Environmental Scan:
A Brief Overview of Findings from Scholarly and Professional Work on Shared Services Relevant to Local Public Health in Ohio and Beyond

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Introduction

While there has been substantial work done on shared services and the consolidation of local health departments (LHDs) in Ohio in recent years, there have not been major recent efforts to take stock of what has been learned through this work. In this overview report, we share findings from an "environmental scan" of work on shared services among LHDs in Ohio and elsewhere, and provide information on motivations, impacts, and recommendations relating to these kinds of efforts. In so doing, we hope to identify areas where additional assistance and training for LHDs may be helpful. The report is part of a larger effort by the Ohio State University's Center for Public Health Practice (OSU-CPHP), the Ohio Department of Health (ODH), and the Kent State University Center for Public Policy and Health (KSU-CPPH) to assist LHDs in moving forward with their local public health accreditation related efforts.

We begin by providing a brief overview of the scope and methods underlying this environmental scan. We then share a description of the results from the scan, which come in the form of responses to a series of questions about shared services and LHD consolidation in Ohio. We close with an identification of potential needs that could be addressed by additional resource development, training, and/or assistance efforts, and some preliminary ideas regarding tools and/or training that may help meet these needs.

The Scope of the Environmental Scan

We focused on the 116 LHDs providing public health services in the State of Ohio. The current makeup of LHDs in Ohio included 88 county health departments and 28 city health departments (ODH, 2017; Shaker Heights, 2018), and we collected and synthesized information about shared services and health department consolidation in these Ohio health departments. Another purpose of the scan, in addition to integrating existing information on shared services and LHD consolidation in Ohio, was to identify areas of potential need faced by local health officials relating to shared services so assistance, resources and training can be developed and/or targeted effectively. In conducting the scan, we focused first on publications with Ohio-specific content. However, we also reviewed and included relevant information from sources focusing on other areas of the United States. Additional details on the process used to conduct the environmental scan follows below.

Brief Overview of Methods

We took a number of steps to implement the environmental scan and obtain the results described below. First, we identified sources of information on shared services in Ohio, and collected multiple publications and work products. Examples of sources include research products developed by KSU-CPPH, documents compiled by the Center for Sharing Public Health Services, and reviews of scholarly and professional literature.

Second, we compiled these sources of information into a bibliography. We categorized the bibliographic document into two sections: publications that are Ohio-specific and those that have a national focus or otherwise do not specifically focus on Ohio. This bibliography is available through the KSU-CPPH and the OSU-CPHP.

Third, we reviewed and assessed quantitative data related to shared services from OSU-CPHP's 2016 Accreditation Readiness Survey. We also reviewed available quantitative shared services information from a presentation on results from the Goon and Lupi (2017)'s Twenty-first Century Project funded by the Robert Wood Johnson Foundation, the Health Policy Institute of Ohio (2012) Report on Public Health Futures, and a 2015 doctoral dissertation (Orcena, 2015).

Fourth, we reviewed existing publications relating to shared services and LHD consolidation for information relevant to key questions identified about the use of shared services delivery and organizational strategies in Ohio.

Fifth, we organized information gained from the above sources to answer or respond to the key questions identified. The results of the scan, in the form of responses to the questions identified, are documented and summarized below.

Finally, based on the scan results, we identified potential needs that local health officials may have relating to exploring and implementing shared services with neighboring health jurisdictions. We anticipate developing one or more assistance resources and/or trainings in the coming months.

Summarizing Findings from the Environmental Scan

To organize findings from the information we have collected and reviewed, we provide responses to the following questions about shared services and LHD consolidation in Ohio:

a. How many LHDs participate in shared services?
b. How many LHDs have consolidated in recent years?
c. What types of services are provided via these arrangements (e.g. environmental/nursing/emergency preparation, etc.)?
d. In how many shared services arrangements, on average, do Ohio LHDs participate?
e. What are the legal provisions that allow for shared services/consolidations in Ohio?
f. What information is available on the motivations, impacts and challenges associated with shared services and LHD consolidation implementation?
g. Were any useful case study/examples identified?

We summarize results of the scan below, by question, in the form of answers and/or responses to these questions.

<u>How many LHDs participate in Shared Services?</u>

There have been various surveys conducted of LHDs in Ohio that included questions relating to shared services. These include the Public Health Futures effort undertaken by the Health Policy Institute of Ohio (HPIO) in 2012, the 2016 OSU-CPHP Accreditation Readiness survey, and a more recent survey conducted through the Twenty-first century project conducted by the Ohio Public Health Partnership (OPHP) (Goon and Lupi, 2017). The discussion here is largely limited to the results of the first two surveys because, at the time of this writing, final data compilation and reporting on the Twenty-first Century survey project were still underway.

In the OSU accreditation Survey (2016), participating LHDs were asked if they were involved in shared service arrangements for a series of public health services. Using the responses to this series of questions, we created an aggregate figure to represent the number and percentage of health departments involved in various types of shared service arrangements. We coded LHDs as being involved in sharing services if they indicated that they provide any of services through a shared service arrangement with another LHD or if a service (included in the list of services provided) in their jurisdiction was provided by another local entity. We present the compilation of these results in Table 1. About 65% of responding LHDs reported involvement in some form of shared services, with 100% of city health departments being involved in service sharing.

Table 1: Ohio Local Health Department Involvement in Sharing Services

Shared Services	Number of County Health Departments	Number of City Health Departments	Total Number of Health Departments
Departments Involved	46 (54%)	25 (100%)	71 (64.5%)
Departments Not Involved	39 (46%)	0	39 (35.5%)
Total	85 (100%)	25 (100%)	110 (100%)

Source: OSU Accreditation Readiness Survey (2016)

These results appear to be somewhat similar to previous survey results provided in the Health Policy Institute of Ohio (HPIO) report (2012), even though the question wordings are rather different. In that report, 66% (59 out of 90) reporting LHDs indicated that they were involved in shared services or pooling resources and 60% (54 out of 90) LHDs that participated in the survey indicated that they were involved in shared program services with agencies other than LHDs. In terms of providing services across jurisdictional lines, 54% of (49 of 90) LHDs indicated that they provide cross-jurisdictional services on behalf another LHD or LHDs (HPIO, 2012). All of these numbers hover between one-half and two-thirds of responding LHDs, and this suggests that many LHDs in Ohio are involved in sharing public health services, even if the varying wordings used in the surveys make clear interpretations of the numbers difficult to outline.

In this context, it is also worth noting that one recently published study sought to estimate the extent to which LHDs across the country are participating in shared services (Shah et al, 2016). Drawing on 2013 data from the National Association of County and City Health Officials National Profile survey, Shah and colleagues found that "more than 54% of LHDs shared resources such as funding, staff, or equipment with 1 or more LHDs on a continuous, recurring basis" (Shah et al, 2016, p. 110). This result suggests that Ohio LHDs are not alone in sharing resources and services with other jurisdictions, as it documents substantial service sharing among a nationwide sample of LHDs.

How many LHDs have consolidated in recent years?

The total number of LHDs in Ohio is 116, down from 123 in 2012 and 180 in 1919 (Morris et al, 2013; ODH, 2017; Shaker Heights, 2018). These decreases in the total number of departments operating in the state are largely a result of LHD consolidations. To date, the consolidations that have occurred include both contractual consolidations, where the underlying health districts remain in place, and full health district mergers where a new health district is formed that encapsulates both of the consolidating districts (Morris et al, 2013).

Morris et al. (2013) documented 20 consolidations in the state from 2001 to 2013 to bring the total to 123 departments in the state at that time. Additional consolidations have further reduced the number to 116 Recent consolidations in Ohio include:

- City of Ravenna with Portage County implemented a contractual consolidation (2013), followed by a district merger (2015);
- The Findley City Health Department and the Hancock County Health District merged in 2015;
- Cities of Lorain, and Avon Lake merged with Lorain County in 2016, and City of Elyria joined the merger in January of 2017, and;
- City of Steubenville Health Department consolidated with the Jefferson County Health District in 2017.
- City of Shaker Heights closed its health department and joined the Cuyahoga County Board of Health (Shaker Heights, 2018).

KSU CPPH staff provided assistance to the consolidations in Portage, Lorain, and Jefferson Counties, and feasibility studies addressing the Portage County and Jefferson County LHD consolidations are included in the recently compiled Bibliography mentioned above.

What types of services are provided via these arrangements?

The results of the OSU Accreditation survey (2016) suggest that at least 20 public health services are provided through shared services of some kind by the responding LHDs. These public health services are provided in Table 2. The figures in the table represent the extent to which services are shared by LHDs in the jurisdictions where the services are provided.

Table 2: Ohio Local Health Department Extent of Service Sharing

Public health service provided	LHDs sharing the service (No. of LHDs/No. of responding LHDs)	% of LHDs sharing the service
WIC	41/100	41%
Epidemiological Capacity	23/82	28.04%
Travel Immunization	20/77	25.97%
Tobacco smoking enforcement	17/93	18.27%
Child Fatality Review	15/110	13.63%
Sewage treatment program	10/107	9.34%
Vital Statistics	8/110	7.27%
Public Health Preparedness	7/109	6.42%
Resident Day camps	4/82	4.87%
Campgrounds Combined Parks	5/104	4.8%
Adult immunization	5/108	4.629%
Infectious disease surveillance	5/110	4.54%
Private water systems	4/105	3.8%
Pediatric immunization	4/109	3.6%
Flu Immunization	3/109	2.75%
Food safety program	3/110	2.7%
School Inspections	2/108	1.85%
Swimming pools	2/110	1.8%
Body art	1/109	0.91%
Animal bites/Rabies control	1/110	0.9%

Source: OSU Accreditation survey (2016)

Among these 20 services, WIC (41%) was the most common service to be provided through a shared service arrangement. This was followed by the Epidemiological Capacity (28.04%), Travel Immunization (25.97%), Tobacco smoking enforcement (18.27%), and Child Fatality Review (13.63%). After them, Sewage treatment program (9.34%), Vital Statistics (7.27%) and the Public Health Preparedness (6.42%) were also provided by significant number of LHDs in a shared form.

Among the services which were reported to be provided through a shared service arrangement by the least number of the LHDs were: Animal bites/rabies control and body art (inspections), which were provided in a shared form by 0.9% of reporting LHDs. Swimming Pool and School Inspections were each provided by 1.8% of responding LHDs in a shared fashion, and Food Safety Program was provided by 2.7% of responding LHDs in shared form.

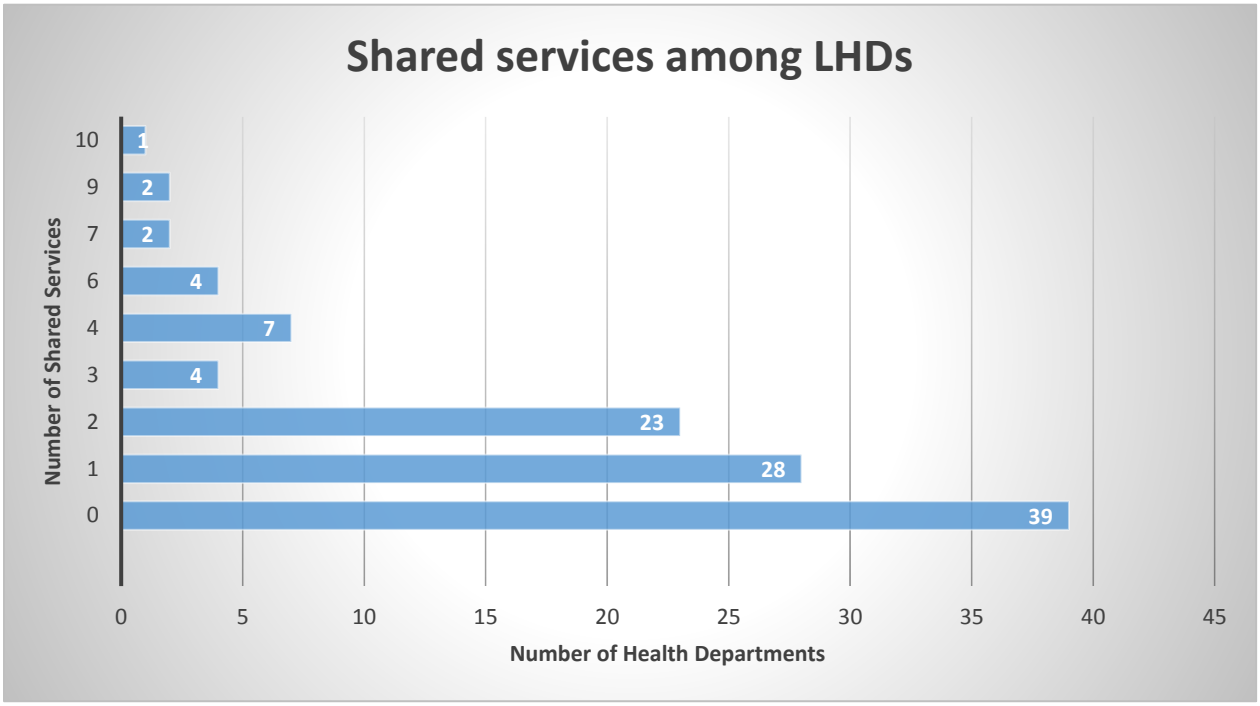
The Twenty-first Century survey focused on "Foundational Capabilities" of LHDs (Twenty-First Century Presentation, 2017). The survey data are reported to reveal that the Foundational Capability of "All Hazards Preparedness/Response" had the highest level of current sharing, while "Organizational Competencies (i.e. legal services, human resources) had the lowest (Goon & Lupi, 2017). A 2014 survey reported by Dr. J. Orcena re-enforces this finding, as it found that emergency preparedness and epidemiological services were frequently shared in Ohio (Orcena, 2015).

Overall, these survey results suggest that LHDs in Ohio share services across a wide range of services, and may therefore be able to learn productively from one another's experiences. The results also suggest that there may be much to learn about the particular arrangements in place and the results flowing from them.

<u>In how many shared services arrangements, on average, do LHDs in Ohio participate?</u>

As is mentioned above, about 65% (71/110) of the LHDs responding to the OSU-CPHP Accreditation Survey indicated that they are involved in shared services of some kind. The average number of shared services among those LHDs which are involved in cross-jurisdictional sharing partnerships was about two services. Among survey respondents, the highest number of shared services was 10 services for an individual department, and many responding LHDs (39) reported not sharing services in any of the program areas listed in the survey questionnaire. Figure 1 displays a frequency distribution of the number of shared service areas reported by LHDs in the OSU accreditation survey.

Figure 1: The frequency of shared services per health department



What are the legal provisions that allow for shared services/consolidations in Ohio?

There are provisions in Ohio state law that allow local government entities to share resources and contract with one another for services. There are also provisions in the Ohio Revised Code (ORC) authorizing LHDs to contract and consolidate with other city and county health departments. These provisions are outlined below.

Contracting among Political Subdivisions: When legally authorized to do so by its local governing authorities, a political subdivision may enter into an agreement with another political subdivision or a state agency whereby the contracting political subdivision or state agency agrees to exercise any power, perform any function, or render any service for the contracting recipient political subdivision that the contracting recipient political subdivision is otherwise legally authorized to exercise, perform, or render (ORC 9.482). This ORC provision was created through the passage of Ohio's biennial operating budget for 2012-2013 (HB 153) (Ross and Keen, 2012).

Ohio law offers other authorities to LHDs to collaborate with neighboring departments. Local departments have the authority, as political subdivisions, to participate in joint purchasing efforts with other local subdivisions (ORC 9.48). In addition, political subdivisions in Ohio can enter into Regional Councils of Government to implement a broad array of collaborative endeavors (ORC Chapter 167).

Health Department Consolidations: The ORC provides five ways in which a merger of health departments may occur in Ohio. The five options are presented below, and it is important to note

that all of these provisions have been updated in recent years in order to promote LHD consolidation and contracting (Bland et al, 2016):

- Union of City with General Health Districts (ORC 3709.07)
- Election for Union into Single General Health District (ORC 3709.071)
- Union of general health districts (ORC 3709.10)
- Contract between Boards of Health (ORC 3709.08)
- Formation of single city health district from two or more districts (ORC 3709.051)

It is worth noting that authorizations for LHD consolidations have expanded in recent years, as the State of Ohio now explicitly authorized consolidations between county LHDs (ORC 3709.10) and city LHDs that are non-contiguous with one another (3709.051).

Overall, it seems clear from the various provisions described above that LHDs in Ohio enjoy wide latitude to share services and consolidate, and can do so based on a range of provisions and authorities provided to them in state law.

<u>What information is available on the impacts and challenges associated with shared services and LHD consolidation implementation?</u>

Motivations, Impacts and Challenges Associated with Shared Public Health Services

As is evident from the discussion above, many LHDs in Ohio deliver public health services based on various kinds of shared services arrangements. However, there appears to be rather limited systematic research into the motivations, impacts, and challenges associated with these arrangements in Ohio. Even so, there is relevant anecdotal and other information available about motivations, impacts, and challenges associated with shared public health services from Ohio and elsewhere.

As Dr. Justeen Hyde reported in a presentation delivered at a conference convened by the Center for Sharing Public Health Services in 2013, there are a range of motivations for sharing public health services (Hyde, 2013). These motivations include increasing the quality and breadth of services, managing costs, increasing efficiency, enhancing equity across jurisdictions, and responding to mandates from higher levels of government (Hyde, 2013). Broadly speaking, enhancing services and seeking to manage costs more efficiently seem to be central motivations that are asserted by previous work relating to shared services in general (Pezzino et al, 2015; Slenkovich et al, 2013; Hoornbeek, et al, 2009). Unfortunately, though, with the exception of recent work on the impacts of LHD consolidation in Ohio (Hoornbeek, et al, 2015), our scan of available information did not find studies which documented these kinds of shared services benefits across multiple LHDs in Ohio.

We did however, locate case studies reporting beneficial service and economic impacts of shared services, as well as more systematic evidence of economic and service impacts elsewhere in the country. In Ohio, the Center for Sharing Public Health Services (CSPHS) reported on shared services in Portage County, Ohio, and reported evidence of expanded service provision within the county through shared services of various kinds (CSPHS, 2017). They also reported on beneficial impacts of sharing staff in a series of case studies addressing shared staffing arrangements in several states (CSLGE and CSPHS, 2017). Pezzino and colleagues reported efficiency and effectiveness benefits associated with shared service arrangements in Colorado, Wisconsin, and New York (Pezzino, et al, 2015). In addition, Hyde and Humphries (2017) reported in a Practice Based Research Network (PBRN) presentation that LHDs sharing services in Massachusetts and Connecticut have fewer staff per one thousand persons served and report offering more community health services. All of these studies re-enforce the idea that sharing public health services can yield gains in efficiency and service provision.

However, Hyde and her colleagues also note challenges associated with the delivery of shared services. For example, Hyde and Humphries (2017) suggest that sharing services in Connecticut and Massachusetts may require greater investment and time in governance and decision-making processes, than does the provision of services by individual health departments. Hyde (2013) has also pointed to the importance of building relationships and trust as a key challenge for enabling successful shared services arrangements. And, building on the foundation of these relationships, she also suggests that it is important to communicate clearly about goals, as well as to recognize the importance of understanding and implementing "change management" strategies that allow shared services relationships to develop and mature in ways that are productive for the parties involved (Hyde, 2013). In short, while shared services appear as though they may yield a range of benefits, they also appear to bring challenges that require work and effort to manage and overcome before any benefits associated with them materialize.

Overall, while there appears to be a developing evidence base documenting widespread use of shared services in Ohio (HPIO, 2012; OSU, 2016), and in the nation as a whole (Shah et al, 2016), there is still a need for more systematic study of the motivations, impacts, and challenges associated with sharing services among LHDs in Ohio. At the same time, however, the anecdotal evidence that does exist appears consistent with the idea that shared services arrangements can yield economic and public health service benefits, even as they also carry challenges that require work and effort to address.

Motivations, Impacts, and Challenges Associated with Consolidating LHDs

It has become relatively common for city and county LHDs in Ohio to enter into consolidation discussions. Indeed, more than 20 City-County LHD consolidations have occurred in Ohio since the turn of the 21st century, and discussions regarding LHD consolidations are continuing in the state as jurisdictions seek to build capacities necessary to achieve accreditation, as is now (effectively) required for LHDs in Ohio. Partially as a result of this kind of activity, there is some baseline literature – both peer-reviewed and professional – on the motivations, impacts and challenges associated with LHD consolidation in Ohio.

Based on interviews with 17 Health Commissioners and Administrators associated with LHDs that had consolidated in Ohio, Morris and colleagues found that discussions regarding consolidations in Ohio were motivated at least in part by cost savings and the prospect of service improvements (Morris et al, 2013; Hoornbeek, et al, 2015). Findings relating to the impact of fiscal stress on LHD decisions to consolidate were further supported quantitatively in a recent article presenting logistic regression analysis results seeking to predict the decision to consolidate among city and county LHDs in the state (Morris et al, 2017). This analysis found that fiscal stress associated with cities in the state and a "Strong Mayor" form of city government (in which Mayors are held accountable for the city's fiscal conditions) were strong predictors of the decision to consolidate LHDs during the first decade of the twenty-first century (Morris et al, 2017). Overall, these results suggest that concerns about the costs of local public health services motivate consolidation decisions, and that these concerns may also be supported by LHD interests in improving public health services.

These motivations for LHD mergers in Ohio appear to be at least somewhat consistent with the results of recent studies of the impacts of health department mergers in the state. Using Annual Financial Report (AFR) data submitted to the Ohio Department Health (ODH) and the results of interviews with senior Local Health Officials (LHOs) in the state, Hoornbeek et al (2015) reported that recently consolidating LHDs spent approximately 16% less on public health services than comparable LHDs that had not consolidated. Reduced costs were also reported by senior LHOs from consolidating LHDs, as more than 90% (13/14) of reporting senior LHOs reported that cost savings were achieved after consolidation (Hoornbeek et al, 2015). In some cases, reported cost savings were large. This was the case in the merger of three Summit County health departments, which is reported to have saved $1.5 million during the first year after consolidation (Hoornbeek et al, 2012). These Ohio-specific findings appear consistent with studies in Connecticut, which found that LHDs may respond to fiscal stress by choosing to enter multi-jurisdictional health departments (Prust et al, 2015).

There is also reason to believe that LHD consolidation in Ohio holds the potential to enable improvements in public health services, although the evidence supporting this contention is probably best described as preliminary. Of 16 senior LHOs involved in recent consolidations in Ohio, 12 (75%) reported service improvements within one year after consolidation (Hoornbeek et al, 2015; Morris e al, 2013). However, these same interviews revealed that consolidations can yield service reductions in particular areas, as well as improvements. Even so, most of those interviewed perceived that LHD consolidation had net positive effects on services within their jurisdictions. This finding is generally consistent with the results of a previous multi-state study reporting that larger LHDs tend to be more equipped and able to perform essential services compared to their smaller counterparts (Mays et al, 2006). This same study also suggested that the greatest potential for service improvements stemming from consolidations may be for smaller health departments which do not benefit from scale efficiencies (Mays et al, 2006).

Consolidating LHDs can also be challenging, as it can yield uncertainties for employees and disruptions to day-to-day operations. Hoornbeek and colleagues (2012) assessed the 2011 consolidation of LHDs in Summit County, Ohio, one year after the consolidation took effect. Based on interviews with key officials and stakeholders and a survey of employees in the recently consolidated health department, they found that consolidation posed major operational and strategic challenges. Strategically, consolidation requires organizations to re-think current policy and implementation strategies, build confidence with stakeholders accustomed to previous arrangements, and devise systems for monitoring and managing the changes they are experiencing. Operationally, the newly consolidated health department was required to restructure personnel roles and responsibilities throughout the organization, convert their technological systems (computers, phones, etc.), manage changes and expansions of facilities, manage the integration of differing LHD cultures, and foster strong communications during a disruptive period of time. It is important to note in this context that the Summit County consolidation was probably the largest consolidation of LHDs in Ohio in recent years, so the challenges identified above may be larger in this case than in others. However, even smaller consolidations are likely to be challenging in at least some of these respects, and challenges to small and large LHD consolidations alike are substantiated to at least some degree by findings that external (non-local) revenues tended to drop in consolidated health departments during the two years immediately following consolidation (Morris et al, 2015). It is important to note, however, that this kind of "disruption" effect appeared to disappear after several years, post consolidation (Morris et al, 2015).

Were any useful case studies or examples identified?

The scan of scholarly and professional literature yielded a number of potentially useful case studies. A list of these case studies is provided below. They can also be found in the bibliography developed as a part of this environmental scan, along with other potentially useful documents:

1. Hoornbeek, J., Filla, J., Kamble, N. (2014). Evaluation Report-Robert Wood Johnson Foundation Sharing Public Health Services Project - Building Public Health Capacities through Collaboration: Accelerating Progress in Northeast Ohio (Assessment of Kent City and Portage County Health Department's Collaborations). Retrieved September 17, 2017, from https://du1ux2871uqvu.cloudfront.net/sites/default/files/file/Robert%20Wood%20Johnson%20Foundation%20Sharing%20Public%20Health%20Services%20Project%20Building%20Public%20Health%20Capacities%20through%20Collaboration.pdf - Portage County's Robert Wood Johnson Foundation Sharing Public Health Services Project was organized around a series of three workgroups: The Strategy and Action (SAP) Workgroup, Evaluation Workgroup, and Education Workgroup. This report describes the Evaluation workgroup's methods for evaluating the collaborative public health services being provided in Portage County. The mission of the workgroup was

to inventory existing collaborations among the Portage County Health Departments (Portage County, Kent, and Ravenna), assess their current implementation, and devise means by which collaborative efforts among departments in the County may be improved.

2. Slenkovich. K. & O. Hartman. (2013). Resource Sharing among Ohio's Local Health Departments. Center for Community Solutions Retrieved September 6, 2017, from http://www.communitysolutions.com/assets/docs/Major_Reports/State_Budget_and_tax/publichealthfinal4.12.13.pdf - This report explores resource sharing among local health departments in Ohio as a means to improve the public health system in Ohio and facilitate the provision of a minimum package of local public health services most efficiently.

3. Towne, K. M. (2017). Nurse Partnerships across the Public Health System. *Nursing Management*, 48(1), 15-17. doi: 10.1097/01.NUMA.0000511186.41289.5a. - This article describes how public health nurses maintain a unique combination of skills from the fields of nursing and public health, are ideal candidates to lead the healthcare system into sustainable collaboration among health care organizations, and bridge the gap between the provision of individualized clinical services and the infrastructure of a healthy community. This document was developed in Ohio.

4. Beechey, T., Flemming, M., Sell, H., & Hoornbeek, J. (2012). Stormwater Management: Improving Effectiveness and Efficiency through Collaborative GIS Services. Retrieved September 8, 2017, from,https://du1ux2871uqvu.cloudfront.net/sites/default/files/file/Sustain%20a%20Greener%20Ohio_Stormwater%20Management_Improving%20Effectiveness%20and%20Efficiency%20through%20Collaborative%20GIS%20Services.pdf - This case study describes Stark County's "Sustain a Greener Ohio" collaborative project, including insights from the leaders of this collaboration. The authors hope that by sharing experiences and lessons learned through this collaboration, they can help others start successful storm water collaborations by sharing services like equipment, personnel and Geographic Information Services.

5. Center for Sharing Public Health Services. (2017). CJS (Cross Jurisdictional Sharing) Case Report on Ohio's Portage County. Retrieved September 8, 2017, from http://phsharing.org/wp-content/uploads/2017/04/OhioCaseReportApril2017.pdf - This case study describes the activities of a local task force charged with improving the public health in Portage County. It briefly describes the task force's efforts to explore a potential merger of the Ravenna Health Department and the Portage County Health District and broader discussions around shared services among the three LHDs

operating in Portage County at the time, and discusses accomplishments and challenges associated with this process.

6. Budnik, A., Slenkovich, K., & Boulter, J. (2012). Improving Public Health in Portage County. Retrieved September 21, 2017, from https://du1ux2871uqvu.cloudfront.net/sites/default/files/file/Executive%20Summary%20Improving%20Public%20Health%20in%20Portage%20County.pdf - This report lays the groundwork for the three health departments in Portage County (at the time of publication) to develop a detailed action plan regarding strengthening the public health system in the county.

7. Beechey, T., & Hoornbeek, J. (2011). Efficiencies in Cost Savings for Public Health. Retrieved January 24, 2018, from https://du1ux2871uqvu.cloudfront.net/sites/default/files/file/cost-savings-for-public-health.pdf - This case study describes a collaboration between the Summit County and City of Akron health departments to share data regarding the demographics, disease trends and rates of transmission in order to achieve cost savings. It is based on discussions and information collected prior to the merger of LHDs in Summit County, which took place in 2011.

8. Hoornbeek, J., Budnik, A., Beechey, T., & Filla, J. (2012). Consolidating Health Departments in Summit County, Ohio: A One-Year Retrospective. Retrieved January 24, 2018, from https://du1ux2871uqvu.cloudfront.net/sites/default/files/file/final-scph-report.pdf - This report describes challenges, outcomes and successes of the merger of three health departments in Summit County, Ohio -- Summit County Health District (SCHD), the Akron Health Department (AHD), and the Barberton Health Department (BHD) -- after one year of operation.

9. Shaw, B., Booth, M., & Joly, B. (2015). Cross-Jurisdictional Sharing Project: Key Informant Interview Results. Retrieved August 31, 2017, from http://phsharing.org/wp-content/uploads/2015/04/ME-CJS_Key_Inform_Interviews.pdf - This document provides information about the City of Portland's Public Health Division (PPH) receiving a two-year grant from the Robert Wood Johnson Foundation (RJWF) and its efforts to strengthen public health service delivery in Cumberland County.

10. South Central Kansas Coalition for Public Health. (2015). Case Study: Public Health Shared Services. Retrieved August 30, 2017, from http://www.khi.org/assets/uploads/news/13840/sckphs_casestudy.pdf - This case study features seven counties (Barber, Comanche, Edwards, Harper, Kingman, Kiowa and Prat) in south-central Kansas involved in CJS to provide essential public health services to their residents. It addresses the challenges, keys to success and benefits of these CJS efforts.

11. McDonald Consulting. (2014). Case Study: Robert Wood Johnson Foundation, Cross-Jurisdictional Services Project, Southwest Washington: 2014-2015. Retrieved September 6, 2017, from http://phsharing.org/wpcontent/uploads/2015/01/CaseStudy_SW_Washington.pdf - This case study examines the RWJF Cross-Jurisdictional Services Project of Southwest Washington to explore the idea of implementing a collaborative governance structure to support a shared approach to delivering efficient public health services in ways that respect the unique political, organizational and financial realities of four Southwest Washington counties and one tribal nation.

12. Velonis, A.J. (2012). The West Central Public Health Partnership. A Case Study in Public Health Collaboration. Retrieved August 30, 2017, from http://www.coloradotrust.org/sites/default/files/PFH_CaseStudy_090612-FINAL.rev_.pdf - This report describes how forming and maintaining a regional collaboration between multiple public health departments can be complex. Each partnering organization comes to the table with its own set of county and public health administrators and priorities, populations, political climates, economic resources and health issues. The evaluation revealed several themes relevant to the challenges and strengths involved with cross-governmental collaboration.

13. Beshear, A., Collins, S., Crider, S., Giannini, R., Harrison, C., Newcom, P., Travis, D. (n.d.). Case Study: Pennyrile District Health Department Crittenden County, Kentucky. Retrieved September 6, 2017, from http://phsharing.org/wp-content/uploads/2014/12/Case-StudyCrittendenCountyKentucky.pdf - This case study examines a 30-year-old shared service arrangement in rural Kentucky, addressing the reasons for the agreement, the history of its formation, and the keys to its success.

Identification of Potential Needs Among Local Health Officials in Ohio

Based on this environmental scan relating to LHD collaboration and consolidation, we can make a number of observations on shared services related needs among Ohio LHD officials:

- Sharing services appear commonplace among LHDs in Ohio based on AOHC's Health Policy Institute of Ohio (2012) report, the OSU Accreditation Readiness Assessment, and Twenty-first Century Presentation offered by Goon, A., & Lupi, N. (2017).
- Consolidations continue to occur among Ohio's LHDs, as we have seen the total number of LHDs in the state continue to drop.
- There is currently no website or center that focuses primarily on providing up-to-date information on shared services and consolidations involving LHDs in Ohio.
    - However, there are outlets for LHD officials to gain information about shared services and consolidation more broadly. These include the KSU-CPPH

(https://www.kent.edu/cpph), the OSU-CPHP (https://u.osu.edu/cphp/), and the Center for Sharing Public Health Services (http://phsharing.org/). In addition, there are a good number of journal articles, presentations, and professional publications that provide insight and information on shared services and consolidation.

- Despite the available information, the environmental scan did not yield usable templates to guide decision-making processes and/or the development of shared services and consolidation agreements.
- The results of the scan showed that some service types are provided through shared services arrangements more often than others, and that at least some LHDs offer a broad range of public health services through shared means.
- No full inventory or summary of public health service arrangements involving shared services was identified.
- While there is some available information on the motivations, impacts, and challenges associated with LHD consolidation, information on the motivations, impacts, and challenges associated with other forms of shared services in Ohio appears rather limited.

Given these observations, a few needs that could be addressed through the production of a resources or tools, and potentially training, for LHD officials can be inferred:

- Given that there are a good number of professional and scholarly publications and presentations available, there may be value in a publications list, or bibliography, to organize materials that have been developed and are potentially relevant to Ohio LHDs.
- LHD officials may benefit from access to template agreements for various forms of shared services (simple contract for services, consolidation agreements, Council of Government Arrangements, etc.)
- LHD officials may benefit from access to a tool that allows them to evaluate their current service arrangements and identify potential service areas where collaboration may be worth exploring.
- There may be value in further investigating selected shared service arrangements now in place, and developing and sharing information on their content, impacts and challenges associated with implementing them.
    - There would be need to identify specific arrangements to investigate, and then develop means by which they could be addressed through tool development and/or training.

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