How to Make a Case Map for Outbreak Investigations

Partners in Health
Starting Template

- PCR confirmed, asymptomatic (date of sample collection)
- PCR confirmed, symptomatic (date of onset)
- Asymptomatic contacts (date of exposure)
- Symptomatic contacts (date of onset of symptoms)
- Partially vaccinated contact (date of exposure)
- Fully vaccinated contact (date of exposure)
- Partially vaccinated case (date of symptom onset or sample collection)
- Fully vaccinated case (date of symptom onset or sample collection)
PCR confirmed, asymptomatic (date of sample collection)
PCR confirmed, symptomatic (date of onset of symptoms)
Asymptomatic contacts (date of exposure)
Symptomatic contacts (date of onset of symptoms)

This can help show exposure over time in a location
This can help show relationships
This can help show the timeline of the cluster
1. **Symptomatic cases** are mapped on the day they develop symptoms.
2. **Asymptomatic cases** are mapped on the day they are tested.
3. **Symptomatic contacts** are mapped on the day they develop symptoms.
4. **Asymptomatic contacts** are mapped on their last day of exposure.

This case developed symptoms on day 7. This does not indicate a test date.

This case was tested positive on day 9 but never developed symptoms.

This contact developed symptoms on day 11. This does not indicate a test date or result.

This contact’s last exposure was on day 13. They never developed symptoms. This does not indicate a test date or result.
This map says:

1. Case 1 developed symptoms on day 3 and exposed case 2 on day 3.
2. Case 2 never developed symptoms but tested positive on day 7.
3. Case 2 exposed case 3 on day 7.
4. Case 3 developed symptoms on day 10.
5. The household contacts of case 3 were last exposed on day 15 and have not developed symptoms.
This map says:

1. Employee and case 1 developed symptoms on day 3 and worked at the bar until day 6.
2. The party of 4 went to the bar on Day 5. Three guests got tested on day 7 and were all positive but asymptomatic. The 4th guest developed symptoms on day 10 but has unknown test results.
3. Employee and case 2 last worked at the bar on day 8 and developed symptoms on day 10.
4. Employee 2 has 2 household contacts who were last exposed on Day 15 but have not developed symptoms.
This map says:

1. Employee and case 1 developed symptoms on day 3 and worked at the bar until day 6.
2. The party of 3 went to the bar on Day 5. One guest developed symptoms on day 7, the other two have not developed symptoms.
3. Employee and case 2 last worked at the bar on day 8 and developed symptoms on day 10.
4. Employee 2 has 2 household contacts, but because they are able to isolate, their last exposure date was the same date the case developed symptoms on day 10. They have not developed symptoms.
5. Employee and case 3 last worked on day 8 and developed symptoms on day 9. They took the weekend off and went on a trip with friends from day 10-12.
6. Of the 7 additional guests (8 total with case 3), 6 subsequently developed symptoms or tested positive between days 14 and 17.
7. One guest from the weekend trip has not developed symptoms.
Weekend Trip
Day 10 - 12

Bar

HH1

HH2

Carpooled

PCR confirmed, asymptomatic (date of exposure)
PCR confirmed, symptomatic (date of onset of symptoms)
Asymptomatic contacts (date of exposure)
Symptomatic contacts (date of onset of symptoms)
Employees
Patrons
Guests on trip

1
2
3
4
5
6
7
8
9
10
Case starts feeling sick day 1. Then goes to a birthday party. Everyone from the party is notified and tested after HH 1 tests.

• Animations help tell the story of how the cluster unfolded and can simplify a complex series of exposures.

HH 1
Birthday Party
Case starts feeling sick day 1.

HH 2
But, this case goes to work for a few days before testing.

HH 3
Two coworkers start feeling sick. Business closes and sends all remaining employees for testing on day 14.

Workplace
Summary

• Each box should have its own horizontal space
• Vertical lines represent exposure dates
• Horizontal lines represent transmission events
• Relationships can be explained through brackets and free text
• Contact boxes do not indicate test results: green contact boxes stand for negative test results or not yet tested; they only indicate symptoms if present
• Exposures over time can be represented through 'event' boxes
• Calendar days help to show cluster growth over time
• Cluster maps can help to visually explain transmission events or risky behaviors
• Animations can help explain a complex series of exposures.
• Summary slides and lessons learned help to reinforce the message