Georgia Outbreaks: Like A Trip to Whole Foods!

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March 27, 2015
“WHOLE FOODS IS LIKE VEGAS. You go there to feel good, but you leave broke, disoriented, and with the newfound knowledge that you just swallowed a symbiotic colony of bacteria and yeast.”

(in your Kombucha tea, of course!)
Actually, Whole Foods is a Lot Like Our Disease Outbreaks
Whole Foods Tour

- Pre-Market Research
- Aisle 1: Unicorns
- Aisle 2: Gluten-Free Water
- Aisle 3: Camel’s Milk
- Aisle 4: Uh-Oh! Gluten!
- Aisle 5: Breakfast
- Checkout!
Etiologies of Confirmed Georgia Outbreaks, 2014 (n=161)
2014 Georgia Outbreaks: Settings (n=161)
Confirmed Foodborne Outbreaks, Georgia, 2004-2014
Aisle 1: Unicorns and Other Magical Thinking
Magical Thinking
Measles

- Measles is one of the world’s most contagious diseases and still poses a threat to domestic and global health.

- The US experienced a record number of measles cases during 2014, with 644 cases from 27 states. Greatest number of cases since measles elimination was documented in the U.S. in 2000.

- The U.S. experienced 23 measles outbreaks in 2014, including one large outbreak of 383 cases among unvaccinated Amish communities in Ohio, and many cases were associated with travelers from the Philippines.

- In 2015, the US is currently experiencing a large, multi-state measles outbreak linked to Disneyland in California.

- Epi pattern for these outbreaks: international traveler-associated cases followed by transmission in non-vaccinated/susceptible populations.
### Table 1: Confirmed Measles Cases in GA, 2002-2012

<table>
<thead>
<tr>
<th>Year</th>
<th>Age</th>
<th>Vaccine History</th>
<th>Laboratory Confirmation</th>
<th>Travel History</th>
<th>Comments</th>
<th>Epidemiologic Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>22y</td>
<td>None</td>
<td>IgM +; genotype B3</td>
<td>Nigeria</td>
<td>U.S. resident returning</td>
<td>Internationally imported</td>
</tr>
<tr>
<td>2002</td>
<td>41y</td>
<td>Unknown</td>
<td>IgM +</td>
<td>Soviet Union</td>
<td>Foreign visitor</td>
<td>Internationally imported</td>
</tr>
<tr>
<td>2002</td>
<td>31y</td>
<td>Unknown</td>
<td>None, epi-linked</td>
<td>None</td>
<td>U.S. resident, epi-linked to TN resident returning from Philippines</td>
<td>U.S. acquired – import-linked</td>
</tr>
<tr>
<td>2003</td>
<td>12y</td>
<td>None</td>
<td>IgM +</td>
<td>Nigeria</td>
<td>Foreign visitor</td>
<td>Internationally imported</td>
</tr>
<tr>
<td>2004</td>
<td>40y</td>
<td>Unknown</td>
<td>IgM +</td>
<td>Republic of Georgia</td>
<td>Foreign visitor</td>
<td>Internationally imported</td>
</tr>
<tr>
<td>2008</td>
<td>54y</td>
<td>Unknown</td>
<td>IgM +; genotype D4</td>
<td>Pakistan</td>
<td>U.S. resident returning</td>
<td>Internationally imported</td>
</tr>
<tr>
<td>2009</td>
<td>7m</td>
<td>None</td>
<td>IgM +, genotype H1</td>
<td>None</td>
<td>U.S. resident, visited international airport</td>
<td>U.S. acquired – imported virus</td>
</tr>
<tr>
<td>2010</td>
<td>22y</td>
<td>Unknown</td>
<td>IgM +</td>
<td>Ethiopia</td>
<td>Foreign visitor</td>
<td>Internationally imported</td>
</tr>
<tr>
<td>2012</td>
<td>32y</td>
<td>1 MMR</td>
<td>IgM +; genotype D8</td>
<td>None</td>
<td>U.S. resident, worked at international airport</td>
<td>U.S. acquired – imported virus</td>
</tr>
<tr>
<td>2012</td>
<td>10m</td>
<td>None</td>
<td>None, epi-linked</td>
<td>None</td>
<td>U.S. resident, epi-linked to above case</td>
<td>U.S. acquired – imported virus</td>
</tr>
</tbody>
</table>

Source: Jessica Tuttle, MD, Ebony Thomas, MPH, Georgia Department of Public Health Epidemiology Program
Let’s Add One More...

• On Feb. 4th, a 9-month old and parents arrived in Atlanta from Kyrgyzstan (currently experiencing a large measles outbreak)

• Baby’s rash began on February 2, flew with rash on 3 flights total: to Istanbul, Chicago, then to ATL.

• Presented to hospital ED on Friday night, Feb 6th; measles confirmed by GPHL on Saturday morning, Feb 7th.

• Measles is a public health emergency; is contagious 4 days before the rash begins until 4 days after
Contact Investigation

- Substantial—about 400 contacts from hospital ED, health department clinic, airline flight, apartment complex, and resettlement organization.

- Exposed persons were contacted and evaluated for measles susceptibility.

- Focus on infants, pregnant women, and immunosuppressed individuals

- To prevent measles infection, we provided either MMR vaccine or immune globulin (IG) as appropriate to susceptible contacts.

- Believe it or not, NO SECONDARY CASES!
Thousands of vaccinated people did not get the measles here!
Aisle 2: Gluten-Free Water

It's gluten-free, sugar-free, dairy-free, soy-free, egg-free, & fat free. They call it "water" and you can buy it at Whole Foods apparently.

your ecards
someecards.com
Unfortunately, Not Cryptosporidium-Free
Cryptosporidiosis Associated with A Neighborhood Pool, 2014

- *Cryptosporidium* is a single-celled parasite found in the intestines of infected human and animals; is distributed worldwide.

- *Cryptosporidium* is shed in the feces of infected humans or animals; may then contaminate soil, food, water, or surfaces. Can be shed for up to 2 weeks after symptoms stop.

- People can become infected by ingesting food or recreational water contaminated with fecal matter; the incubation period is about a week (2-10 days).

- *Cryptosporidium* causes watery diarrhea that can wax and wane over a period of 1-2 weeks.

- *Cryptosporidium* is chlorine-resistant and can live for days in chlorine-treated water.

- *Cryptosporidium* is one of the most frequent causes of waterborne disease among humans in the United States.
Outbreak of Cryptosporidiosis Associated with A Neighborhood Pool, 2014

• On August 9, 2014, the Epidemiologist in DeKalb County was notified about an outbreak of diarrheal illnesses at a private neighborhood swim club (has a main pool and a kiddy pool).

• First onset of illness was 8/5. Sixty-three (63) cases were identified between 8/5 - 8/18; 12 were lab-confirmed to have Cryptosporidium infection.

• 80% of cases occurred among children (overall age range 1-70 yrs); incubation period ranged from 1-6 days (median 3 days); 0 were hospitalized.

• Water samples collected from the main and kiddy pools on 8/12 were both positive for Cryptosporidium.
Cryptosporidium Outbreak: Why? How?

- Epidemiologic cohort investigation implicated swallowing water in both kiddy and main pools to be associated with Cryptosporidium infections (main pool higher risk)
- Environmental investigation found adequate chlorine levels in both pools.
- Cryptosporidium is an extremely chlorine-tolerant parasite, so even well-maintained pools can spread Crypto among swimmers.
- This outbreak likely due to persistent high levels of Crypto in water.
- Remediation: Pools were closed and subject to hyper-chlorination to kill Cryptosporidium.
Prevention

• Do not swim in recreational water if you have cryptosporidiosis (or any diarrheal illness) and for at least 2 weeks after the diarrhea stops.

• Immersion in the water is enough for contamination to occur (a fecal accident is not necessary).

ONLY $25.99/BOTTLE
Global Outbreak of MERS-Coronavirus Infections, 2012-2015

• In April 2012, a novel coronavirus called Middle East Respiratory Syndrome Coronavirus (MERS-CoV) was identified as the cause of severe respiratory infections and deaths among persons in the Arabian Peninsula.

• Since then, 1075 confirmed cases of MERS-CoV infection (and 404 deaths) have been reported from 23 countries (Austria and Turkey new)

• 14 countries have had travel-associated cases, including 2 cases in the U.S. during May 2014.

• Why are we still talking about MERS? Recent surge in Saudi Arabia; still poses a risk to U.S.
MERS Co-V, 2012-15: Epidemiology

- Severe illness; high case fatality rate (30-40%)
- MERS more common in older men with underlying conditions
- Median incubation period= 5 days (range: 2-14 days).
- Travel-associated cases and clusters
- Spread in healthcare settings (patients and HCW)
- Recent cases in Saudi Arabia documented exposure to raw camel’s milk
- MERS-CoV found in healthy dromedary camels in Egypt and Saudi Arabia (same sequence as case-patients)
- A new study of MERS-CoV in camels suggests that the virus primarily or exclusively infects calves.
MERS Co-V, 2012-15: Epi Summary Drives Prevention

People Who May be at Increased Risk of MERS (travel, healthcare, camels)

- Recent travelers from the Arabian Peninsula
- Healthcare personnel not using recommended infection prevention measures
- People with exposure to camels (especially camels under 2 years old)
- WHO says people with underlying health conditions should:
  1. Avoid contact with camels
  2. Not eat undercooked camel meat
  3. Not drink raw camel milk or raw camel urine
Falling in love with milk from a camel.
Please note, Cat milk does not come from cats
Aisle 4: Uh Oh! Gluten!
Ebola Virus Disease Epidemic, 2013-15
Surveillance Goals in the US and GA

• Besides the three epicenter countries in West Africa, six other countries have been affected with travel-associated Ebola cases (Mali, Nigeria, Senegal, Spain, U.S., and U.K.), some resulting in localized spread.

• Overall epidemiologic pattern: Travel-associated cases; healthcare-associated transmission.

Ebola Surveillance Goal in the US

• **Early detection of suspect cases** that have traveled here--so that early access to medical care and rapid isolation can be implemented.

Ultimately, to prevent spread!
Entry Screening and Post-Arrival Monitoring: Select US Airports

• In October, CDC and Customs and Border Protection (CBP) announced enhanced entry screening and active monitoring of all travelers from Guinea, Liberia, and Sierra Leone at 5 U.S. airports (JFK, Dulles, Chicago, Newark, Atlanta).

• Added travelers from Mali on November 17; removed them on January 6

• Anyone with a fever or symptoms is referred for immediate medical care

• Individuals with a high risk exposures (needlestick, etc.) may be quarantined

• DPH monitors asymptomatic passengers for 21 days:
  - Twice daily temp and symptom checks
  - Mandatory reporting via web-based system
Entering symptoms for: Karl Ebola Soet  DOB: 01/01/1950

Click Here for temperature and symptom monitoring instructions

1. Please Choose the Day and Time: Evening Day 21 11/03/2014 (done)
2. Please enter your Temperature: 98.6 °F
3. Please indicate any symptoms you are experiencing by clicking the picture(s), then click "DONE" at the bottom:

   ![Symptoms Images]

   OR

   If you have no symptoms, please click OK, NO SYMPTOMS above and leave the field below blank:
   List additional symptoms here:

4. Do you have any trips planned between now and 11/03/2014?: Yes
   If yes, please describe the where and when you are going, and how you are getting there:
   som place warm by boat
   Click Here for travel approval instructions
DPH Electronic Monitoring System

Rationale: EARLY detection and RAPID isolation
Georgia Post-Arrival Monitoring

• From October 24, 2014 – March 26, 2015:
  – 1029 travelers have been monitored
  – 125 are currently being monitored (~60% CDC employees)
  – 57 children have been monitored
  – Cumulatively, 25 travelers were medically evaluated for fever. They were diagnosed with flu, URI, gastroenteritis, and malaria.
  – We have directly (in-person) monitored 25 healthcare workers with risk of Ebola exposure, including 5 with high-risk exposures who needed to be quarantined. All remained asymptomatic.
Persons Under Ebola Active Monitoring by Week (Mean) Georgia 2014-2015

Week beginning date

Person count

<table>
<thead>
<tr>
<th>Week</th>
<th>Number of Persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-Oct</td>
<td>74</td>
</tr>
<tr>
<td>1-Nov</td>
<td>107</td>
</tr>
<tr>
<td>8-Nov</td>
<td>129</td>
</tr>
<tr>
<td>15-Nov</td>
<td>136</td>
</tr>
<tr>
<td>22-Nov</td>
<td>143</td>
</tr>
<tr>
<td>29-Nov</td>
<td>132</td>
</tr>
<tr>
<td>6-Dec</td>
<td>117</td>
</tr>
<tr>
<td>13-Dec</td>
<td>115</td>
</tr>
<tr>
<td>20-Dec</td>
<td>157</td>
</tr>
<tr>
<td>27-Dec</td>
<td>159</td>
</tr>
<tr>
<td>3-Jan</td>
<td>142</td>
</tr>
<tr>
<td>10-Jan</td>
<td>104</td>
</tr>
<tr>
<td>17-Jan</td>
<td>98</td>
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<tr>
<td>24-Jan</td>
<td>96</td>
</tr>
<tr>
<td>31-Jan</td>
<td>112</td>
</tr>
<tr>
<td>7-Feb</td>
<td>130</td>
</tr>
<tr>
<td>14-Feb</td>
<td>137</td>
</tr>
<tr>
<td>21-Feb</td>
<td>131</td>
</tr>
<tr>
<td>28-Feb</td>
<td>127</td>
</tr>
<tr>
<td>6-Mar*</td>
<td>121</td>
</tr>
</tbody>
</table>

*partial week through March 11, 2015

Not CDC Employees (n=420)

CDC Employees (n=490)
Georgia 3-Tiered Hospital Plan

**Identify and Isolate**
- 25 EMS zones
- Increased PPE, protocols and training
- Dedicated phone number for triage and EMS coordination
  1-866-PUB-HLTH

**Assessment/Dx**
- Hospitals have capability to manage a suspect case of EVD
- Specimen collection for diagnostic testing
- EMS transport to hospitals for treatment if positive
- Lab capacity for diagnosis

**Treat**
- Hospitals designated to treat EVD

Walk in to the Emergency Department
911 Call
Monitored Case That Becomes Symptomatic
Aisle 5: Breakfast
Checkout

Step 1: Bag Shaming
Checkout
Step 2: Sticker Shock

1234 Mandatory Blvd, Los Angeles, CA 90000

2 SEEDLESS GRAPES 65.99 F
ITEM WE WROTE "ORGANIC" ON IT 13.50 F
CHARGE YOU AN EXTRA 5 BUCKS

3 LEAVES OF KALE YOUR GIRLFLX
FORCES YOU TO BUY AND EAT WHAT YOU DAYDREAM OF DOUBLE BACON CHEESEBURGERS

ALL NATURAL MOISTURIZING LOTION (AND BY "ALL NATURAL" WE MEAN IT'S MADE FROM HORSE SEMEN) 23.99 F

PINT OF ICE CREAM YOU THINK WON'T MAKE YOU FAT BECAUSE YOU BOUGHT IT AT WHOLE FOODS 5.49 F

SLICED PINEAPPLES WE BOUGHT IN A CAN FOR $.79 FROM WALGREENS AND PUT IN A FANCY BIODEGRADABLE CONTAINER 15.99 F

THE 3 PREMIUM OLIVES YOU SECRETLY SAMPLLED AT OUR OLIVE BAR (YEAH, WE SAW THAT YOU CHEAP BASTARD) 32.50 F

BOTTLE OF MULTIVITAMINS THAT WE'VE CONVINCED YOU IS SOMEHOW BETTER THAN MULTIVITAMINS ANYWHERE ELSE BUT ARE REALLY JUST SUGAR PILLS 24.99 F

A PAPER BAGS WE CHARGED YOU FOR SINCE YOU DIDN'T BROUGHT YOUR OWN AND ARE THEREFORE "RUINING THE ENVIRONMENT" EVEN THOUGH MOST NORMAL HUMAN BEINGS DON'T THINK TO BRING THEIR OWN BAGS TO A DAMN GROCERY STORE 16.50 F

****OVERLY PRETENTIOUS TAX 1.19 F
BALANCE 20,135.54
Checkout
Step 3: Acknowledgments

- District Epidemiologists
- Georgia Public Health Laboratory
- Melissa Tobin-D’Angelo, MD, MPH
- Hope Dishman, MPH
- Audrey Kunkes, MPH
- Amanda Feldpausch, MPH
- Laura Edison, DVM, MPH
- Jessica Tuttle, MD
- Ebony Thomas, MPH
- Entire Ebola Team (Taylor Guffey, Katy Sanlis, et al)
- YOU!
Not So Fast...

FORGOT TO CHARGE ELECTRIC CAR

STRANDED AT WHOLE FOODS

....So That’s Why Ebola is Still Here!