Cluster investigation

How to obtain actionable intelligence
COVID is a clustering disease

"Is the K number the new R number? What you need to know" The Conversation (June 26, 2020)
Cluster detection in uncontrolled settings

Nursing home  Factory  Social Club  Gymnasium  Church  Restaurant

Controlled  Uncontrolled
Source investigation = retrospective tracing = backward tracing

COVID-19 Contact Tracing: Using Source Investigation to Enhance Detection of SARS-CoV-2 Transmission at Events and Gatherings

Contact tracing to identify a potential source provides opportunities to:

- Uncover transmission in events and gatherings; this is sometimes referred to “location-based” contact tracing

- Identify others in attendance at events or gatherings, notify them of their potential exposure, ask them about recent COVID-19 vaccination and diagnosis history, and provide recommendations for testing, quarantine or isolation as appropriate

Identifying a Potential Source: Involves looking back over the 14 days prior to symptom onset or specimen collection date (for asymptomatic cases), and identifying interactions with people, places, activities, events or gatherings where the case may have become infected.

"Who could you have infected?"

Spouse

Child

Friend
Patron/staff lists suggest casual 'where do you think you were infected?'}
Backward tracing $\rightarrow$ forward tracing
Forward tracing alone will not find all cases
Location-based tracing → location-based prevention

Screening

Vaccination
Pandemic likely to shift in coming months

• More localized outbreaks (perhaps caused by new variants).
• More "uncontrolled" cluster types (e.g. restaurants, workplaces, places of worship).
• Decreased testing (i.e. more hidden cases).

Cluster investigation allows proactively finding/responding to these outbreaks

• Coordinated with testing, tracing, support for isolation/quarantine, vaccinations, and sector-specific advice.
• Good way to find unvaccinated pockets, communicate with those individuals, and help them get vaccinated.
Cluster investigation: practical ideas

Who calls locations?
• Case investigators/contact tracers can be trained in retrospective tracing.
  • Talking with business owners.
  • Local testing/vaccination options.

Who provides guidance?
• Small specialized cluster team of epidemiologists, experienced case investigators/contact tracers.
Cluster investigation: state-level considerations

Cluster investigations are most efficient and effective with:

- **Staff dual-trained** in retrospective and prospective contact tracing
- **Educated owners/management** (who keep patron lists).
- **Data collection system** that is easy-to-use, searchable, and analyzable.
- **Data sharing** across jurisdictions (towns, counties, etc.).
- **Availability of vaccination and support services.**