

CONVERGE COVID-19 Working Groups for Public Health and Social Sciences Research

Research Agenda-Setting Paper

This paper was written to help advance convergence-oriented research in the hazards and disaster field. It highlights areas where additional research could contribute new knowledge to the response to and recovery from the pandemic and other disasters yet to come. Questions about the research topics and ethical and methodological issues highlighted here should be directed to the authors who contributed to this paper.

Working Group Name:

COVID-19 Contact Tracing

Working Group Description:

This Working Group will examine contract tracing in Colorado, Hawaii, and beyond to develop evidence-based guidance for academic and non-academic audiences. Specifically, the group will use Local Public Health Agency data and epidemiological models to inform local contact tracing workforce and technical capacity needs and to create an ongoing line of communication with stakeholders in select locations. The group will develop a contact tracing workforce allocation methodology that can be used in Colorado, Hawaii, and other jurisdictions. The group will also develop tracing tools, integrating survey research with crowdsourced data and geospatial, temporal analytics to support planning, decision support for non-pharmaceutical interventions (social distancing, quarantine, isolation) and mitigation by state and local governments, NGOs, and civic organizations.

Priority Research Topics and Specific Research Questions:

Priority Research Topics	Potential Research Questions
1. Assessment of COVID-19 Contact Tracing Workforce Capacity at the Local Level	<ul style="list-style-type: none"> • How many FTEs housed in local health departments (LHD) are currently conducting COVID-19 contact tracing efforts? • How many potential FTEs (LHD and non-LHD workers) can be redeployed for COVID-19 contact tracing efforts? • How many volunteers are available for COVID-19 contact tracing efforts? • How many LHDs are able to fund additional COVID-19 contact tracers? How many FTEs? • How many FTEs have stopped non-COVID-19 contact tracing efforts (e.g., HIV, STI, and tuberculosis) in order to focus on COVID-19 contact tracing?
2. Assessment of COVID-19 Contact Tracing Technical Capacity at the Local Level	<ul style="list-style-type: none"> • Are LHDs prioritizing populations (e.g., people over 65 and homeless) or sites (e.g., long-term care facilities) for COVID-19 contact tracing? • How are LHDs prioritizing populations and sites for COVID-19 contact tracing? • Have LHDs developed contact tracing protocols specific to COVID-19 contact tracing activities (e.g., number of times contact tracer follows up with a case and interview questionnaire)?

	<ul style="list-style-type: none"> • Are LHDs in CO and HI using different protocols for COVID-19 contact tracing activities?
3. COVID-19 Contact Tracing Workforce and Other Resource Needs	<ul style="list-style-type: none"> • What are the key positions in a contact tracing team unit? • How many FTEs for each of the key positions in the contact tracing team unit are needed by LHDs? • In addition to workforce, what are the needs of LHDs specific to COVID-19 contact tracing (e.g., training, funding and other technical assistance)?
4. Local Health Department Technological Capacity for Contact Tracing	<ul style="list-style-type: none"> • Are LHDs using electronic platforms or applications to collect, store and share data on their contact tracing activities? • Which contact tracing electronic platform or application to collect, store and share data are being used by LHDs? • Are LHDs in a given state using the same electronic platform or application to collect, store and share contact tracing data? • Are LHDs using web-based/crowd-sourced symptom-tracking platforms to supplement live-person contact tracing? • If LHDs are using different electronic platforms or applications for contact tracing, can the data in these different systems be harmonized into a central repository for uniform surveillance?
5. COVID-19 Contact Tracing Workforce Allocation Methodology	<ul style="list-style-type: none"> • What are the key factors to consider in making equitable workforce allocation decisions? (e.g., COVID-19 case rate over the past x days, COVID-19 testing rates over the past x days, number of contact per case, contact tracer productivity, aggregated human mobility data, distribution of language other than English in a county, and CDC social vulnerability index) • What is the average 8-hour daily case load for a contact tracer? Does this vary based on local-level social need? • What is the average number of cases per case as social distancing measures are relaxed? • Can aggregated local-level human mobility data be useful as an indicator of future contact tracing burden?

Ethical / Methodological Considerations:

An overarching challenge with contact tracing efforts is the public’s reluctance to provide their private information to contact tracers or through electronic platforms. Additionally, immigrant populations and other vulnerable or marginalized groups might be especially wary of government-led efforts. To address this, this Working Group is working with various organizations that have an established presence and legitimacy among the most vulnerable populations. The group will continue to seek collaborations to ensure its research and recommendations are representative of the populations that will be affected by its work.

Developing a methodology for COVID-19 contact tracing workforce allocation must strike the balance between parsimony and integration of all key factors that potentially affect local workforce needs. This will ensure that central workforce allocation efforts (e.g., state-level) can be easily implemented to reach the most equitable allocation of resources.

Other Frameworks, Considerations for Collaboration, and/or Resources:

Colorado School of Public Health: Reaching to Communities to Inform about the COVID-19 Epidemic

To address the need for trusted information on the COVID-19 epidemic, the CSPH (effort led by Tatiane Santos) is developing a website and spin-off tools that will reach key decision-makers in Colorado, from the

state to the local levels, and Coloradans generally. It will provide a picture of the demographics of communities and their health, their vulnerable populations, the impact of the epidemic on them, and the status of key indicators for the epidemic, such as mobility of the population (an indicator of the degree of social distancing). At the county-level, the website will include a version of the epidemic model that can be used for local public health purposes. To meet the needs of the public at large, we will also include a version of the model that can be used by anyone to project the course of the epidemic under varying assumptions as to the control measures needed.

To achieve this vision, a first step will be to quickly assess what communications vehicles are already in place, to identify and convene an advisory group that will draw representatively on state and local public health, community organizations and members, and communications experts. At the same time, a web developer will be identified and construction of the initial website initiated with the goal of obtaining rapid feedback and bringing the website online quickly to establish its presence and utility. Initially, the focus will be on bringing existing data into a format providing information at the state and county levels.

The first version of the website will feature county-level dashboards which will also include the findings from the “CO Local Public Health Agency Contact Tracing Workforce and Technical Capacity Survey.” It will include the key inputs (and county-level data) recommended in the workforce allocation methodology so that local decision-makers have access to the COVID-19 Contact Tracing Workgroup’s initial recommendations.

In the second phase, the epidemic model developed by the Colorado COVID-19 Modeling Group will be downscaled to provide county-level estimates, responding to the need for results at the county level for tracking and projecting the course of the epidemic. Other data gathered and analyzed by the modeling team will also be included and updated over time, such as mobility of the population, key to the course of the epidemic. With completion of this phase, we anticipate putting needed information into the hands of county-level leaders and public health authorities. One element of the second phase will be assuring the sustainability of the website and related activities.

We recognize that a website will not reach critical groups, some at high-risk for COVID-19. Throughout the project, attention will be given to reaching such groups, whether through community partners, key opinion leaders, or other modalities. Plans could include partners at the local level such as public libraries and community organizations that focus on particular groups. The Colorado State University Extension Services are a potential vehicle for reaching to rural areas.

In the third and ongoing phase, the content and tools provided by the website will be continually updated and refined to address changing information needs as the epidemic evolves. Here, we anticipate an iterative and collaborative process involving the advisory group and the stakeholders it represents. For example, there will be future generations of models that will cover what will be (hopefully) the later course of the pandemic. Sustainability of the website and materials will be a key outcome of this phase.

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This COVID-19 Working Group effort was supported by the National Science Foundation-funded Social Science Extreme Events Research (SSEER) network and the CONVERGE facility at the Natural Hazards Center at the University of Colorado Boulder (NSF Award #1841338). Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the NSF, SSEER, or CONVERGE.