Foodborne Illness Investigation of a Wedding Outbreak and Other Stories from the Field
(or How not to Burn Down a Police Station)

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A Recent Outbreak

Monday morning.

Inspectional Services tell you that several guests at a wedding at a hotel on Saturday night became sick straight after the wedding.
From the Father-of-the-Bride

140 guests at wedding

17 known to have been unwell on Sunday morning

6 people had to go to the Emergency Department

Mostly from certain tables at the wedding

Bride and groom both unwell but made it to the airport for their honeymoon
The Table Plan

- 2 (15%)
- 2 (20%)
- 6 (60%)
- 8 (80%)
- 0
- 1 (11%)
- 0
- 0
- 1 (9%)
- 1 (10%)
- 5 (42%)
- 4 (44%)
- 0
- 0

Total:
- 20%
The Serving Teams

Same servers at reception
No staff unwell.
Staff ate the food.
The Epidemic Curve

- Early Sat morning: 5 cases
- Wedding dinner: Spike in cases on Wed

# of cases
Norovirus

Sudden onset of severe diarrhea and vomiting

Extremely unbelievably amazingly infectious

Incubation period normally 28-34 hours (90% of cases). Minimum 12 hours

Lives outside body for long time

Takes out entire cruise ships
Wedding dinner

Early Sat morning

Day

# of cases

Time

Sun  Mon  Tue  Wed  Day

8pm  7am  8pm  7am  12am  12pm
Attended rehearsal
Did not attend rehearsal

Secondary infections

<table>
<thead>
<tr>
<th>Hours since rehearsal</th>
<th># of cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>8pm</td>
<td>2</td>
</tr>
<tr>
<td>7am</td>
<td>3</td>
</tr>
<tr>
<td>8pm</td>
<td>2</td>
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<tr>
<td>7am</td>
<td>1</td>
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<td>12am</td>
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<td>12pm</td>
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</tbody>
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Time
- 8pm
- 7am
- 12am
Relative risk = \[ \frac{\text{risk of getting sick if you were exposed to something}}{\text{risk of getting sick if you weren’t exposed to it (but could have been)}} \]

Stats

- 2.32
- 3.66
- 3.05
- 2.63
- 3.98
Relative risk = \frac{\text{risk of getting sick if you were exposed to something}}{\text{risk of getting sick if you weren’t exposed to it (but could have been)}}
Rehearsal restaurant informed early.

Voluntarily closed and professionally cleaned.

All food handlers tested and excluded from work pending results.
   All negative.
HEPATITIS A ELSEWHERE IN USA

- San Diego:
  - Over 500 people sick
  - 20 Deaths

- Michigan and Kentucky
  - over 1000 cases each
How Hepatitis A is spread
Symptoms

Fever, tiredness, flu like symptoms

Nausea, vomiting, stomach pain, loss of appetite

Yellowing of eyes or skin, dark urine, grey stool
Weekly Diagnoses of Hepatitis A - Boston, 2018-2019

Number of cases

Week Beginning

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2018:
- 31-Mar
- 14-Apr
- 28-Apr
- 12-May
- 26-May
- 9-Jun
- 23-Jun
- 7-Jul
- 21-Jul
- 4-Aug
- 18-Aug
- 1-Sep

2019:
- 2-Sep
- 15-Sep
- 29-Sep
- 13-Oct
- 27-Oct
- 10-Nov
- 24-Nov
- 8-Dec
- 22-Dec
- 5-Jan
- 19-Jan
- 2-Feb
Incubation period

15 to 50 days - Average of 28 days

INFECTIOUS PERIOD

2 WEEKS BEFORE SYMPTOM ONSET THROUGH 1 WEEK AFTER

EXCLUSIONS FOR FOODHANDLERS GET MESSY!
Prevent Hepatitis A

Keep Calm and Get Vaccinated

Wash Your Hands

Clean
Exclusions are very disruptive!

$R_0$ – If no one was immune how many people would catch disease from 1 case

Norovirus – 3.7
Influenza – 2
Hepatitis A – 2.5

Measles - 16

Infectious period
4 days before rash to 4 days after rash

Incubation period
5 to 21 days (conservative)

Airborne transmission – in air for 2 hours after patient leaves

Exclusions are very disruptive!
Norovirus cluster: Restaurant closed for 1 day for full deep clean

Hepatitis A Restaurants: All staff excluded from work just prior to the weekend unless immune

Measles Restaurant: All staff excluded from work just prior to the weekend until they show proof of immunity

POLICE STATIONS BURNED TO THE GROUND: