

Bureau of Business and Economic Research

Cross-Jurisdictional Sharing of Public Health Services in West Virginia

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Table of Contents

List	of Figu	res and Tables	iv
Exec	utive	Summary	v
1	Intro	oduction	1
2	Cros	ss-Jurisdictional Sharing Background	2
	2.1	Effectiveness of CJS Agreements	3
	2.2	Examples of CJS in US States	3
3	Health Department Profiles		5
	3.1	Analysis of West Virginia's LHD Budgets	8
4	Surv	ey	10
	4.1	Methodology	10
	4.2	Survey Results	11
5	Cond	clusion	20
	5.1	Sharing Opportunities	20
	5.2	State Policy Options	21
Refe	rence	s	
App	endix	A: Surveys	24
	Shor	rt-Form Survey	24
		Long-Form Survey	



List of Figures and Tables

Figure 1: Spectrum of Cross-Jurisdictional Sharing Arrangements	
Figure 2: Health Department Budgets	
Figure 3: Health Department Per Capita Spending	
Figure 4: Number of Full-time Employees	
Figure 5: Number of Full-time Employees per 10,000 Residents	8
Figure 6: Motivations for Implementing Shared Service Arrangements	11
Figure 7: Program Areas Currently Shared or Planned for Sharing	12
Figure 8: Formal Agreements	13
Figure 9: Formal Agreement Types	14
Figure 10: Reducing Costs	15
Figure 11: Service Delivery Improvements	16
Figure 12: Reasons for Not Sharing Services	18
Figure 13: Legal impediments to Service Sharing	1 ^c



Executive Summary

Faced with funding reductions from state and federal sources, many of West Virginia's county-based local health departments (LHDs) have attempted to find operational cost savings, while at the same time maintaining the quality of their public health programs. One of the ways that has been shown to be effective in reducing costs for individual health departments is through the use of cross-jurisdictional sharing agreements between local health departments.

In order to research and promote service sharing agreements in the state, the West Virginia Bureau for Public Health launched the Cross-jurisdictional Resources and Opportunities to Advance the Delivery of Services (Cross ROADS) Initiative in 2016. As part of this initiative, the WVU Bureau of Business and Economic Research conducted a survey of LHD directors in March 2017 to assess the current state of CJS agreements in West Virginia. The survey catalogues CJS arrangement currently in use in order to establish the degree to which these programs are already in operation in the state's LHDs. In this report, we report the findings of this survey, as well as provide some background on CJS agreements in the public health arena and potential policy options for the state government. Highlights of this research are as follows:

- Of the 42 local health departments that responded to the survey, 17—or 40 percent—said they
 were currently sharing some services across jurisdictions.
- Another 25 departments were considering sharing services, indicating that nearly 75 percent of the health departments surveyed were either considering or already engaged in some form of service sharing.
- **Service sharing does not appear to be reducing costs significantly.** The large majority of shared services provided cost reductions of less than \$25,000 per year on average.
- However, health departments reported that shared services did allow them to improve service delivery, either by offering new services or expanding existing services.
- The primary reasons that local health departments cited for entering into sharing agreements were saving money or using resources more effectively.
- Emergency Preparedness was the most common service shared across health department jurisdictions. However, health departments were conduction some level of sharing in all major service areas.
- There remains significant skepticism among local health department administrators of the benefits of cross-jurisdictional service sharing.



1 Introduction

Faced with funding reductions from state and federal sources, many of West Virginia's county-based local health departments (LHDs) have attempted to find operational cost savings, while at the same time maintaining the quality of their public health programs. One of the ways that has been shown to be effective in reducing costs for individual health departments is through the use of cross-jurisdictional sharing (see for example Santerre 2009). Sharing arrangements allow for administrative and other program costs to be distributed across many jurisdictions, allowing for greater efficiency in the provision of health services in the state. CJS has also been shown to potentially improve health outcomes as cost-sharing may allow LHDs to offer additional health services on a sharing basis that they are unable to offer individually.

Previous research by the West Virginia University Bureau of Business and Economic Research (Lego and Deskins 2016) examined the potential for CJS in the state's local health departments. Based on research done by Drema Mace, PhD, director of the Mid-Ohio Valley Health Department (MOVHD), the study examined the potential cost savings from full-regionalization of the state's LHDs. However, the report called for additional research to help understand the degree to which the state's LHDs are currently sharing resources, as well as the potential for greater sharing between LHDs.

Following on the recommendations in the previous report, the West Virginia Bureau for Public Health launched the Cross-jurisdictional Resources and Opportunities to Advance the Delivery of Services (Cross ROADS) Initiative in 2016 to research and promote CJS agreements in the state. As part of this initiative, the BBER was asked to conduct a survey of LHD directors in March 2017 to assess the current state of CJS agreements in West Virginia. The survey catalogues CJS arrangement currently in use in order to establish the degree to which these programs are already in operation in the state's LHDs. In this report, we report the findings of this survey, as well as provide some background on CJS agreements in the public health arena.

The report is organized as follows. In Section 2, we provide background on CJS agreements in the academic literature and discuss how they are used in other states. In Section 3, give a brief profile of the state's local health departments. In Section 4, we present the results of the survey of LHD directors across the state. Finally, in Section 5, we provide conclusions and present several potential areas where service sharing can improve health delivery at the state's LHDs.



2 Cross-Jurisdictional Sharing Background

The Center for Sharing Public Health Services defines cross-jurisdictional sharing as "the deliberate exercise of public authority to enable collaboration across jurisdictional boundaries to deliver public health services" (CSPHS 2017b). As shown in Figure 1, service-sharing arrangements can come in a wide variety of forms, from simple information sharing to more formal agreements to share staff or programs. Service sharing can also evolve into consolidation of local health departments into regional organizations.

Figure 1: Spectrum of Cross-Jurisdictional Sharing Arrangements

As-Needed Assistance	Service- Related Arrangements	Shared Programs or Functions	Regionalization/ Consolidation
 Information sharing Equipment sharing Expertise sharing Assistance for surge capacity 	 Service provision agreements (e.g., contract to provide immunization services) Purchase of staff time (e.g., environmental health specialist) 	 Joint programs and services (e.g., shared HIV program) Joint shared capacity (e.g., epidemiology, communica- tions) 	 New entity formed by merging existing local public health agencies Consolidation of one or more local public health agencies into an existing local public health agency
Looser Integration			Tighter Integration

Source: Center for Sharing Public Health Services. Reprinted from CSPHS (2017b).

Cross-jurisdictional sharing and consolidation of government services has become increasingly common in a wide range of government agencies. A recent study funded by the Robert Wood Johnson Foundation (Kaufman 2010), found extensive sharing activity in governmental sectors ranging from education and economic development, to public safety and waste management. Service sharing has become widespread in the nation's local health departments as well. According to a recent study by the National Association of County & City Health Officials (NACCHO 2014), more than half of all health departments in the United States share some form of service with another local health department. Sharing was more likely to occur in smaller health departments that served less than 50,000 residents. The study found that programmatic areas—such as emergency preparedness, epidemiology or surveillance, and environmental health programs—were the areas shared most often among local



health departments. Organizational functions—such as information technology, or communication—were shared less often.

2.1 Effectiveness of CJS Agreements

Researchers have examined the effectiveness of cross-jurisdictional sharing of governmental services in a number of areas. Santerre (2009) studied whether the size of the population served by the health departments affects the departments' costs. The researchers found that as the population size grew, the cost per capita fell up to the point where population size exceeded 100,000. Above that total, gains from economies of scale were offset by the need to hire new employees, and the congestion of the facilities. Mays et al. (2006) examined service performance across public health organizations and found that the size of the health department system played the largest role in determining health performance. The authors found that service populations between 20,000 and 100,000 were most optimal for public health delivery. Currently in West Virginia, only four of the 49 health departments in the state—Kanawha-Charleston, Mid-Ohio Valley, Berkeley, and Monongalia health departments—have service populations at or above 100,000 people.

Despite their benefits, CJS arrangements can often be difficult to implement. While Kaufman (2010) did not consider health department services directly, the findings in the report apply broadly to a wide range of government services. The study found a number of barriers exist to putting in place sharing arrangements. Primary among them was the fear of loss of local identity. In addition, many local governmental bodies do not want to provide financial support for services provided in other jurisdictions. State and federal regulations often provide their own barriers, the study found. Regulations may prohibit consolidation or sharing across jurisdictions. Lastly, moving toward greater sharing requires input from all stakeholders in the process. This process can take time, but is beneficial in getting buy-in from all of the local entities. In another study funded by the Robert Wood Johnson Foundation, Libbey and Miyahara (2011) find similar barriers to implementing CJS agreements at local health departments. However, the authors found there were some barriers particular to health-related enterprises, such as public officials' lack of knowledge of holistic population-based health services.

2.2 Examples of CJS in US States

Between 2007 and 2008, Kansas conducted a pilot program to enhance cooperation between county health departments in two regions of the state (Hyde 2009). The programs were designed to maintain county control over the health departments, but at the same time increase sharing across county boundaries. The pilot projects set up a regional collaboration to provide emergency preparedness services across multiple counties. They also intended to work to regionalize additional services. Hyde (2009) also discussed an effort in Massachusetts to better coordinate health delivery across its 351 municipalities. The state is continuing to study ways to consolidate and share services

Summit County, Ohio, is an example of regional consolidation of public health services. In 2011, three health departments—Summit County Health District, Akron Health Department, and Barberton Health Department—agreed to consolidate into one countywide health department. Kent State University has conducted extensive research into the impacts of the consolidation of these three health departments. In general, the researchers found that this consolidation led to lower overall expenditures for the combined health department (Hoornbeek et al. 2012). The authors also found that the combined health department provided a greater array of expertise and capabilities than the individual departments could provide. Hoornbeek et al. (2015) considered a broader array of public health department consolidation



and found that the consolidation reduced overall costs by about 16 percent. The study also found that health departments perceived that the consolidation improved service delivery.

Minnesota has pursued greater regional sharing initiatives through the Minnesota Shared Services Learning Collaborative. The collaborative recently conducted an evaluation to understand the degree to which the state's local health departments were sharing services across jurisdictions (Minnesota Department of Health 2015). The evaluation found that the coordinated effort resulted in greater recognition of the importance of service sharing. The assessment found that local health departments in Minnesota were sharing services most often in emergency preparedness, community health assessment, and strategic planning.



3 Health Department Profiles

West Virginia has 49 health departments serving all 55 counties in the state. Of these health department, 39 serve a single county, and eight of the departments are combined city-county health departments. Currently there are two health departments in the state that serve multiple counties: Wetzel-Tyler Health Department and Mid-Ohio Valley Health Department. The Wetzel-Tyler HD is a combined health department for Wetzel and Tyler counties. The Mid-Ohio Valley Health Department is the state's only regional health department, serving Calhoun, Pleasants, Ritchie, Roane, Wirt, and Wood counties.

As shown in Figure 2, the state's health department budgets vary according to the size of the population served. Mid-Ohio Valley had the largest budget in fiscal year 2016, spending more than \$4.5 million. It was closely followed Kanawha-Charleston Health Department at just under \$4.5 million. However, many of the state's health departments are small, with half spending less than \$500 thousand for their relatively rural populations. Monroe County Health Department is the smallest in the state, spending about \$160 thousand.

Wheeling-Ohio Grafton-Taylor Monongalia Harrison-Clarksburg Marion Preston Hampshir Barbour Tucker Mid-Ohio Hardy Lewis Gilmei Randolph-⊟kins Pendleton Cabell-Webster Clay Jpshur-Buckhannon Nicholas Charleston Pocahontas 5 Greenbrier Total Expenditures Beckley-Raleigh (\$, thousands) <\$250k \$250k-\$500k \$500k-\$1M McDowell >\$1M

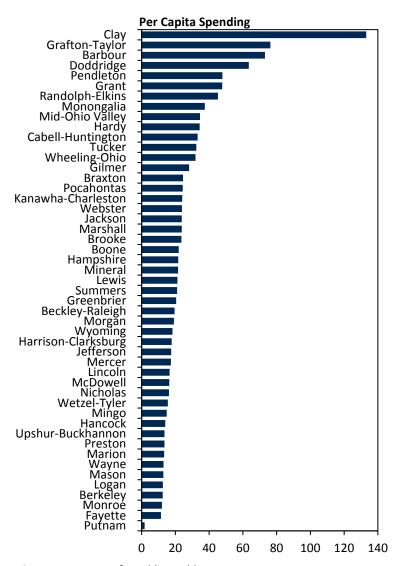
Figure 2: Health Department Budgets

Source: WV Bureau for Public Health



While the state's health department budgets generally correspond with population served, spending per resident varies widely across the state (see Figure 3). Approximately 70 percent of the state's health departments spend less than \$25 per resident. However, per capita expenditures are significantly higher at several departments, with some smaller departments spending more on a per capita basis than their larger counterparts do. Clay County, for example, has the highest per capita spending in the state, with expenditures totaling \$133 per resident. These expenditures are largely due to the fact that Clay County is the home of the state's central Women, Infants, and Children (WIC) program. Pendleton County has one of the smallest overall budgets in the state, but ranks number five in per capita spending. Some counties with larger budgets have low per capita spending. Berkeley County, for example, spends about \$12 per resident, but has the sixth-highest total budget in the state.

Figure 3: Health Department Per Capita Spending



Source: WV Bureau for Public Health

Employment at the state's health departments generally follows the expenditures. As depicted in Figure 4, the larger metropolitan health departments have the greatest number of employees, with only six departments employing more than 20 workers. At 67.1, Mid-Ohio Valley has the largest number of full-time equivalent (FTE) employees, followed closely by Monongalia at just under 51.5, and Kanawha-Charleston at 44.1. Some 13 health departments have fewer than five employees, with Tucker County coming in at 2.9 FTEs, and Wetzel-Tyler, Webster County, and Gilmer County all under four FTEs.

Wheeling-Ohio Grafton-Taylor Monongalia Wetzel-Harrison-Clarksburg Tyler Preston Hampshin ddridge Tucker Mid-Ohio Lewis Gilmei Randolphacksor Mason Braxton Pendleton Cabell-Huntington Webster Kanawha-Upshur-Buckhannon Nicholas Charleston **Pocahontas** Favette Greenbrier Employment **-<**5 Wyoming Monroe 5-10 10-20 McDowell >20

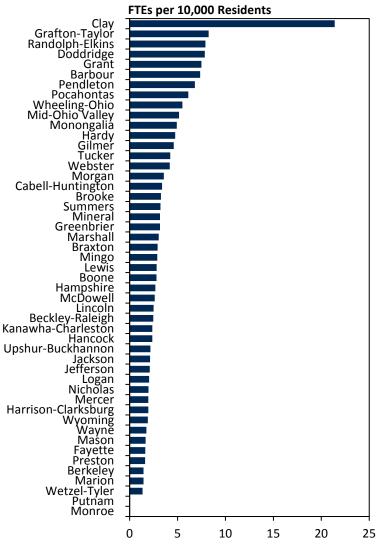
Figure 4: Number of Full-time Employees

Source: WV Bureau for Public Health

Per capita employment mirrors that of per capita spending above. With 21.4 FTEs per 10,000 residents, Clay County has the largest FTEs per capita, as it has significant employment in the state WIC program. Some of the larger health departments, such as Mid-Ohio Valley (5.1 FTEs per 10,000 residents) and Monongalia County (4.9 FTEs per 10,000 residents), also have high per capita employment. Kanawha-Charleston, the state's second-largest department in terms of expenditures, has among the lowest per capita employment, coming in at about 2.4 employees per 10,000 residents.



Figure 5: Number of Full-time Employees per 10,000 Residents



Source: WV Bureau for Public Health

3.1 Analysis of West Virginia's LHD Budgets

West Virginia's average per-capita spending puts the state in the bottom fourth of states nationally, according to data from the National Association of County & City Health Officials (NACCHO 2017). Average spending for all US health departments was \$55 per person in 2016, while West Virginia's average was below \$30. West Virginia's spending at smaller health departments also differs from the national average. The NACCHO study found that the smallest health departments—those serving less than 25,000 people in their service areas—tended to have the highest per-capita spending rates. This indicates that smaller departments are less efficient in providing the minimum level of services. However, in West Virginia, the state's smaller departments tended to have both low overall budgets and low per-capita spending.



The NACCHO study also found that the health department nationally has 4.2 full-time equivalent employees (FTEs) per 10,000 population. However, smaller health departments tended to have higher levels of per-capita employment. Health departments serving populations less than 10,000 had an average of 10.2 full-time equivalent employees for every 10,000 people in their service areas. For larger health departments, the number of FTEs per 10,000 residents was between four and five. West Virginia's health departments generally fall well below the national average in terms of FTEs per 10,000 residents. In all, 35 of West Virginia's health departments fell below the national average FTE level. Berkeley County Health Department, for example, has 1.5 FTEs per 10,000 residents, which is approximately one-third the national average for a department of its size.

The wide variation in health department budgets and employment indicates that the large metropolitan and regional health departments generally have greater resources than those in smaller, more rural counties. In addition, while some health departments have among the largest expenditure totals, they may have lower spending or employment relative to population. Lower per capita expenditures or employment can be an indicator of efficiency, as larger health departments gain from economies of scale. However, it can also be an indication of being under-resourced for the population served by the department, which may be the case with smaller departments that are spread thinly. As Ingram, Bernet, and Costich (2012) point out, higher spending levels tend to be associated with higher performance levels for health department services. Also, the authors indicate that higher local health department spending may be associated with better health outcomes in these jurisdictions. As the research detailed above suggests, smaller health departments thus may benefit more significantly from service sharing than the urban departments serving larger populations.



4 Survey

4.1 Methodology

In March and April 2017, we conducted a survey of all 49 public health departments in the state to ask for information regarding public health service sharing. We distributed two version of the survey, a long-form version that was sent to the 12 health departments participating in the Cross ROADS study, and a short-form survey sent to the remaining 38 departments.¹

The survey questions were largely based on the Assessment Tool for Public Health Services created by the Center for Sharing of Public Health Services (CSPHS 2017a). Both surveys asked respondents whether they were sharing services across departments, and if so, which programs they were sharing. The surveys also asked for an assessment of cost savings from resource sharing. The long-form survey also asked detailed questions about sharing in each program area.

Response rates were high for both surveys. For the short-form survey, 31 of the 38 departments that received the short form responded, for a response rate of 82 percent. For the long-form survey, we received responses from 11 of the 12 departments, a response rate of 92 percent. However, of the 11 departments that responded, only two—Kanawha-Charleston Health Department and Putnam County Health Department—reported that they were sharing any departmental services. These two counties have been acting as essentially a combined health department, as Kanawha-Charleston has taken over operations for Putnam County, while maintaining an independent Board of Health in that county. Because of the limited response to the long-form survey, we have combined the data from the long-form and short-form surveys in our analysis in Subsection 4.2.

The survey has a few of limitations. All survey answers are self-reported, and neither the BBER nor the Bureau for Public Health have attempted to verify information submitted to the survey. Cost estimates in the survey results were calculated without examining actual expenditure data at the state's health departments.

¹ One department responded to both surveys. Full copies of the survey questions are in Appendix A.

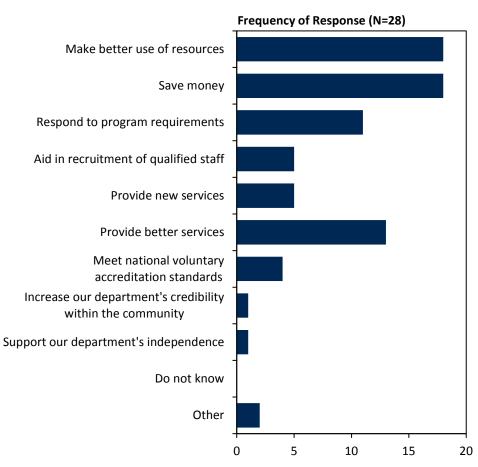


4.2 Survey Results

Of the 42 respondents to the short-form or the long-form survey, 17 said that they were currently sharing services with other health departments in the state, constituting 40 percent of the respondents. Of the remaining 25 that were not currently sharing, 14 were in the process of exploring shared service arrangements, indicating that nearly 75 percent of the health departments surveyed were either considering or already engaged in some form of service sharing.

In Figure 6, we report the motivations cited for implementing shared service arrangements. The primary reasons for seeking out shared arrangements were to meet accreditation standards and to save money. These reasons were cited by 18 of the health departments that were currently sharing services, constituting nearly 65 percent of the departments. Other reasons for sharing services included the need to meet the requirements of health department programs, as well as being able to provide better services for their service population. More than half of the departments cited these reasons for implementing shared services.

Figure 6: Motivations for Implementing Shared Service Arrangements

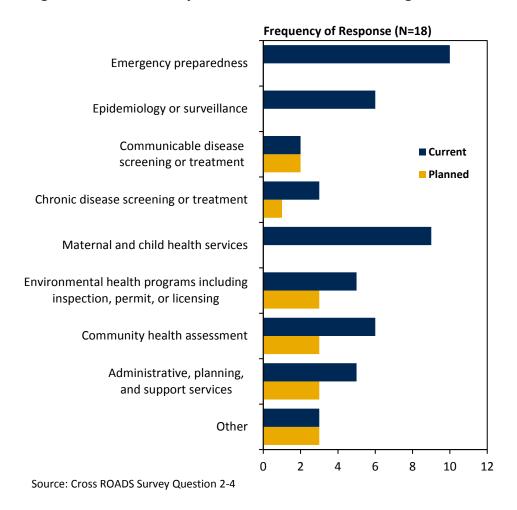


Source: Cross ROADS Long-Form Survey Question 2-9, Short-Form Survey Question 2-3



Health Departments are sharing services in a wide variety of program areas, according to survey results. In Figure 7, we report the program areas where departments are currently sharing and those areas where health departments plan to share services. Emergency preparedness and maternal health services are the two program areas where sharing is most prevalent. However, health departments are currently sharing in all other program areas, and several health departments are planning new agreements in several different areas.

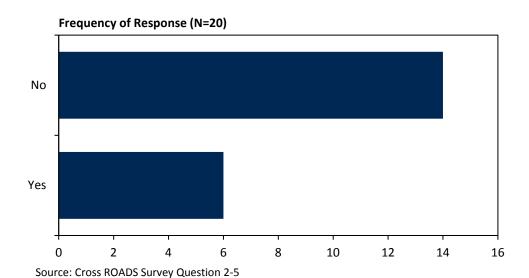
Figure 7: Program Areas Currently Shared or Planned for Sharing





While health departments are sharing services across their organizations, most do not have formal agreements for these sharing arrangements. As shown in Figure 8, of the 20 health departments that responded, 14 said they had no formal agreement for service sharing, while six said that they did have an agreement. Informal agreements between health departments were common among respondents to the survey. One respondent said that the health department she worked for aided another county during the large 2016 flooding without a formal agreement. "If a neighboring county needs help and we have the ability to help, we will."

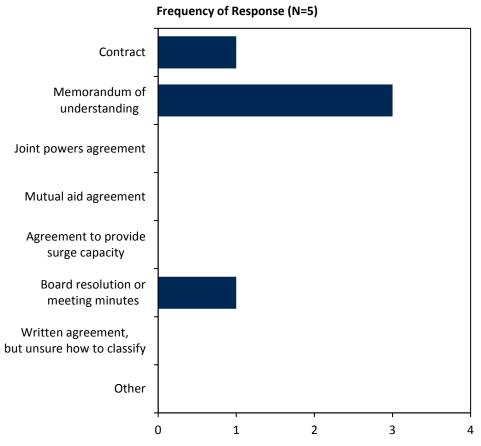
Figure 8: Formal Agreements





For those survey respondents who did have formal agreements, they were also asked the type of the agreement. Most of the respondents had agreements that were relatively non-binding on the health department. Only one was in the form of a contract, for example, while the remaining agreements were either a memorandum of understanding or a board of health resolution, which could more easily be withdrawn by the board.

Figure 9: Formal Agreement Types

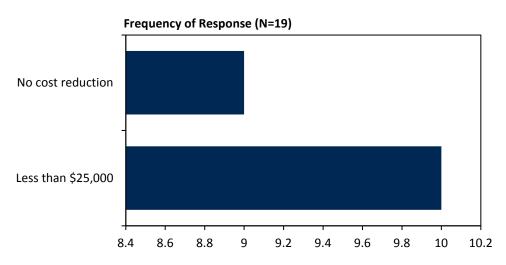


Source: Cross ROADS Survey Question 2-6



While many health departments were able to share services, few found large cost savings from these arrangements. As shown in Figure 10, the large majority of shared services provided cost savings less than \$25,000 per year on average, with several providing no cost savings at all. Respondents provided a number of reasons why sharing services provided little in the way of cost savings. One respondent said that the health department contracted out its services to another department, but those contracts generally only covered costs, and did not provide additional revenue. One department, which was receiving services, wrote that reimbursing the costs of the service did not materially reduce costs over contracting those services out to an independent agency. Another said that since most of the rural health departments have minimal staff, there was little opportunity for cost savings. The "majority of staff have multiple 'hats' and to completely combine a particular services there would still be a need for the other services to continue," one respondent said.

Figure 10: Reducing Costs



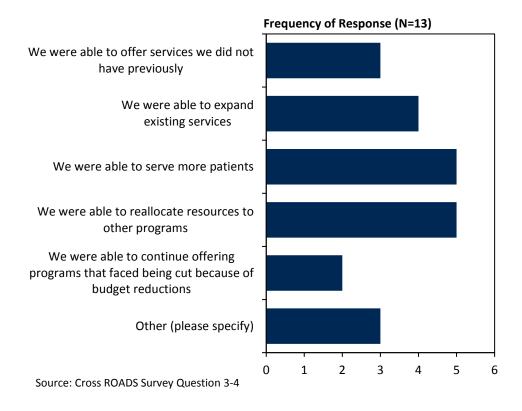
Source: Cross ROADS Survey Question 3-1



While survey respondents were skeptical that sharing services would significantly reduce costs, they were more favorable about the potential for improving health delivery to their service populations. When survey participants were asked whether shared service arrangements improved health delivery, 13 of the 19 respondents said that they had, compared with only three that said the arrangement had not improved delivery.

In Figure 11, we report on the types of improvements to care that respondents found when implementing shared services. Five of 13 respondents said that sharing services allowed their health departments to serve more clients than they could otherwise, while an equal number said that sharing allowed them to reallocate resources to other programs. Four health departments reporting being able to expand existing services, while three offered new services they had not offered previously.

Figure 11: Service Delivery Improvements





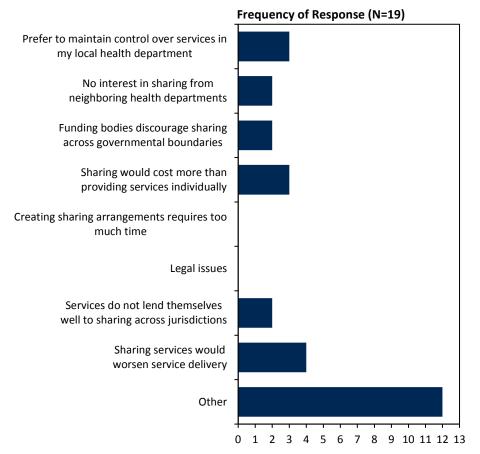
One important part of the survey was to ascertain barriers to greater service sharing among health departments in the state. For those health departments that were not sharing services, we asked why they were not sharing more. The answers are reported in Figure 12. Many of the responses did not fall into the categories presented in the survey, as the "Other" category was the most frequent response. Many of respondents said that they had not pursued service sharing because their health departments were functioning well and they did not feel they needed to seek service agreements elsewhere. "At this point in time we are in good shape with employees and services," one respondent said.

Some respondents cited increased costs as a reason they were not pursuing sharing agreements, while others were worried that sharing services would stretch them too thin and service delivery would suffer. One administrator said, "In our area, most of the Health Departments are already at the bare minimum for employees to keep up with the Services we provide," one administrator said. "I don't think you can look at the entire state and say this is great for all of us." Two other health departments said that they were considering combining their board of health, but needed technical expertise from the state Bureau for Public Health. Another said that sharing services cost more than providing services individually. "In discussions of sharing staff, we were quoted an hourly rate similar to what you would pay a contractor for services," one administrator said. "If sharing means contracting for services, at contractor rates, we will never be able to afford it."

Others said that they had limited staff who all played multiple roles within the department. They said it would be difficult to share these employees with other health departments without losing key program support. "We only have seven fill-time staff members. The administrator is also the threat coordinator and does a lot of sanitarian work. So in a sense we are sharing services within our Health Department. We don't have enough employees to share with other counties on a regular basis and still take care of our own county,"



Figure 12: Reasons for Not Sharing Services

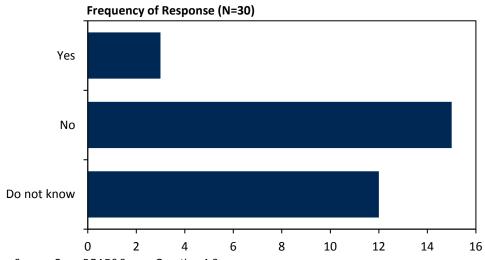


Source: Cross ROADS Long-Form Survey Question 5-1, Short-Form Survey Question 2-NO

Legal restrictions on service sharing were not a primary concern among survey respondents, as shown in Figure 13. Only three of the 30 respondents said that they were aware of statutes that would prohibit or impede service sharing at their health department, while the remainder said there were no impediments or they were unaware of any. However, some respondents said that the local county governments that funded the health department required them to provide services only within their county. In addition, many said that they wanted to maintain local control of health services. "The community does not like having government grow into something larger that is foreign to them and harder to deal with," said one administrator. "Growing into large regions could end the well-greased wheel most counties have developed over the years."



Figure 13: Legal impediments to Service Sharing



Source: Cross ROADS Survey Question 4-3



5 Conclusion

This report has assessed the current state of cross-jurisdictional sharing of health services in West Virginia. Our survey results have shown that while CJS agreements are common in the state, there is significant room for additional sharing among the state's health departments.

On the positive side, the survey indicated that West Virginia's health departments are aware of the potential for cross-jurisdictional sharing arrangements to improve health delivery in the state. Nearly three-quarters of all respondents to the survey said they were either considering or currently engaged in some form of service sharing, and service sharing exists or is planned in all major program areas. These results indicate that service sharing is recognized by the large majority of health departments as a potential solution to improve services in multiple program areas. Also, local health departments tended to pursue sharing agreements as a way of providing better services and meeting program requirements. We interpret these results to mean that health departments tend to see service sharing as a way to respond to a difficult budgetary environment while maintaining high service levels.

Health departments cited saving money and making better use of existing resources as the most common reasons for implementing shared service arrangements. However, our survey found that health departments are not finding significant cost savings from service sharing. Indeed, many health departments seem to view sharing as having the potential for taking resources away from their own health departments, rather than gaining from sharing with others. Some health department administrators said that their staff was already spread thinly and it would be difficult to share with neighboring departments. Also, some health department administrators said contracting for services from other health departments was too expensive. Lastly, most health departments do not have formal agreements for their service sharing, and those that do tend to have relatively non-binding agreements. This may indicate that sharing agreements are relatively transitory and may not continue if staff changes within the participating LHDs.

In the remainder of this section, we provide options for additional sharing in the state (subsection 5.1), as well as potential policy changes the state can make to improve the climate for service sharing statewide (subsection 5.2).

5.1 Sharing Opportunities

Though many of the state's local health departments are working on sharing agreements, there are a number of areas where sharing can be enhanced. In this section, we outline a few potential areas that could provide economies of scale for local health departments and improve service delivery.

MEDICAL BILLING: Medical billing services is an area with the potential for greater resource sharing between the state's larger health departments and smaller, more rural departments. Many smaller health departments in West Virginia do not currently bill insurance companies or patients for services. According to a NACCHO study (NACCHO 2015), health departments across the country are considering increased medical billing because of declining revenue in other areas. Some services, such as immunizations, STD treatment, and maternal health services, may be covered by insurance for some patients. If smaller health departments were able to bill for these services, it would provide an alternative source of revenue for these health departments. As these services would incur additional administrative costs, a health department examining this type of sharing would have perform a careful benefits-cost analysis to determine if it makes sense to pursue billing services. The NACCHO study also



identified a lack of expertise as a significant barrier for smaller health departments. Thus, the state Bureau for Public Health could also potentially provide training and coordination for sharing of medical billing arrangements as a way of supporting additional revenue generation.

EMERGENCY PREPAREDNESS: Emergency preparedness is inherently a regional concern, as disasters rarely are confined to a single county. The massive 2016 flood in West Virginia, for example, affected a wide area of the southern part of the state, and the governor eventually declared 44 counties to be part of the disaster area. The NACCHO (2014) study cited above found that emergency preparedness was the most commonly shared programmatic area nationwide, with 35 percent of departments sharing in this area. In our survey results, only 10 of the 42 respondents, less than 24 percent, said they were sharing emergency preparedness services. This area has the potential for additional sharing activities, though the state Bureau for Public Health may need to help LHDs coordinate regional responses in order to safeguard residents' health in the event of a natural disaster or other emergency.

EPIDEMIOLOGY: As with emergency preparedness, epidemiology also has a regional impact as communicable disease outbreaks rarely abide by county boundaries. Epidemiology is also an area where it can be difficult to find local expertise, especially if the county does not have a major medical center located there. In addition, disease outbreaks tend to be transitory, and thus many smaller health departments may find it is not cost-effective to have epidemiologic experts on staff on full-time. As a result, rural health departments may not have sufficient staff to address outbreaks. LHDs may be better off joining together to contract for these services.

ADMINISTRATIVE SUPPORT SERVICES: Administrative support is an area that could benefit from the economies of scale of CJS agreements. The survey results found that of the 42 LHDs that responded to the survey, five were sharing in the area of administrative, planning, and support services, constituting about 12 percent of respondents. The survey does not provide details on the types of services that are being shared. However, examples of roles that could be shared across jurisdictions include information technology support, accounting, and human resources. Laboratory services could be centralized to allow for the cost these specialized services to be spread across a greater population. Lastly, multiple health departments could join together to gain economies of scale in purchasing.

5.2 State Policy Options

CENTRALIZED MEDICAL BILLING: As mentioned above, medical billing has the potential to bring in additional revenue for LHDs the state. However, the costs may be prohibitive for smaller health departments that do not have large numbers of in-person patient services. It may be more cost-effective for the state Bureau for Public Health to provide more centralized medical billing services for the state's LHDs. The state could potentially contract with the larger health departments that already bill for medical services to provide these services for smaller departments that do not currently have medical billing.

REGIONAL HEALTH ADMINISTRATIVE ZONES: The state government could form what we have termed Regional Health Administrative Zones to perform common administrative functions—such as IT support, purchasing, etc.—for the state's local health departments. These zones could perform many of the same functions carried out by the state's Regional Educational Service Areas. While RESAs were eliminated in



the 2017 Legislative session, ² there are indications that they have saved local school districts money through larger-scale purchasing and centralization of technical support and networking. These offerings could be provided on an opt-in basis so those LHDs that already are satisfied with their administrative support could continue to provide them locally, while allowing smaller departments to gain economies of scale.

INCENTIVES FOR COST SHARING: The state Bureau for Public Health currently offers incentives for greater regionalization among the state's LHDs. However, incentives could be provided to encourage greater cost sharing across LHD jurisdictions. The BPH could make subsidies available for those health departments that demonstrate cost savings due to cross-jurisdictional sharing agreements. One way to structure these incentives would be for the BPH to return a portion of documented cost savings to the local health departments to use to expand their own health care services.

² The RESAs were eliminated by the WV Legislature in 2017 House Bill 2711 (effective in July 2018) as part of broader educational reform.



22

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Appendix A: Surveys

Short-Form Survey

INTRO Thank you for filling out this survey for the WV Bureau of Public Health Cross ROADS study. This study will help ascertain the level of cross-jurisdictional sharing currently taking place between health departments in the state.

Q1-1 Health department name:
Q1-2 Your name:
Q1-3 Your job title:
Q1-5 City:
Q1-6 Zip code:
Q1-7 Your email address:
Q1-9 What is the number of full-time equivalent employees at the health department?
Q2-1 Are you currently sharing any health services with another health department or other local agency?
O Yes (1)
O No (2) f No is selected for Q2-1:
Q2-2 You indicated that your health department is not currently sharing health services. Is your board of nealth in the process of exploring or implementing shared service arrangements?
O Yes (1)
O No (2)



If No is selected for Q2-1 and Q2-2:
Q2-NO You indicated that your health departmen

	-NO You indicated that your health department is not currently sharing services or exploring the use shared service arrangements. Why not? (Check all that apply.)
	Prefer to maintain control over services in my local health department (1) No interest in sharing from neighboring health departments (2) Funding bodies (e.g. county commission, city government, etc.) discourage sharing across governmental boundaries (3)
	, , ,
	Creating sharing arrangements requires too much time (5)
	Legal issues (please explain) (6)
	Services we offer do not lend themselves well to sharing across jurisdictions (please explain) (7)
	Sharing services would worsen service delivery (8)
	Other (please specify) (9)
	If Yes is selected for Q2-1 or Q2-2:
ser	 -3 You indicated that your health department is either currently sharing services or is exploring new rvice sharing agreements. What reasons motivated your board of health to explore or implement ared service arrangements? (Please check all that apply.)
	Make better use of resources (1)
	Save money (2)
	Respond to program requirements (3)
	Aid in recruitment of qualified staff (4)
	Provide new services (5)
	Provide better services (6)
	Meet or prepare for voluntary accreditation standards (7)
	Increase department's credibility in the community (8)
	Support or increase our department's independence (9)
	Do not know (12)
	Other (please specify) (10)



Q2-4 What are the areas for your current or planned cross-jurisdictional sharing efforts? (Please check all that apply.)

	Stage of	f Sharing
	Current (1)	Planned (2)
Emergency preparedness (general emergency preparedness, Medical Reserve Corps, Citizens Corps) (1)		
Epidemiology or surveillance (epidemiologic services/trend analysis, local disease investigation) (2)		
Communicable disease screening or treatment (immunizations, STD/HIV testing, TB screening) (4)		
Chronic disease screening or treatment (chronic disease reduction, corporate wellness programs, general health education, vision/hearing, breast/cervical cancer screening, blood pressure screening, lead screening, diabetes prevention, cardiovascular disease prevention) (3)		
Maternal and child health services (childhood immunizations, prenatal care, family planning, infant home visiting, WIC) (5)		
Environmental health programs including inspection, permit, or licensing (food service/restaurant inspections, smoke-free enforcement, lead assessment/abatement, radon, water, sewage, solid waste, vector control, parks and camping sites, recycling/litter prevention) (9)	٥	٥
Community health assessment (community health assessment, community health improvement) (11)		
Administrative, planning, and support services (legal, human resources, financial management, medical billing, purchasing, IT, communications/public information, marketing, laboratory, insurance, accreditation guidance, policy development, evaluation quality/improvement, subject matter experts) (12)	٥	٥
Other (please specify) (14)		

Q2-5 Do you have a formal agreement among policy-making bodies to explore/implement a cross-jurisdictional sharing arrangement?

O Yes (1)

O No (2)

If Yes is selected for Q2-5:

Q2-6 Please indicate the nature of the written document(s). (Check all that apply.)



	Contract (1)	
	Memorandum of understanding (2)	
	Joint powers agreement (3)	
	Mutual aid agreement (4)	
	Agreement to provide surge capacity (5)	
	Board resolution or meeting minutes (6)	
	Written agreement, but unsure how to classify (7)	
	Other (please specify) (8)	
	1 You indicated that you are currently sharing some services. Please estimate on average how much h shared service arrangement reduced your operational costs on a yearly basis.	
O	No cost reduction or costs increased (6)	
O	Less than \$25,000 (1)	
O	\$25,000-\$50,000 (2)	
O	\$50,000-\$75,000 (3)	
O	\$75,000-\$100,000 (4)	
O	More than \$100,000 (5)	
If o	ption (6) is selected for Q3-1:	
	-2 You indicated that your costs were not reduced by the shared service arrangement. Why? (Check that apply.)	
	This was a new service for my health department (1)	
	Resources were reallocated to another service (2)	
	Agreement allowed my health department to expand services in this program area (3)	
	Other (please specify) (4)	
Q3-	3 Did your shared service arrangement(s) improve service delivery for your health department's	
pat	ients?	
\circ	Yes (1)	
	No (2)	
	Do not know (4)	
	es is selected for Q3-3:	
	4 How did the arrangement(s) improve service delivery for your patients? (Check all that apply.)	
	We were able to offer services we did not have previously (1)	
	We were able to expand existing services (2)	
	We were able to expand existing services (2) We were able to serve more patients (3)	
	We were able to reallocate resources to other programs (4)	
	We were able to continue offering programs that faced being cut because of budget reductions (5)	
	Other (please specify) (6)	
	o or Do not know is selected for Q3-3:	
	-5 Why did the shared service arrangement(s) not improve service delivery for your patients? (Check	
all that apply.)		



	The arrangement allowed us only to continue offering an existing service (1)
	The shared arrangement offered a service that was scaled back from what we were previously
	offering (2)
	Other (please specify) (3)
	-1 Are you aware of any statutes, rules, laws, codes, ordinances, or regulations that AUTHORIZE or RMIT sharing of services, supplies, equipment, personnel or other resources?
O	Yes (1)
\mathbf{O}	No (2)
0	Do not know (3)
Q4	-2 Comment on previous question:
	-3 Are you aware of any statutes, rules, laws, codes, ordinances or regulations that PROHIBIT or PEDE sharing of services, supplies, equipment, personnel or other resources?
0	Yes (1)
0	No (2)
\mathbf{O}	Do not know (3)
Q4	-4 Comment on previous question:

Q4-5 Do you have any other comments regarding service sharing among health departments?



5.3 Long-Form Survey

Intro Thank you for filling out this survey for the WV Bureau of Public Health Cross ROADS study. This study will help ascertain the level of cross-jurisdictional sharing currently taking place between health departments in the state. At any time, you can exit the survey and the survey software will save your place so you can return at a later time.

Q1-1 H	Health department name:
Q1-2 Y	Your name:
Q1-3 Y	Your job title:
Q1-5 (City:
Q1-6 Z	Zip code:
Q1-7 Y	our email address:
Q1-9 \	What is the number of full-time equivalent employees at the health department?
Q2-1 A	Are you currently sharing any health services with another health department or other local y?
O No O Sh O Sh	c change because we were not and are not engaged in a service sharing arrangement (1) to change because we are sharing services to the same extent (2) that is a greater extent than before (3) that is a lesser extent than before (4) to comments on previous question:
	To what extent does your health department's board of health approve arrangements to share es with other local health departments?
O BoO Bo	pard of health never approves arrangements (1) pard of health approves some arrangements (2) pard of health approves all arrangements (3) po not know (4)



	-4 What role(s) do elected officials with appointing authority (such as County Commission) play in angements to share services with other local health departments? (Check all that apply.)
	Decision maker (1) Oversight (2) Adviser (3) Serves on board of health (4) No role (5) Do not know (6) Other (please specify) (7)
О О	Yes (1) No (2) Do not know (3) -5.1 Comments on previous question:
	-7 Has your board of health discussed in the past two years, or is it currently discussing, the potential CREATION of a shared services arrangement? (If yes, please explain in the comment section.)
О О	Yes (1) No (2) Do not know (3) -8 Comments on previous question:
If Y	es is selected for Q2-7:
dis	-9 You indicated that your health department's board of health has discussed or is currently cussing a potential shared service arrangement. What reasons were/are being given for considering arrangement? (Check all that apply.)
	Make better use of resources (1) Save money (2) Respond to program requirements (3) Aid in recruitment of qualified staff (4) Provide new services (5) Provide better services (6) Meet national voluntary accreditation standards (7) Increase our department's credibility within the community (8) Support our department's independence (9) Do not know (11) Other (please specify) (10)



	RMIT sharing of services, supplies, equipment, personnel or other resources?
O	Yes (1)
O	No (2)
	Do not know (3)
	es is selected for Q3-1:
of t	1.1 Please indicate the types of statutes, rules, laws, codes, ordinances or regulations you are aware that AUTHORIZE or PERMIT sharing of services, supplies, equipment, personnel or other resources. eck all that apply. If you have a specific example(s) to share, please do so in the comment section.)
	State level statutes or regulations (1)
	Local laws, ordinances or regulations (2)
	Other (3)
	Do not know (4)
	es is selected for Q3-11:
Q3-	1.2 Comment on previous question:
	-2 Are you aware of any statutes, rules, laws, codes, ordinances or regulations that PROHIBIT or PEDE sharing of services, supplies, equipment, personnel or other resources?
O	Yes (1)
O	No (2)
O	Do not know (3)
lf Y	es is selected for Q3-2:
of t	2.1 Please indicate the types of statutes, rules, laws, codes, ordinances or regulations you are aware that PROHIBIT or IMPEDE sharing of services, supplies, equipment, personnel or other resources. eck all that apply. If you have a specific example(s) to share, please do so under "Comments".)
	State level statutes or regulations (1) Local laws, ordinances or regulations (2) Other (3) Do not know (4)



If Yes is selected for Q3-2:

Q3-2.2 Comment on previous question: Q4-1 For which programmatic areas or organizational functions does your health department share resources? (Check all that apply.) ☐ Emergency preparedness (general emergency preparedness, Medical Reserve Corps, Citizens Corps) (1) ☐ Epidemiology or surveillance (epidemiologic services/trend analysis, local disease investigation) (2) ☐ Communicable disease screening or treatment (immunizations, STD/HIV testing, TB screening) (4) Chronic disease screening or treatment (chronic disease reduction, corporate wellness programs, general health education, vision/hearing, breast/cervical cancer screening, blood pressure screening, lead screening, diabetes prevention, cardiovascular disease prevention) (5) Maternal and child health services (childhood immunizations, prenatal care, family planning, infant home visiting, WIC) (6) ☐ Environmental health programs including inspection, permit, or licensing (food service/restaurant inspections, smoke-free enforcement, lead assessment/abatement, radon, water, sewage, solid waste, vector control, parks and camping sites, recycling/litter prevention) (9) Community health assessment (community health assessment, community health improvement) (10)Administrative, planning, and support services (legal, human resources, financial management, medical billing, purchasing, IT, communications/public information, marketing, laboratory, insurance, accreditation guidance, policy development, evaluation quality/improvement, subject matter experts) (11) Other (please specify) (13) ____ If program area is Emergency preparedness: Q4-1.1 What functions of emergency preparedness are shared? (Check all that apply.) ☐ General emergency preparedness and planning (1) ☐ Medical Reserve Corps (2) ☐ Citizens Corps (3) Other (please specify) (4) ____ If program area is Epidemiology or surveillance: Q4-1.2 What functions of epidemiology or surveillance are shared? (Check all that apply.) ☐ Epidemiologic services for outbreak and trend analysis (1) ☐ Local disease investigation (2)



Other (please specify) (4)

If p	rogram area is Chronic disease screening or treatment:			
Q4-1.4 What functions of communicable disease screening or treatment are shared? (Check all that apply.)				
	Immunizations (8)			
	STD testing and treatment (2)			
	HIV testing (3)			
	Tuberculosis screening and treatment (4)			
	Other (please specify) (7)			
If p	rogram area is Maternal and child health services:			
Q4	-1.5 What functions of chronic disease screening or treatment are shared? (Check all that apply.)			
	Chronic disease reduction (1)			
	Corporate wellness program (2)			
	General health education (3)			
	Vision/hearing (10)			
	Breast/cervical cancer screening (4)			
	Blood pressure screening (5)			
	Lead screening (6)			
	Diabetes prevention and treatment (7)			
	Cardiovascular disease prevention and treatment (8)			
	Other (please specify) (9)			
If p	rogram area is Population based primary prevention:			
Q4	Q4-1.6 What functions of maternal and child health services are shared? (Check all that apply.)			
	Childhood immunizations (1)			
	Prenatal care (2)			
	Family planning (3)			
	Infant home visiting (4)			
	WIC (5)			
	Other (please specify) (7)			



	-1.8 What functions of environmental health programs including inspection, permit and licensing are red? (Check all that apply.)
	Inspections of food services operations (1)
	Inspections of retail food establishments (2)
	Smoke-free enforcement (5)
	Lead assessment/abatement (4)
	Radon (3)
	Water (7)
	Sewage (8)
	Solid waste (9)
	Vector control (10)
	Parks and camping sites (11)
	Recycling/litter prevention (12)
	Other (please specify) (6)
If p	rogram area is Community health assessment:
Q4-	-1.10 What functions of community health assessment are shared? (Check all that apply.)
	Community health assessment services (1)
	Community health improvement planning (2)
	Other (please specify) (3)
If p	rogram area is Administrative, planning, and support services:
Q4-	-1.11 What functions of administrative, planning, and support services are shared? (Check all that
app	oly.)
	Legal services (1)
	Human resources (2)
	Financial and fiscal management (3)
	Medical billing (4)
	Purchasing (5)
	Information technology (6)
	Communications or public information (7)
	Marketing (8)
	Public relations/public information officer (9)
	Laboratory (10)
	Insurance (11)
	Accreditation guidance (12)
	Policy development (13)
	Evaluation quality/improvement (14)
	Subject matter experts (15)
	Other (please specify) (16)

If program area is Environmental health programs:



If program area is Other:

Q4-1.13 You indicated your health department has a sharing arrangement in an area other than those listed. Please briefly describe the program.

Q4	-2 through Q4-15 are displayed for each program area selected				
Q4	-2 In this service sharing arrangement: (Check all that apply.)				
□ □ Q4	My department has primary responsibility for this agreement (1) My department provides functions or services for another health department's jurisdiction (4) Another health department provides functions or services for our jurisdiction (5) Our health department shares a staff person with another health department (3) Our health department shares equipment with another health department (2) Other (please specify) (6)				
Q4	Q4-4 What were the motivations for creating this shared service arrangement? (Check all that apply.)				
Q4	To make better use of resources (1) To save money (2) To respond to program requirements (3) To respond to legal requirements (e.g. from state legislature or courts) (4) To aid in recruitment of qualified staff (5) To provide new services (6) To provide better services (7) To meet national voluntary accreditation standards (8) To increase our department's credibility within the community (10) To support our department's independence (11) Do not know (12) Other (please specify) (13)				
	-6 Did you track the impact the shared service agreement had on your agency operations, service ivery or program quality?				
O	Yes (1) No (2) Do not know (3)				



if yes is selected for Q4-6:	
Q4-6.1 In which areas did you track the impact? (Check all that apply.)	
 □ Cost (1) □ Service delivery (4) □ Quality (2) □ Staffing (3) □ Other (5) □ Q4-7 Did this shared service arrangement reduce your costs for this particular program area? 	
O Yes (1)	
O No (2)	
O Do not know (4)	
If Yes is selected for Q4-7:	
Q4-7.1 Please estimate how much the shared service arrangement reduced your operational costs on yearly basis.	a
O Less than \$25,000 (1)	
O \$25,000-\$50,000 (2)	
O \$50,000-\$75,000 (3)	
O \$75,000-\$100,000 (4)	
O More than \$100,000 (5)	
If No is selected for Q4-7:	
Q4-7.2 Why were your costs not reduced by the shared service arrangement? (Check all that apply.)	
☐ This was a new service for my health department (1)	
☐ Resources were reallocated to another service (2)	
☐ Agreement allowed my health department to expand services in this program area (3)	
☐ Other (please specify) (4)	
Q4-8 Did this shared service arrangement improve service delivery for your health department's patients?	
O Yes (1)	
O No (2)	
O Do not know (4)	
If Yes is selected for Q4-8:	
Q4-8.1 How did the arrangement improve service delivery for your patients? (Check all that apply.)	
☐ We were able to offer services we did not have previously (1)	
☐ We were able to expand existing services (2)	
☐ We were able to serve more patients (3)	
☐ We were able to reallocate resources to other programs (4)	
We were able to continue offering programs that faced being cut because of budget reductions (5)
Other (please specify) (6)	
36	



If No or Do not know is selected for Q4-8:

Q4-8.2 Why did the shared service arrangement not improve service delivery for your patients? (Check all that apply.) ☐ The arrangement allowed us only to continue offering an existing service (1) ☐ The shared arrangement offered a service that was scaled back from what we were previously offering (2) ☐ Other (please specify) (3) Q4-9 Who was involved in the development of this shared service arrangement? (Check all that apply.) ☐ Local health department administrator (1) ☐ Local health department health officer (11) ☐ Other local health department staff (2) ☐ Local board of health (10) ☐ City attorney (3) ☐ County attorney (4) ☐ Private attorney/counsel (5) ☐ Elected officials (county commission, city council) (6) ☐ County administrator (7) ☐ City administrator (8) ☐ Community partners (9) ☐ State health department (12) ■ Do not know (13) ☐ Other (please specify) (14) ___ Q4-10 Please indicate the year (approximate if you are not certain of exact year) that this shared service arrangement began. **O** Before 1995 (1) **O** 1995-2000 (2) **Q** 2001-2005 (3) **O** 2006-2010 (4) **O** After 2010 (5) O Do not know (6) Q4-11 Please indicate the date (approximate if you are not certain of exact date) that this shared service arrangement expires. **O** 2017 (1) **O** 2018 (2) **Q** 2019 (3) **2** 2020 or beyond (4) O No expiration date (5) O Do not know (6)



	-12 Does your department have any process in place for reviewing or evaluating this shared service angement?
	Yes (1)
	No (2)
	Do not know (4)
	es is selected for Q4-12:
Q4	-12.1 Briefly describe how you evaluate or review this shared service arrangement.
	-13 Do the participating health departments have a written agreement for this service sharing angement?
O	Yes (1)
0	No (2)
lf Y	es is selected for Q4-13:
Q4	-13.1 Please indicate the nature of the written document(s). (Check all that apply.)
	Contract (i.e. a binding agreement between two or more parties) (1)
	Memorandum of understanding or memorandum of agreement (2)
	Joint powers agreement (14)
	Mutual aid agreement (i.e. an agreement among emergency responders to lend assistance across
	jurisdictional boundaries) (4)
	Agreement to provide surge capacity different from mutual aid agreement (as in Domain 2 of PHAB
	standards) (7)
	Board resolution or minutes (11)
	Written agreement but unsure how to classify (9)
	Other (please specify) (6)
Q4	-14 Was the planning and development of this shared approach funded through a dedicated funding
str	eam?
0	Yes (1)
	No (2)
0	Do not know (4)



lf	Yes	is	sel	ect	ed	for	Q4	-14:

Q4-14.1 You indicated planning and development of this sharing agreement was funded. HOW was it funded?

If Yes is selected for Q4-14:

Q4	-14.2 What was the total amount of the initial funding?
lf Y	es is selected for Q4-14:
Q4	-14.3 How long was the initial funding available?
O O Q4	Less than 1 year (1) 1-3 years (2) More than 3 years (3) -15 What barriers have you found to increased sharing in this area in the future? (Check all that ply.)
	Prefer to maintain control over services in my local health department (7) No interest in sharing from neighboring health departments (2) Funding bodies (e.g. county commission, city government, etc.) discourage sharing across
	governmental boundaries (3) Sharing would cost more than providing service individually (4) Legal issues (please explain) (14) Services do not lend themselves well to sharing across jurisdictions (please explain) (1)
	Sharing services would worsen service delivery (please explain) (5) Other (please specify) (6)
lf p	program area is not Other:
	N-1 You indicated that your health department is not currently sharing in the area of [program area]. ny are you not sharing services in this area? (Check all that apply.)
	Prefer to maintain control over these services in my local health department (7) No interest in sharing from neighboring health departments (2) Funding bodies (e.g. county commission, city government, etc.) discourage sharing across governmental boundaries (3)
	Sharing would cost more than providing service individually (4) Legal issues (please explain) (14)
	Activity does not lend itself well to sharing across jurisdictions (please explain) (1)
	Sharing services would worsen service delivery (please explain) (5)
	Other (please specify) (6)



	-1 You indicated that your health department is not currently sharing any health services. Why not? eck all that apply.)
	Prefer to maintain control over services in my local health department (7)
	No interest in sharing from neighboring health departments (2)
	Funding bodies (e.g. county commission, city government, etc.) discourage sharing across governmental boundaries (3)
	Sharing would cost more than providing services individually (4)
	Legal issues (please explain) (14)
	Services do not lend themselves well to sharing across jurisdictions (please explain) (1)
	Sharing services would worsen service delivery (please explain) (5)
	Other (please specify) (6)
Q6	-1 Do you have any other comments regarding service sharing among health departments?



If No is selected for Q2-1:

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