EVIDENCE BRIEF

SYSTEMS FOR ACTION

Using Network Science to Explore Pathways for Reducing Policing-Attributable Health Problems & Inequities

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About S4A

Systems for Action (S4A) conducts rigorous scientific research on how to build stronger connections between medical, social, and public health delivery systems in ways that support health equity. Funded by the Robert Wood Johnson Foundation, S4A conducts studies in communities throughout the U.S. led by diverse teams of scientists and community stakeholders.

Systems for Action
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The Problem

Public health and law enforcement are typically viewed by researchers and policy makers as separate professions with distinct approaches to protecting community well-being.[1] Yet, ensuring population health and safety is a primary concern of both law enforcement and public health agencies. The roles of law enforcement and public health intersect in many areas, including violence prevention, motor vehicle safety, alcohol and substance abuse, mental health, and emergency preparedness. While law enforcement and public health are tasked with addressing many of the same issues, the degree to which they work together on these activities within communities is not well known.

Tragically, law enforcement policies and practices often play powerful roles in creating public health problems rather than solving them. Racial profiling, excessive uses of force and non-therapeutic responses to mental health and substance abuse disorders result in toxic exposures to stress and trauma, preventable injuries and deaths, as well as inequitable rates of arrest, detention and incarceration.[2,3] These actions have large and persistent harmful effects on the health and well-being of the individuals and communities who are exposed to them, with racial and ethnic minority communities and low-income populations being vastly over-represented in exposure and harm.

One promising but under-studied pathway for reducing policing-attributable health problems involves building stronger connections between law enforcement agencies and the networks of organizations that carry out public health activities in local communities. Such connections may help communities identify and eliminate harmful and inequitable policing policies and practices, while supporting collaborative responses to problems that law enforcement agencies are ill-equipped to address alone, such as those rooted in mental health and substance abuse disorders.

As an important first step in exploring network solutions to policing-attributable health problems, this study investigates the extent to which law enforcement agencies are currently engaged in local public health networks and how this engagement varies across communities.

Possible Solutions

Stronger connections between law enforcement and networks of local public health and community organizations may help to build cultures and practices that promote health, safety and social justice. Existing evidence on the effects of multi-sector networks of community organizations working together to improve health has shown large decreases in preventable mortality and slower growth in medical spending within communities with stronger networks of local public health and community organizations.[4-6] Strengthening the connection between law enforcement and local public health networks may provide a promising solution to curbing police-involved violence and mass incarceration—two significant public health crises that proliferate existing health and social inequities. However, the extent to which law enforcement engages in local public health networks is unknown. This study examined the level of engagement of law enforcement with local public health networks and the connectivity of law enforcement with other community sectors.

Research Methods & Data

This national, cross-sectional study examines variation across U.S. communities in the patterns of connectivity between law enforcement agencies and other community organizations using data from the 2018 wave of the National Longitudinal Survey of Public Health Systems (NALSYS).[4-7] Local public health officials in a stratified random sample of 776 communities across the US were surveyed about the implementation of 20 types of public health activities that are recommended by national guidelines for use in every U.S. community (Table 1), and about the types of community organizations that engage in implementing each activity. The public health activities include assessments of community health needs and priorities, community engagement and multisector priority setting, implementation of action plans to address community needs and health risks, public health services organization and resource allocation, and monitoring and evaluation activities to track community progress.

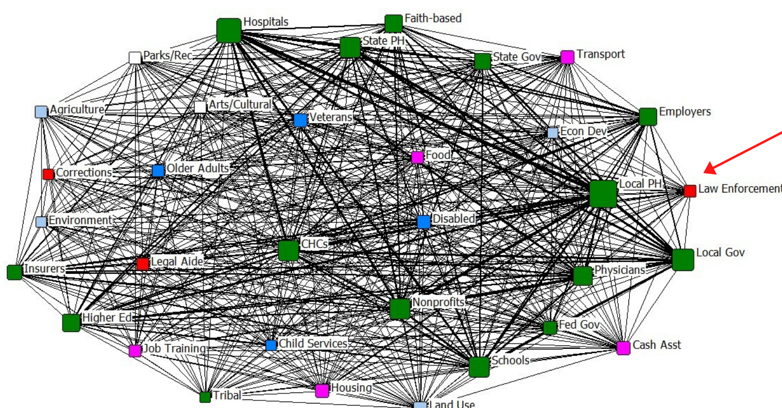


Figure 1: Mapping connectivity between law enforcement and other community organizations in the average U.S. community, 2018.

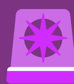
Figure shows the connections between law enforcement and other community organizations by sector for the entire survey sample. The lines between the nodes are weighted by the tie strength and the node size is based on the degree centrality. Node colors represent public health organizations and other community organizations, by sector.[8]

In Figure 1 we show a network map, which is a visual representation of the patterns of connectivity that exist between law enforcement agencies and other types of organizations in the average U.S. community as of 2018. Each type of organization, or sector, is represented by a square, with larger squares representing organizations that play more central roles in the network based on their connections to other organizations. Each pair of organizations represents a dyad, which is connected by a line whose thickness indicates the level of connectivity that exists between the two sectors. In our data, connectivity is measured as the proportion of public health activities that are jointly contributed by both of the two sectors represented in a dyad. Figure 1 shows that law enforcement has relatively limited connectivity with most other sectors in the average U.S. community, and this places law enforcement in a less influential (peripheral) position within the average community network.

The research team used methods from the field of network analysis to quantify the extent to which law enforcement agencies engage with other community organizations in helping to implement public health activities. The study focused on three measures of law enforcement engagement in public health networks:

the percentage of communities with law enforcement engagement in at least one of the recommended public health activities (extensive margin of engagement).

the percentage of public health activities in which law enforcement is engaged (intensive margin of engagement).



the percentage of public health activities jointly contributed by law enforcement and other types of community organizations, by sector (cross-sector connectivity).

We used these measures to analyze the variation in law enforcement engagement in local public health networks across the U.S. Additionally, we explore differences in law enforcement network engagement between urban and rural communities, recognizing that the opportunities and constraints for engagement may vary across community contexts.

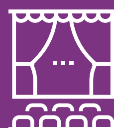
Key Findings

Among the many types of community organizations that participate in local public health networks, law enforcement agencies maintained the highest levels of engagement with:

local governmental public health agencies

hospitals

housing organizations



arts and cultural organizations

Law enforcement showed the lowest levels of engagement with organizations providing children's services, food and nutrition services, and parks and recreation.

Law enforcement agencies were most likely to engage in the following types of public health activities investigating adverse health events, lab testing for heath investigations, and assessing community health needs.

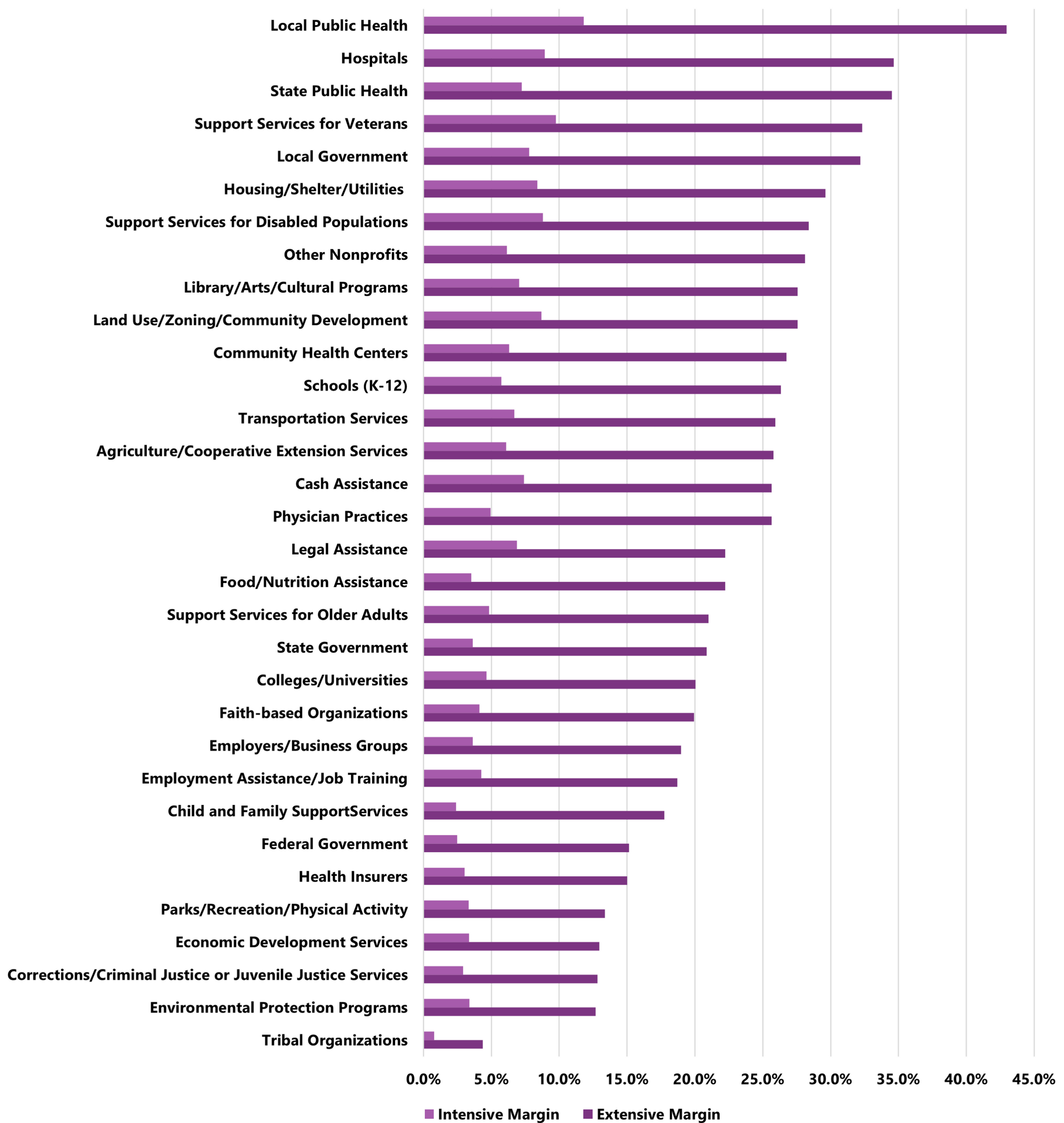
Conversely, these agencies were least likely to engage in implementing interventions based on priorities, linking people to needed health and social services, and deploying resources based on a community plan.

Law enforcement connectivity with other sectors was significantly lower in rural than in urban communities across a wide range of sectors.

Law enforcement jointly worked with organizations providing support services for veterans on 7.4% of public health activities in rural communities and 11.6% of activities in urban communities.

In terms of jointly contributing to recommended public health activities, law enforcement was least connected with the federal government, corrections, criminal justice or juvenile justice services, child and family support services, and tribal organizations across rural and urban communities.

Figure 2: Law enforcement connectivity with other sectors in addressing public health activities, 2018



In Figure 2 we display two summary measures of connectivity between law enforcement agencies and other types of community organizations as of 2018. The extensive margin of connectivity indicates the percent of U.S. communities in which law enforcement agencies maintain any level of connectivity with other community organizations. The intensive margin of connectivity indicates the level of connectivity between law enforcement and other community organizations in the average U.S. community, based on the number of public health activities jointly contributed.

Recommended Action

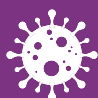
Even though professionals in law enforcement and public health are called upon to address many common community problems, our results show that law enforcement agencies engage in local public health networks in fewer than half of all U.S. communities. Where this engagement exists, law enforcement agencies contribute to a small fraction of the public health activities that are recommended for implementation in every U.S. community, and they engage with a relatively narrow array of other community organizations. Collectively, these findings suggest that communities face many untapped opportunities for productive collaboration between these two important sectors.

Actions to increase network engagement should be tailored to community contexts and build upon existing relationship patterns found within public health networks, in keeping with the larger body of evidence and reasoning about network formation and evolution.[9] Some specific action steps are suggested below:

Communities with No Law Enforcement Engagement

These communities should focus on brokering new relationships with law enforcement agencies, following a strategy of small wins.[10] For example:

Identify actors within the existing public health network who are willing and able to serve as a bridge to the law enforcement sector. For example, other first-responder agencies like fire departments and emergency medical service organizations may have existing connections with law enforcement that can be expanded to incorporate public health activities.



Start with a public health activity or problem that has high salience and immediate relevance for law enforcement agencies. For example, COVID-19 screening and vaccination among the law enforcement workforce may provide a logical starting point for engagement in public health issues.

Use network peer pressure. Identify a public health activity that already engages a broad range of community organizations in implementation. Engage these multiple community organizations in simultaneous outreach and communication efforts with law enforcement (called triangulation or triadic closure in the network literature).[11]

Highlight examples and opinion-leaders from other communities. Successful models of law enforcement engagement from similar communities can provide a valuable proof of concept.

Communities with Existing Law Enforcement Engagement

These communities should focus on nudging law enforcement agencies toward engagement in a broader array of public health activities and toward higher levels of connectivity with other community organizations. The overarching goal should be to build network relationships that are most likely to help communities identify and eliminate harmful and inequitable policing practices. For example:

Prioritize public health activities that are needed to help identify and raise awareness about policing practices that pose threats to public health. Examples may include public health surveillance and investigation capabilities, data sharing, data analysis, and public reporting activities.

Focus on strengthening connectivity between law enforcement agencies and other community organizations that hold high levels of influence in the community. For example, hospitals and health insurers often enjoy high levels of influence by virtue of their large roles in the local economy and their connections with business stakeholders and public officials. Physician organizations often enjoy high influence due to their recognized medical expertise and professional credibility. State and federal agencies can bring influence in the form of outside expertise, evidence from other communities and access to external resources.

Ensure that the public health network includes strong representation from organizations that serve communities who are disproportionately affected by harmful and inequitable policing practices. Use the knowledge and experiences of these stakeholders to craft strategies for strengthening meaningful law enforcement engagement.

Strong multi-sector collaborations are needed for communities to successfully address problems such as police-involved violence, mass incarceration and opioid misuse and abuse, which significantly contribute to health inequities.

Law enforcement has an important role in tackling these challenging issues and their engagement in public health networks needs to be fully understood to identify barriers to and opportunities for engagement. Next, researchers will explore cross-sectional patterns and associations between law enforcement engagement in local public health networks and trends of police-involved violence and mass incarceration within communities. The goal of this line of research to be able to recommend strategies for meaningful engagement of law enforcement in these networks.

The limitations of this study should be kept in mind when interpreting and using these results. Most importantly, our study relies on data that are self-reported by local public health officials across the U.S. and therefore the results may not fully reflect the perspectives and experiences of other community stakeholders--including law enforcement agencies themselves. Nevertheless, validation studies have confirmed that these officials are reliable sources of information about public health activities implemented within the jurisdictions they serve and the array of organizations that engage in these activities. Leaders seeking to change and improve networks should be informed not only by available empirical research such as the results of this study, but also by real-time feedback and experiences from a broad range of actual and potential network participants.[13]

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TABLE 1. NATIONAL LONGITUDINAL SURVEY OF PUBLIC HEALTH SYSTEMS (NALSYS) PUBLIC HEALTH ACTIVITY QUESTIONS.

Activity	Question
1	In the past three years in your jurisdiction, has a community needs assessment process been conducted that systematically describes the prevailing status in the community?
2	In the past three years in your jurisdiction, has a survey of the population for behavioral risk factors been conducted?
3	In the past three years in your jurisdiction, are timely investigations of adverse health events conducted on an ongoing basis, including communicable disease outbreaks and environment health hazards?
4	Are the necessary laboratory services available to support investigations of adverse health events and meet routine diagnostic and surveillance needs for your jurisdiction?
5	In the past three years in your jurisdiction, has an analysis been completed of the determinants of and contributing factors to prioritize health needs, the adequacy of existing health resources, and the population groups most effected?
6	In the past three years in your jurisdiction, has an analysis been completed of age-specific participation in preventive and screening services?
7	In your jurisdiction, is there a network of support and communication relationships that includes health-related organizations, the media, and the general public?
8	In the past YEAR in your jurisdiction, have there been formal efforts to inform public officials about the potential public health impact of decisions under their consideration?
9	In the past three years in your jurisdiction, has there been a prioritization of the community health needs that have been identified from a community needs assessment?
10	In the past three years in your jurisdiction, have community health initiatives been implemented that are consistent with priorities established from a community health needs assessment?
11	In the past three years in your jurisdiction, has a community health action plan been developed with community participation to address community health needs?
12	In the past three years in your jurisdiction, have plans been developed to allocate resources in a manner consistent with community health action plans?
13	In the past three years in your jurisdiction, have resources been deployed as necessary to address priority health needs identified in the community health needs assessment?
14	In the past three years in your jurisdiction, has an organizational assessment of the local public health agency been conducted?
15	In the past three years in your jurisdiction, have age-specific priority health needs been addressed effectively through the provision of or linkage to appropriate services?
16	In the past three years in your jurisdiction, have there been regular evaluations of the effects of public health services on community health status?
17	In the past three years in your jurisdiction, have professionally recognized process and outcome measures been used to monitor public health programs and to redirect resources as appropriate?
18	In the past three years in your jurisdiction, has the public regularly received information about current health status, health care needs, health behaviors, and health care policy issues?
19	Within the past YEAR in your jurisdiction, has the media received reports on a regular basis about health issues affecting the community?
20	In the past three years in your jurisdiction, has there been an instance in which a mandated public health program or service failed to be implemented as required by state or local law, ordinance, or regulation?