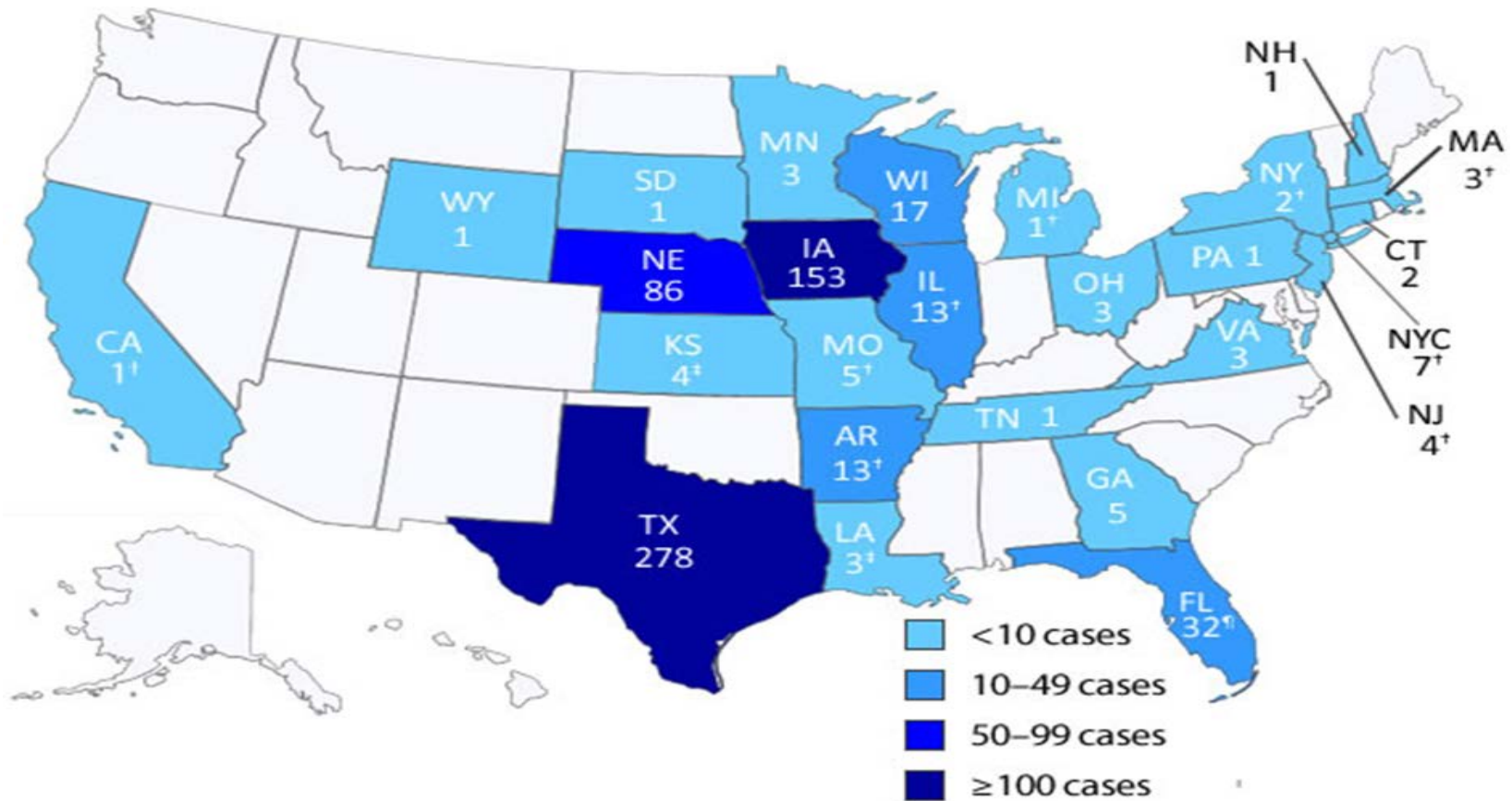


Multi-State Outbreak of Cyclosporiasis, 2013

- *Cyclospora cayetenensis* is a single-celled parasite; it has a human reservoir and is found in tropical/subtropical regions.
- People become infected by ingesting food or water contaminated with fecal matter; the incubation period is about a week.
- *Cyclospora* infects the small intestine and causes watery diarrhea that waxes and wanes and can last an average of 57 days, if untreated.
- *Cyclospora* infections in the U.S. are relatively uncommon (we have about 5-10 per year in GA) and are often associated with international travel.
- The largest *Cyclospora* outbreak ever documented in the U.S. occurred in June-September 2013.

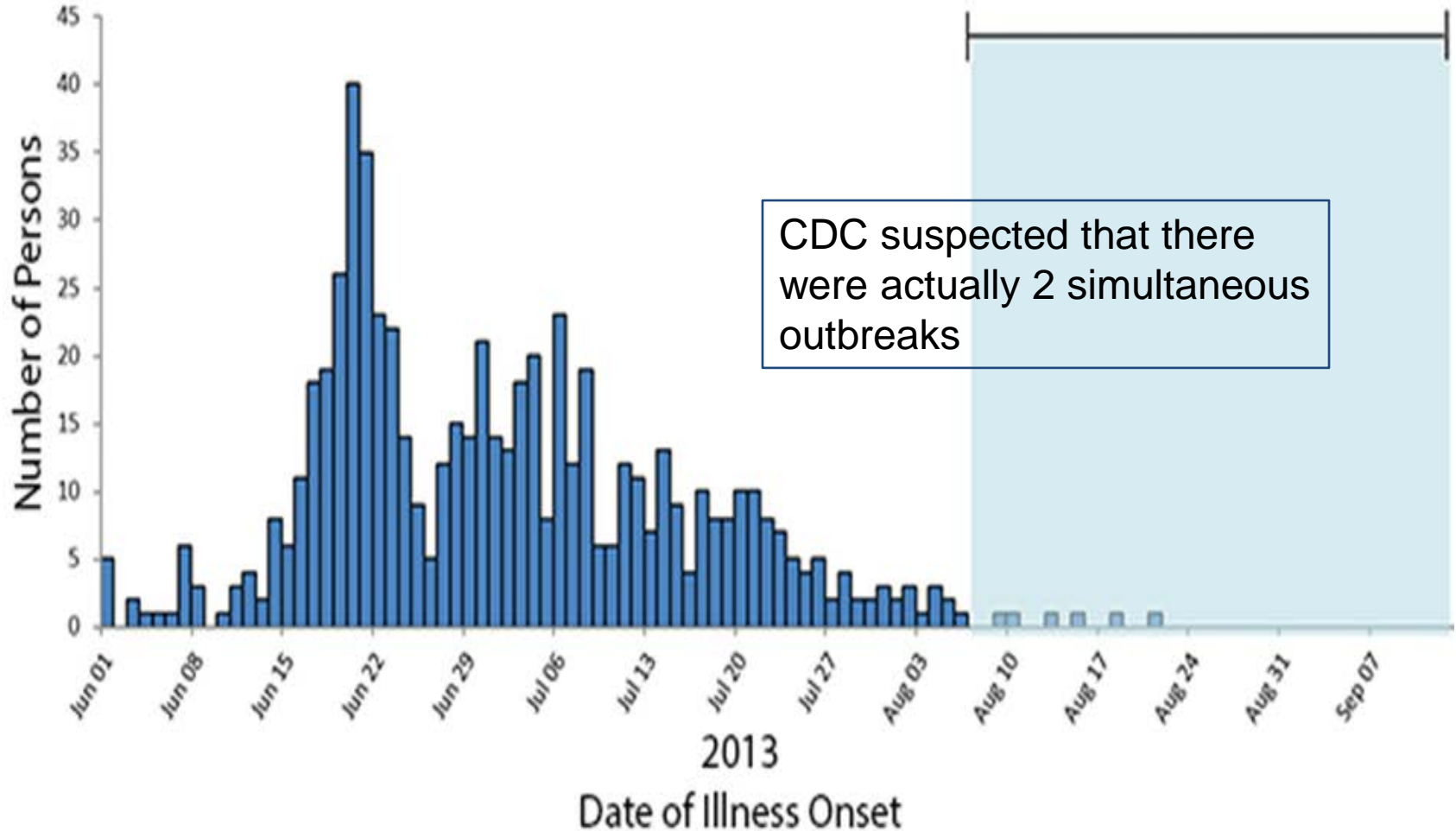


Cyclospora Outbreak: Where?



643 cases were reported from 25 states including **5** from GA; 49 case patients were hospitalized but no infections were fatal.

Confirmed Cyclosporiasis Cases, United States, June-September, 2013 (N=643)



Cyclospora Outbreak: Why? How?

- Epidemiologic investigations in Iowa and Nebraska implicated a prepackaged **salad mix** served at Olive Garden and Red Lobster restaurants to be associated with *Cyclospora* infections.
- FDA traceback investigation found that the salad mix was supplied by **Taylor Farms de Mexico**, a processor of foodservice salads.
- On August 9, Taylor Farms voluntarily **suspended** production and shipment of any salad mix from Mexico to the United States.



Two Simultaneous Cyclospora Outbreaks

- In late August, a new cluster of cyclosporiasis cases emerged in Fort Bend County, Texas
- New epidemiologic investigation implicated **fresh cilantro** served at several restaurants to be associated with *Cyclospora* infections.
- FDA traceback investigation found that the cilantro was supplied by farms in Puebla, Mexico.
- Cyclospora outbreaks are often linked to salad ingredients or garnishes--“**stealth vehicles**”--often not listed on menus or in recipes.



What Have We Learned from the Multi-State Outbreaks of Cyclosporiasis?

Stealth Restrooms can lead to Stealth Vehicles



January 29, 2014; 7:15AM



Home Sweet Home



Acknowledgments

- District Epidemiologists
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- Melissa Tobin-D'Angelo, MD, MPH
- Hope Dishman, MPH
- Laura Edison, DVM, MPH
- Reid Harvey, DVM (CDC)
- AJC
- Redwing
- YOU!





MEANWHILE, IN MICHIGAN

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