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:

Appalachian Regional COVID-19 Collaborative – Research Agenda I

Working Group Description:

Our workgroup is a collaboration between regional researchers, public health thought leaders, and county health officials focused in Western North Carolina. Our expertise is wide ranging and spans across public health, epidemiology, community and veterinary medicine, emergency management, infectious disease, and geospatial sciences. We formed an Epi Think Tank team in the early phase of the pandemic to provide local officials with science-based strategies to inform local COVID-19 response efforts in our rural and medically underserved area. We recently launched a participatory surveillance tool—online COVID-19 Self-Checker—to complement other regional COVID-19 surveillance, testing, and response efforts. The COVID-19 Self-Checker allows residents to assess signs and symptoms of COVID-19 and receive timely and appropriate guidance for the management of symptoms and individualized follow-up to help connect them to available care and testing resources. This is the first participatory surveillance system launched in the region and in the state of North Carolina.

Priority Research Topics and Specific Research Questions:

As the U.S. moves to reopen, participatory surveillance should be part of an integrated multi-pronged approach including contact tracing, increased testing, and syndromic surveillance to prevent another wave of COVID-19 infections in the summer and on into the fall. Participatory surveillance strategies hold great promise in complementing existing healthcare-based surveillance systems in identifying persons at risk and enhancing understanding of health, social, or place-based risk factors that can be leveraged in interventions to reduce inequalities. Yet, few U.S. studies have examined the utility of participatory surveillance efforts in the COVID-19 pandemic for aiding local health officials. A central aim of this workgroup is to report the results of the initial launch of an online COVID-19 Self-Checker tool in rural Appalachia.

Priority Research Topics	Potential Research Questions
1. Conduct pilot participatory surveillance tool in rural Appalachia.	• RQ1: What is the feasibility of using a self-checker with individualized follow up in WNC? • RQ2: What are ways the tool may be modified after the proof-of-concept to enhance scalability? • RQ2: Did the surveillance tool enhance regional decision making? • RQ3: What partnerships do we need in place to enhance roll-out of regional monitoring? • RQ4: How can this tool be adapted to help local health officials track communicable diseases?
2. Examine the underlying health, economic, and social disparities of rural Appalachian populations that make this region more vulnerable to COVID-19.	• RQ1: Who is at risk for COVID19 in our area? • RQ2: What populations are differentially vulnerable to COVID and where are they located? • RQ3: How can data on disparities be integrated into regional planning and response efforts? • RQ4: How can mapping/geospatial visualization tools be used to document disparities?

Ethical / Methodological Considerations:

To date, our group has focused on the methodological development of an internet-based participatory surveillance system developed by the leader of the Working Group and an epidemiologist at North Carolina State University. The Self-Checker was released for a community-wide launch in May 2020 in Buncombe County, North Carolina via established media communication channels. To the authors' knowledge, this is the first participatory surveillance system launched in the region and eastern U.S. This tool provides a model for participatory disease monitoring of COVID-19 that can be used by local health officials for situational awareness and planning/response efforts.

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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.