
Workforce Estimations: Four Scenarios

Prepared by Partners In Health, US Public Health Accompaniment Unit, Newark

PIH developed a calculator that models contact tracing workforce needs, based on a few key variables and assumptions

Instructions

- >Assumptions ("drivers") in blue cells can be adjusted
- >Do not edit/delete grey cells

Assumptions

# patients who test + for COVID-19	# working hours/work day (hours)	# Contact Tracers / Supervisor	Disease investigation: Avg. time/call (mins)	# contacts to trace per patient	Contact tracing: Avg. time/call (mins)	Target window to make all calls (work days)	Retention: % of positive cases reached	Retention: % of contacts reached	% of contacts requiring follow-up calls	Contact tracing follow-up calls: Avg. time/call (mins)	Number of follow up calls
55	8	10	60	3	20	1	70%	50%	100%	10	7

Disease Investigation

# disease investigations that can be completed by 1 FTE per day	Total # cases that will be successfully investigated (e.g. not lost to follow-up)	# disease investigators needed per day
8	38.5	5

Contact Tracing and Follow-up

Total # contacts	Total # contacts that will be successfully traced (e.g. not lost to follow-up)	Total time for 1 "contact tracer" to call all contacts (hours)	Total time for 1 "contact tracer" to make follow-up calls (hours)	Total time for 1 "contact tracer" to make initial calls + follow-up calls (hours)	Total time for 1 "contact tracer" to call all contacts (work days)
165	57.75	19	67	87	11

Contact Tracing Staffing

# contact tracers needed to call all contacts within 1 days	# supervisors needed	# Care Resource Coordinators (1:5 tracers)	Total Staff required: Disease investigators+and contact tracing staff
11	1	2	19

The calculator variables highlighted in red are key cost drivers of the contact tracing workforce most likely to evolve over the coming months as new daily case counts change, lifting of distancing restrictions increases contacts, and public communications campaigns reduce loss to follow-up occurring during case investigation and contact tracing.

The following four scenarios presented look at changes these four variables only, while holding the remaining assumptions constant.

The four scenarios below demonstrate how staffing needs change with changes in infection, social distancing, and retention

Variables	Scenario 1: Current situation	Scenario 2: Cases & Contacts stay the same, retention improves	Scenario 3: Cases & Contacts increase, retention stays the same	Scenario 4: Cases & Contacts increase, retention improves
Number of new patients testing positive per day	55 <i>(average of previous week)</i>	55 <i>(average of previous week)</i>	100	100
Average number of contacts per positive case	3	3	10	10
Percent of positive cases reached for investigation	70%	90%	70%	90%
Percent of exposed contacts reached for tracing	50%	90%	50%	90%



Projected Workforce Needs:

- 5 Case Investigators*
 - 11 Contact Tracers
 - 1 CT Supervisors
 - 2 Resource Coordinators
- 19 Total Staff**

- 6 Case Investigators*
 - 25 Contact Tracers
 - 3 CT Supervisors
 - 5 Resource Coordinators
- 39 Total Staff**

- 9 Case Investigators*
 - 66 Contact Tracers
 - 6 CT Supervisors
 - 13 Resource Coordinators
- 94 Total Staff**

- 11 Case Investigators*
 - 152 Contact Tracers
 - 15 CT Supervisors
 - 30 Resource Coordinators
- 208 Total Staff**

*Note: only includes investigators needed to investigate new positive cases, does not include backlog cases