Assessment of Kentucky's Local Health Department Cross-Jurisdictional Sharing: Strategy for Maximizing Efficiency

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ABSTRACT

Objective: The purpose of this study was to examine patterns of cross-jurisdictional sharing across the 61 local public health jurisdictions (LHJs) in Kentucky. The opportunities to reduce the cost-of-service delivery for Kentucky's LHJs via cross-jurisdictional sharing present a mechanism to address financial instability across the state by achieving economies of scale, especially among smaller jurisdictions.

Design: A cross-sectional study design was used to examine patterns of cross-jurisdictional sharing across the 61 LHJs in Kentucky. The survey tool utilized was designed by the Center for Sharing Public Health Services, an initiative managed by the Kansas Health Institute with support from the Robert Wood Johnson Foundation.

Results: Seventy-two percent of the 61 LHJs in Kentucky responded to the survey. The majority of responding jurisdictions sharing services were rural, single-county jurisdictions, utilizing service-related informal sharing arrangements. The majority of health departments, when asked to identify which programmatic areas shared service arrangements were focused in, listed those services requiring intensive staff training such as Health Access Nurturing Development Services (HANDS) and epidemiology. Of particular interest were the services most infrequently shared such as communicable disease screening and treatment.

Conclusions: This study suggests that, pre-COVID-19, a core group of primarily rural, single-county Kentucky local health departments has experience with cross-jurisdictional sharing. Among this group, engagement in informal arrangements was the form of cross-jurisdictional sharing predominantly used, with few jurisdictions reporting shared functions with joint oversight. When considering the potential benefits and efficiencies that cross-jurisdictional sharing can provide to public health departments and their communities, for some, COVID-19 may have been a catalyst to engage in sharing across health department jurisdictional lines.

KEY WORDS: collaboration, cross-jurisdictional sharing, efficiency

In 2018, overall health in Kentucky was ranked by American's Health Rankings (AHR) annual report among the lowest in the country at 45th of the 50 states.[1] For health outcomes, which combine measures of health behaviors, community and environment, policy and prevention, and clinical care, Kentucky ranked 47th. Kentucky ranks in AHR's lowest category in health behaviors leading to drug deaths, obesity, physical inactivity, and smoking, as well as the community and environmental measures of children in poverty, policy, and prevention issues, such as HPV (human papillomavirus) vaccinations, and clinical care measures, such as cancer deaths.[1] In addition, in the years immediately preceding the COVID-19 global pandemic, Kentucky experienced the impacts of a hepatitis A outbreak across the state and the effects of the worst flu season in Kentucky's recorded history.[2]

With so many of Kentucky's health issues connected to health behaviors, attention has turned to the work of the state's local public health jurisdictions (LHJs) as a means to stem the rising preventable health burden.[3] The focus on local public health has been further heightened by the COVID-19 pandemic. However, "if you've seen one health department, you've seen one health department" is an oft-quoted sentiment that characterizes the jurisdiction-specific services, interventions, and infrastructure methodologies in

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LHJs across the state. In Kentucky's public health shared governance system, LHJs are governed by state and local authorities, both of whom can impact the portfolio of services and allocation of resources. Kentucky's 61 LHJs include 47 single-county health departments and 14 multiple-county or district health departments.[4] Population size of both single-county LHJs and multiple-county or district health departments vary greatly as does the local funding available to support new and emergent health concerns.[3,5]

In Kentucky, state law mandates that specific public health services be delivered through the LHJs. These services include communicable disease control, emergency preparedness and response, regulatory enforcement, health education, and health policy development.[6] The state health department (Kentucky Department for Public Health [KDPH]) supports these locally provided services, with statewide services such as laboratory testing, preparedness planning, vital statistics, epidemiologic surveillance, and programmatic expertise. Adding to the complexity of this system are funds that often flow through KDPH to LHJs from federal grants and other sources and require initiatives, such as Title X Family Planning and Diabetes Prevention and Control, be added to the portfolio of services offered by LHJs.[7-9] In addition, LHJs are governed via the authority of Local Boards of Health (LBOH).[6] LBOH members often direct a wide variety of initiatives to be delivered by LHJ staff to address issues in specific communities. Examples include decisions regarding community health assessment completion and budget support of activities to address obesity and other community health concerns.[6,10-12]

In January 2018, the Kentucky legislature began a pension reform process, creating a projected $38.5 million deficit in the state's public health funding. Estimates suggested this deficit would have a substantial negative impact on LHJs in the following year. The shifting of funds highlighted the cost of discordant funding streams and inconsistent service offerings, along with reduction in programmatic funding sources that contributed to the fiscal instability of Kentucky's public health system. The impact of such instability necessitated action by public health leaders across the state and included a focus on prioritization of the core public health concepts in Public Health 3.0[13] and prevention of waste and duplication of effort through an assessment of Kentucky's LHJ cross-jurisdictional sharing (CJS) as a strategy for improving efficiency.[3]

CJS has been highlighted as one strategy to better deliver public health services in light of budget limitations such as those in Kentucky. CJS is "the deliberate exercise of public authority to enable collaboration across jurisdictional boundaries to deliver essential public health services and solve problems than cannot be easily solved by single organizations or jurisdictions."[14] Sharing arrangements range from as-needed assistance between LHJs to service-related arrangements, shared programs or functions, and, at the most, integrated to regionalization or consolidation of jurisdictions.[14] Researchers have studied CJS among LHJs,[15-20] finding sharing projects with information systems and data exchange,[21] environmental health services,[22] laboratory services,[23] community health assessments,[24] emergency management,[25] and during the COVID-19 pandemic, contact tracing,[26] among others.[27] Benefits of CJS, with these and other services and projects, include increased hiring capacity for needed expertise, economies of scale, and provision of more services than specific jurisdictions can provide alone.[14-16]

The opportunities to solve problems of financial instability by reducing the cost-of-service delivery for Kentucky's LHJs, via CJS, present a mechanism to achieve economies of scale, especially among smaller jurisdictions.[16-18] In addition, Humphries et al[16] identified a greater use of nonmandated services (eg, asthma, obesity prevention, healthy food options) among jurisdictions with greater levels of sharing. Thus, CJS presents Kentucky an opportunity to provide LHJ services in both an effective[28] (eg, needed services to a state with many health needs) and an efficient[28] (minimal resource outlay) format. To maximize CJS opportunities, Kentucky must first identify the baseline of existing CJS to assess opportunities for greater collaboration. As such, this study sought to understand areas of current CJS, types of sharing arrangements, motivations for sharing, and changes over time in sharing.

Methods

Study design and sample

We used a cross-sectional study design to examine patterns of CJS across the 61 LHJs in Kentucky. Kentucky's jurisdictions serve geographically diverse areas of the state, covering urban, rural, and Appalachian populations.

Data collection

A Qualtrics survey was sent to all 61 LHJ directors to gather information on the levels of CJS occurring in their department. Directors were first contacted by e-mail in April 2019 and invited to participate in the survey. A reminder e-mail was sent after 30 days to encourage survey completion.

The survey was designed by the Center for Sharing Public Health Services (Center) to provide a greater understanding of existing CJS arrangement among public health entities such as health departments. The survey included 5 sections: General Information, Your Health Department and Shared Services, Your Governing Body and Shared Services, Legal Issues, and Current Shared Services. The Current Shared Services section identified services that included emergency preparedness, epidemiology, communicable disease, chronic disease, maternal and child health services, environmental health programs, and several others. Within the delineation of each service type, questions were asked about which specific functions were shared, primary levels of responsibility, and motivations for creating the shared arrangement. The Center, an initiative managed by the Kansas Health Institute with support from the Robert Wood Johnson Foundation, provides CJS technical support and tools to public health agencies.[29]

Statistical analysis

We ran descriptive statistics on the data collected to examine patterns in CJS arrangements in LHJs across the state. Additional data on accreditation status, geographic location, and district arrangement were used to examine patterns of CJS based on community and department characteristics.

Results

Sample characteristics

A total of 44 LHJs responded to the survey for a response rate of 72%. Of those that responded, 28 reported they were currently sharing services with other LHJs in the state (Figure 1). The majority of departments sharing services were single-county jurisdictions in rural parts of the state (Figure 2). A total of 15 jurisdictions in the state have received PHAB (Public Health Accreditation Board) accreditation, and 11 of those jurisdictions participate in shared service arrangements.

CJS trends

Most public health jurisdictions reported engagement in service-related sharing arrangements, meaning they had service provision agreements, mutual aid agreements, and shared purchase of staff time (Figure 3). Engagement in informal arrangements was reported in 36% of jurisdictions, and only 6 jurisdictions reported shared functions with joint oversight. More than 60% of jurisdictions reported increases in the amount of services they were sharing overtime, with very few reporting no change or less sharing (Figure 4).

Commonly selected program areas also included epidemiology or surveillance, emergency preparedness, and administrative services (Figure 5). Interestingly, numerous respondents indicated "other" sharing arrangements that were focused on the Health Access Nurturing Development Services (HANDS) program, information technology (IT), nutrition, and the Harm Reduction Syringe Exchange Program (HRSEP). Departments reported the fewest sharing arrangements in communicable disease screening and treatment, maternal and child health services, and population-based primary prevention programs.

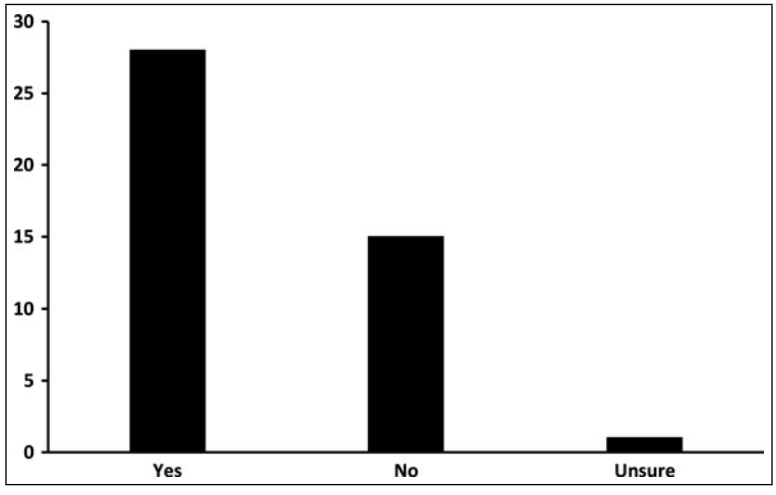

FIGURE 1 Number of Local Public Health Jurisdictions in Kentucky That Reported Sharing Services[a]
[a]From the authors' analysis of cross-jurisdictional sharing survey.

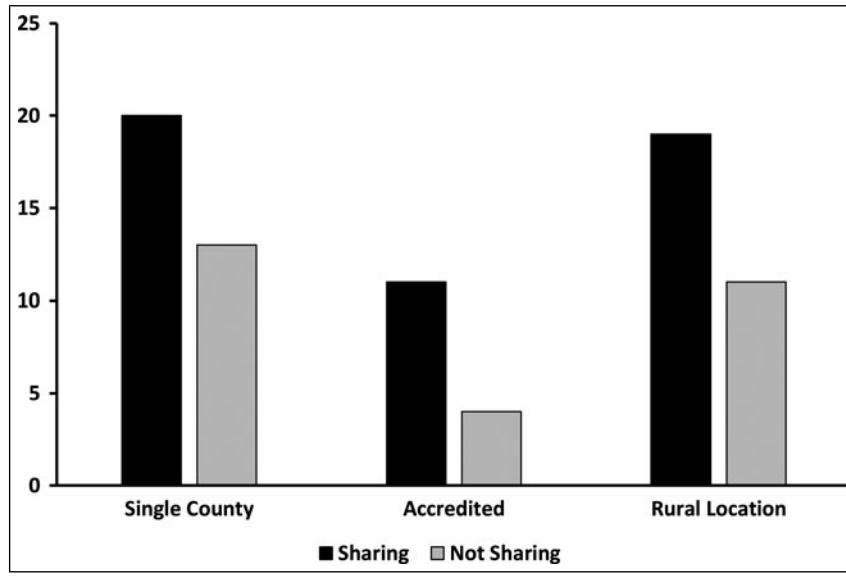

FIGURE 2 Characteristics of Local Public Health Jurisdictions Participating in Cross-Jurisdictional Sharing[a]
[a]From the authors' analysis of cross-jurisdictional sharing survey linked with information on jurisdiction type, geographic location, and accreditation status.

Motivation for CJS and outcomes

Respondents were asked to share motivations for creating each shared service arrangement. The most frequently provided response was "to make better use of resources," followed by "to save money" and "to respond to program requirements." Respondents were also asked to comment on the whether the arrangement had been successful in its original intent. Many respondents noted benefits related to staff capacity and recruitment. As 2 of the respondents noted, "By pooling our resources and sharing an employee, we were in a better position to offer a competitive salary and recruit well-qualified staff" and "We have expanded our expertise and ability to monitor our community." Respondents were also asked to comment on how the CJS arrangement was evaluated, which the vast majority indicating informal evaluation methods such as "If it works, we continue" or "We discuss if the arrangement is mutually beneficial."

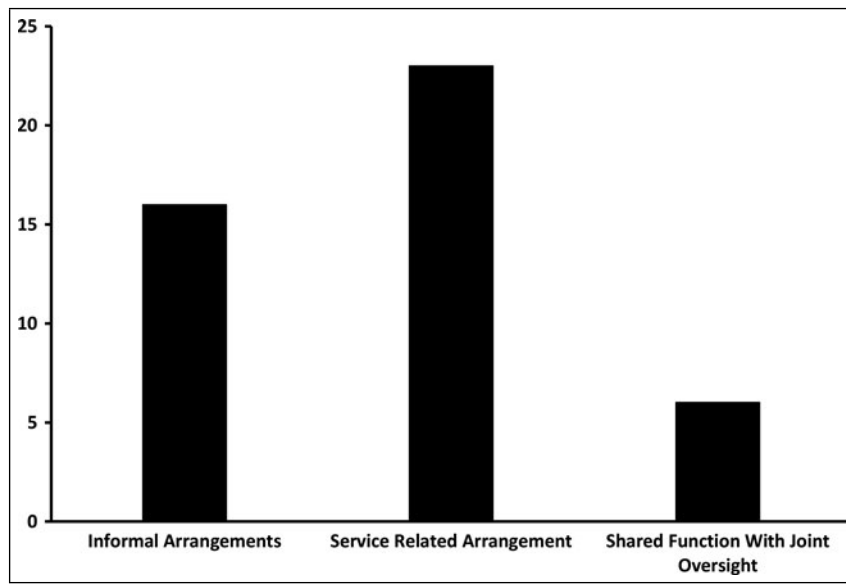

FIGURE 3 Service Sharing Arrangement Types Reported by Local Health Departments Engaged in Sharing Arrangements[a]
[a]From the authors' analysis of cross-jurisdictional sharing survey.

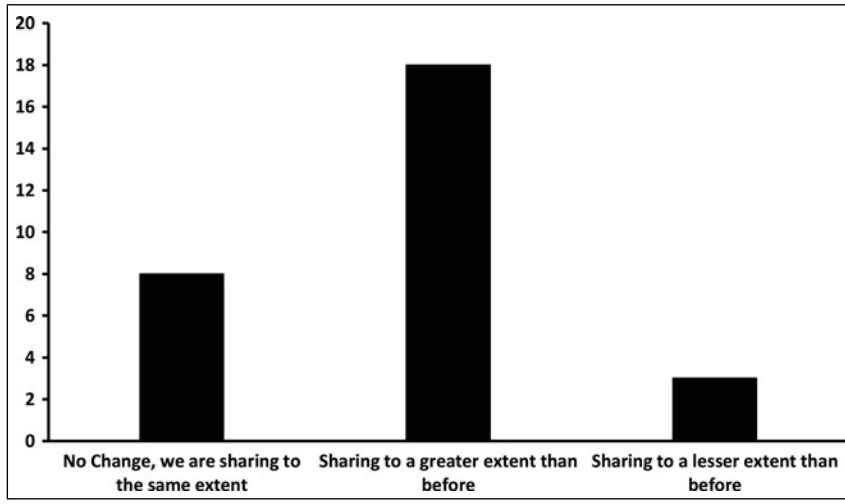

FIGURE 4 Changeover Time in Service Sharing[a]
[a]From the authors' analysis of cross-jurisdictional sharing survey.

Discussion

This study suggests a core group of primarily rural, single-county Kentucky local health departments has experience with CJS. Among this group, engagement in informal arrangements was the form of CJS predominantly used, with few jurisdictions reporting shared functions with joint oversight. Of note, when assessing the programmatic areas most frequently shared, they are programs requiring in-depth trainings (HANDS or emergency preparedness), specialized knowledge (IT, epidemiology, and nutrition), or programs newer to the Kentucky public health landscape (HRSEP). Turning to CJS for these programmatic areas could be appealing to low-resourced jurisdictions and those with smaller human resource pools from which to draw appropriately trained and credentialed staff. However, the use of primarily informal arrangements for CJS sharing may indicate a desire by LHJs to retain the ability to hire staff and bring the service delivery back within a jurisdiction. This desire was noted in open-ended survey responses such as "This partnership aided us in continuing to provide services while recruiting/training a new staff member." In a state with public health financial instability, more structured, formal shared functions with joint oversight could provide more of the longer-term cost saving and efficient service delivery previously identified as benefits of CJS. Further research would be needed to determine if LHJ leaders fear formalizing CJS arrangements and thus of moving from informal sharing to the most integrated CJS arrangements such regionalization or consolidation of jurisdictions.

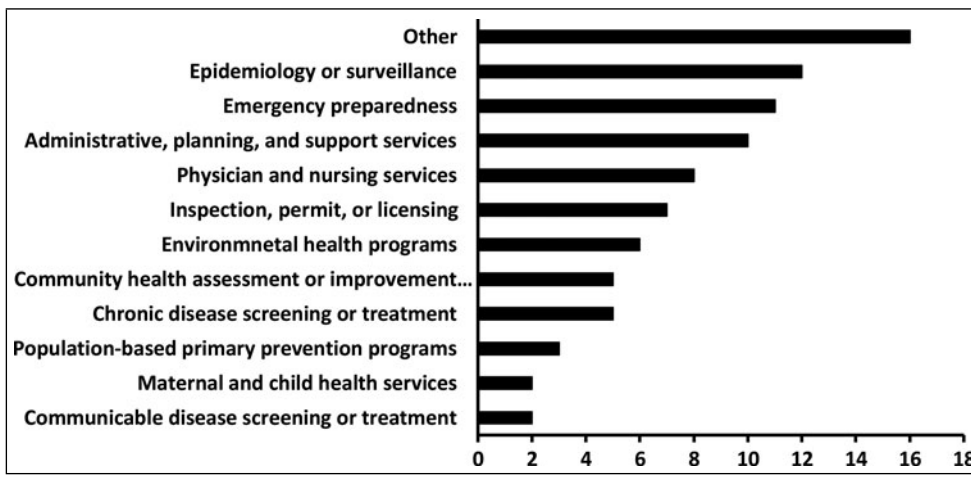

FIGURE 5 Programmatic Areas Where Local Health Departments Share Services[a]
[a]From the authors' analysis of cross-jurisdictional sharing survey.

Of particular interest were the services most infrequently shared such as communicable disease screening and treatment. These service offerings include some of the longest provided public health services and, in some cases, such as health screening, those most closely aligned to the medical model. However, less than 6 months after the cross-jurisdictional survey results were delivered to local health department directors, the first case of COVID-19 was detected in the state and the local health departments were thrust onto the front lines of COVID-19 response, which included testing for COVID-19 and, upon release of vaccines, community vaccination events. The emergent needs of communities due to COVID-19 and funding provided for the response necessitated the transition of attention from financial instability and increasing public health efficiencies to COVID-19 testing, contact tracing, and vaccinations.

Rather than permanently moving attention away from the potential benefits that CJS can provide to public health departments and their communities, for some, COVID-19 may have been a catalyst to sharing, even those medical model services most infrequently share before, across health department jurisdictional lines. The Center's latest report, *Sharing Resources During the COVID-19 Pandemic*, states that the size of the response to COVID-19 created a situation in which many health department jurisdictions had no choice but to work together and to work closely with other community resources.[30]

In addition, respondents showed a strong understanding of CJS to "better use resources" and to "save money" when indicating these as their motivations for entering CJS arrangements. This understanding and the positive responses given regarding the success of the CJS arrangements indicate an environment open to CJS. However, not surprisingly in a state in which the majority of CJS arrangements are not shared functions with joint oversight, respondents indicated a lack of formal metrics for evaluating success.

Kentucky's LHJs are now able to learn from those CJS relationships formed in a pre-COVID environment and those formed in the throes of an emergent global pandemic. Experiences now exist within the state with CJS of services requiring in-depth training and those rarely shared, pre-COVID-19, involving communicable disease screening and tracking. As the need to ensure long-term financial stability of public health departments in Kentucky returns to the list of primary concerns, CJS remains a viable opportunity to provide services to Kentucky residents that many jurisdictions cannot do alone. Future research may include a post-COVID-19 assessment of positive and negative sharing experiences, types of sharing specific to service delivery areas (eg, environmental services, HANDS programing), educational opportunities formalization of sharing arrangements, and creative ideas generated from these experiences through which Kentucky local health departments can do more together.

Implications for Policy & Practice

- The national public health department landscape, like Kentucky's, includes primarily small jurisdiction health departments.[31] CJS offers a means for collaboration and resource allocation to promote more consistent service offerings.
- For services that require resources for intensive training of staff, such as epidemiology and HANDS, CJS provides a mechanism for these services to be offered in low-resourced communities.
- The COVID-19 pandemic may have opened Kentucky's LHJs to CJS for communicable disease activities that were infrequently shared before the event and thus provide motivation for exploring CJS in other programmatic areas previously not considered by individual jurisdictions.
- CJS arrangements provide opportunities for effective and efficient service delivery that is extremely important in low-resourced areas. However, to maximize those opportunities and correct any unintended consequences of CJS, well-designed and well-implemented evaluation of the arrangements must be identified early in the arrangements.

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