2019

Service Delivery Demonstration Projects Year 1 Evaluation

Case Studies and Lessons Learned | January 2019

BERK Consulting for the Washington State Association of Local Public Health Officials (WSALPHO) and the Washington State Department of Health (DOH)

Contents

Introduction and Background

The governmental public health system in Washington State, comprised of 35 local health jurisdictions (LHJs), the State Department of Health (DOH), the State Board of Health (SBOH), and sovereign tribal nations, is fundamentally responsible for protecting the public's health. This system is increasingly challenged by growth in demand for public health services, changes in the nature of preventable disease, and diminished and inequitable funding for its core mission and services.

Over the last several years, in response to these challenges, Washington's governmental public health system developed a vision to rebuild, modernize, and fund a 21st Century public health system. The document *A Plan to Rebuild and Modernize Washington's Public Health System* (2016) describes this vision and the process of developing it. The vision uses a framework of foundational public health services (FPHS), or the core set of services that every person in Washington State should have the same access to, no matter where they live. They are services that "need to exist everywhere to work anywhere" and include **programs** such as communicable disease prevention and control, and **capabilities**, like communications, that undergird the operations and ability to run programs in any agency. See Exhibit 1 for a summary of FPHS.

Exhibit 1 A Summary of Washington's Foundational Public Health Services

"Foundational public health services" means a limited statewide set of defined public health services within the following areas:

(i) Control of communicable diseases and other notifiable conditions;

(ii) Chronic disease and injury prevention;

(iii) Environmental public health;

(iv) Maternal, child, and family health;

(v) Access to and linkage with medical, oral, and behavioral health services;

(vi) Vital records; and

(vii) Cross-cutting capabilities, including:

(A) Assessing the health of populations;

(B) Public health emergency planning;

(C) Communications;

(D) Policy development and support;

(E) Community partnership development; and

(F) Business competencies.

Source: *Concerning foundational public health services*, BILL REQ. #: Z-0126.2/19 2nd draft, State of Washington. Available at: https://www.doh.wa.gov/Portals/1/Documents/9220/FPHS.pdf

The 2016 *Plan* articulated the governmental public health vision with five principles for achieving it:

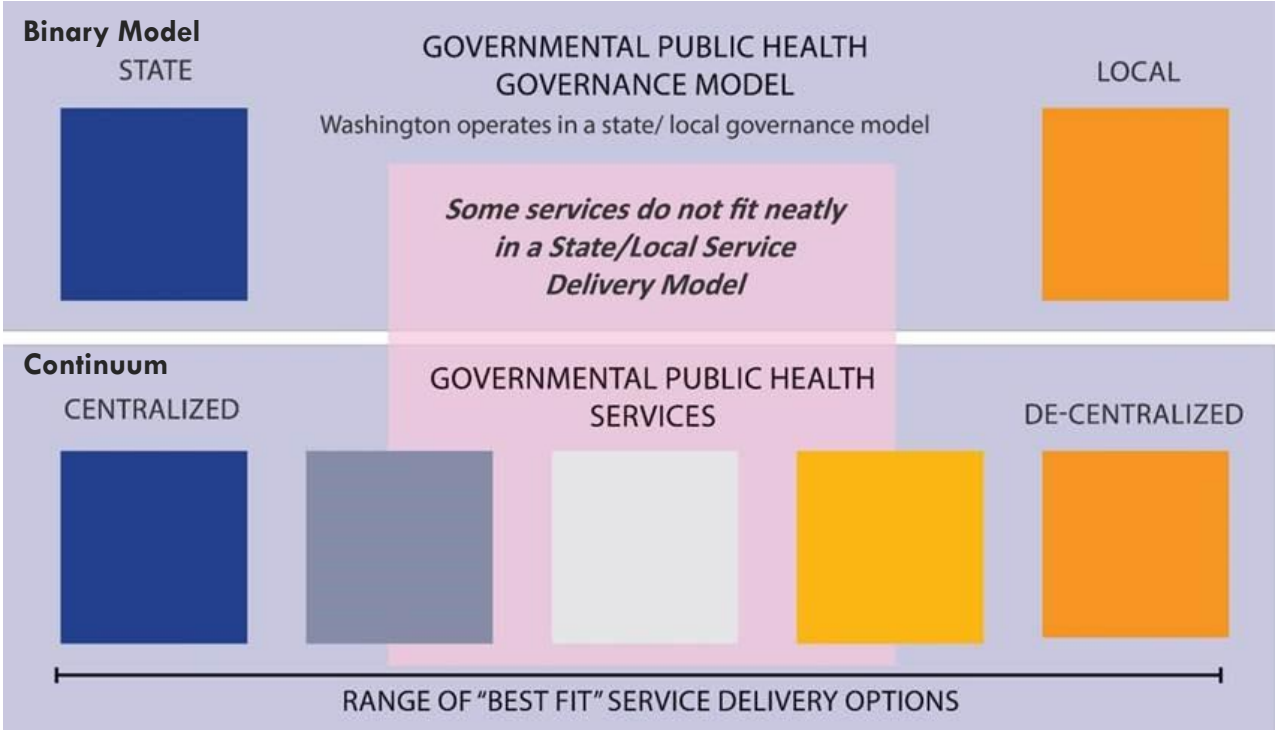
1. There is a limited statewide set of core public health services, called Foundational Public Health Services (FPHS), that government is responsible for providing.
2. Core public health services are funded through dedicated revenues that are predictable, reliable and sustainable, and responsive to changes in demand and cost over time. A major tenet of this part of the vision is that these services would be funded through a combination of state funds, state and local fees, and when available and sustainable, federal grants.
3. Governmental public health services are delivered in ways that maximize the efficiency and effectiveness of the overall system.
4. Governmental public health activities are tracked, and performance is evaluated using evidence-based measures.
5. Local revenue generating options are provided to address locally driven priorities that are targeted to specific community problems.

The implementation of this vision rests on the collective contributions of all agencies within the governmental public health system. Each agency plays a part to deliver FPHS in a large and diverse state. LHJs, for example, range in geographic coverage from 175 (San Juan) to 6,223 square miles (Northeast Tri County) and in population from just over two thousand (Garfield) to over two million (King). Inter-agency relationships within this system are crucial to achieving a common level of public health service delivery that is effective, efficient, and meets the different needs of populations across the state.

NEW SERVICE DELIVERY MODELS

Historically, the governmental public health system in Washington was a binary model where either the State or local public health delivered services. In the new vision, the most effective and efficient delivery of any given public health service in any given place in Washington can involve various configurations of agencies (DOH, SBOH, and individual or groups of LHJs or tribes) working together along a continuum. The goal is to find "best fit" service delivery options for each FPHS as illustrated in the conceptual Exhibit 2. This entails striking the right balance between centralized services combined with services that are also responsive to local variation in geography, population, economics, and culture.

Exhibit 2 Binary Model Compared to Service Model Continuum.



Source: DOH, n.d.

For the purposes of this report, the term "new service delivery model" refers to a set of options that do not fit neatly in a state or local service delivery model.

The idea of sharing services is not new. Agencies in the governmental public health system have found ways to work together to deliver crucial public health services since their creation. 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 essential public health services.[1]

The aim going forward is that when used in the FPHS context, new service delivery models are intentionally designed by partnering agencies to be the most efficient and effective way to deliver an essential public health service. In this way, new service delivery models are different from many fee-for-service/contractual arrangements, mutual aid, interlocal, or "handshake" arrangements that happen among agencies. As some of the case studies illustrate service delivery is always evolving among possible models and in degrees of intention and formality.

See the Appendix for more information about different models of service delivery.

[1] Center for Sharing Public Health Services, https://phsharing.org/wp-content/uploads/2017/03/CenterResources.pdf.

Service Delivery Demonstration Projects and this Report

Foundational Public Health Services (FPHS) was appropriated $12 million dollars in the 2017-2019 State Operating Budget, $10 million of which was directed to local health jurisdictions (LHJs) and $2 million to the Washington State Department of Health (DOH). In allocating the $10 million for LHJs, $1 million was dedicated to service delivery demonstration projects that focus on innovation and transformation of the governmental public health system. The Washington State Association of Local Public Health Officials (WSALPHO) ran a competitive grant process receiving seven proposals that collectively represented nearly all LHJs in Washington. WSALPHO selected and funded three demonstration projects developed by partnerships among LHJs to provide FPHS in a shared way.

A goal of these projects is to test new service delivery models as ways to increase access to expertise and local knowledge, as well as the quality, consistency, quantity of services provided everywhere for the funds available.

PURPOSE OF THIS REPORT

This evaluation describes benefits and limitations of new service delivery models based on the service delivery demonstration projects' experiences early in the funding period. It documents each service delivery demonstration project as a case study and includes themes across cases. This is a formative evaluation examining implementation, early results, and lessons learned thus far from the implementing agencies.

Definitions

- **Governmental public health system:** In Washington, this is comprised of 35 local health jurisdictions (LHJs), the State Department of Health (DOH), the State Board of Health (SBOH), and sovereign tribal nations.
- **Local health jurisdiction (LHJ):** A county board of health organized under chapter 70.05 RCW, a health district organized under chapter 70.46 RCW, or a combined city and county health department organized under chapter 70.08 RCW *(RCW 43.70.514)*
- **Lead agency.** Agency that was the service delivery demonstration project recipient.
- **Partner agency.** Agency that collaborated in the service delivery demonstration project implementation and/or was a beneficiary of services provided by the Lead LHJ.

At this stage of implementation (less than midway through the grant period), this report is not intended to measure whether the demonstration projects have achieved proposed outcomes related to access to services, cost savings, or public health indicators. These outcomes will likely take more time to materialize. In this formative study focused on implementation lessons, BERK did not attempt to measure the counterfactual of what would have occurred without intervention of the service delivery demonstration projects or interview staff from LHJs that did not participate in a service delivery demonstration project. A more summative evaluation may take place after the demonstration projects conclude to examine outcomes and investigate counterfactuals.

METHODS

BERK conducted this evaluation using qualitative content analysis of informant interviews with key stakeholders and project related materials, including each project's grant application, first-year annual report, and performance measurement plans. BERK also conducted a crosswalk of the projects with the FPHS functional definitions and the *2018 Washington State Public Health Transformation Assessment (2018 FPHS Assessment)* to contextualize the evaluation findings. Selected relevant data from the Assessment appear throughout the report.

BERK asked the project teams of lead implementing agencies to identify opportunities for data collection in the period June through August 2018 as well as key informants at partner agencies (see Appendix for full list of interview sources). The data collection period was roughly nine months after the two-year demonstration project funds were disbursed. BERK conducted in-person interviews with lead agency project teams and phone interviews with partner informants. Each interview included two team members, an interviewer and a notetaker, to strengthen reliability and reduce bias. Verbatim comments from these interviews illustrating and supporting findings are in callout boxes throughout the report.

PROJECT DESCRIPTIONS

The demonstration projects are summarized in Exhibit 3.

Exhibit 3 Demonstration Project Summary

PROJECT AND BUDGET	DESCRIPTION	INVOLVED LHJS	FPHS PROGRAM/CAPABILITY AND ELEMENTS AFFECTED FROM THE DRAFT FUNCTIONAL DEFINITIONS MANUAL
TB ECHO and Washington TB Collaborative Network (WTCN) $507,802 for the biennium	Establishes a networked TB response team for all 35 local health jurisdictions (LHJs) in Washington by providing onsite support and using on-demand video conferencing to interface with LHJs across the state. Expands services currently offered by Washington State TB ECHO® (Extension for Community Health Outcomes) multipoint video conference platform to gather a virtual community of healthcare professionals who are interested in TB control and prevention. Develops online needs assessment to guide deployment of onsite support.	Public Health -Seattle & King County (Lead) As a state-wide project, TB ECHO and WTCN are available to all LHJs. The following partners engaged early and were interviewed for this evaluation. Chelan-Douglas Health District (Partner) Skagit County Public Health (Partner) Spokane Regional Health District (Partner) Whatcom County Washington (Partner)	Prevention and Control of Communicable Disease and Other Notifiable Conditions ▪ Provide Information on Prevention and Control of Communicable Diseases ▪ Ensure Disease Surveillance, Investigation, and Control

PROJECT AND BUDGET	DESCRIPTION	INVOLVED LHJS	FPHS PROGRAM/CAPABILITY AND ELEMENTS AFFECTED FROM THE DRAFT FUNCTIONAL DEFINITIONS MANUAL
Communicable Disease, Epidemiology and Assessment Capacity $424,538 for the biennium	Provides trained epidemiologist support to partner counties. Dedicates data and assessment capacity for area-wide epidemiological events, to assist when local resources are not sufficient. The project supports assessment (surveillance and epidemiology) through access to dedicated research scientists in the Spokane Regional Health District (SRHD) Data Center and development of county public health indicator websites.	SRHD (Lead) Adams County (Partner) Asotin County (Partner) Lincoln County (Partner) Northeast Tri-County Health District (Partner) Whitman County (Partner)	Prevention and Control of Communicable Disease and Other Notifiable Conditions ▪ Provide Information on Prevention and Control of Communicable Diseases ▪ Ensure Disease Surveillance, Investigation and Control Assessment (Surveillance and Epidemiology) ▪ Access, Analyze, Use, and Interpret Data ▪ Conduct Assessment and Identify Health Priorities
Provider Resources Website $67,660 for the biennium	Tacoma-Pierce County Health District (TPCHD) is developing and maintaining tailored Provider Resources websites for interested LHJs, customized to that LHJs' unique provider and community needs. The goal is to provide timely, statewide, locally relevant, and accurate information on communicable disease and other notifiable conditions and their control. TPCHD already maintains a Provider Resources website for their LHJ. The project entails sharing and customizing content for other LHJs.	TPCHD (Lead) Yakima County (Partner) Cowlitz County (Partner)	Prevention and Control of Communicable Disease and Other Notifiable Conditions ▪ Provide Information on Prevention and Control of Communicable Diseases ▪ Ensure Disease Surveillance, Investigation, and Control

Note: Activity level crosswalk is available in the Appendix.
Source: BERK, 2018.

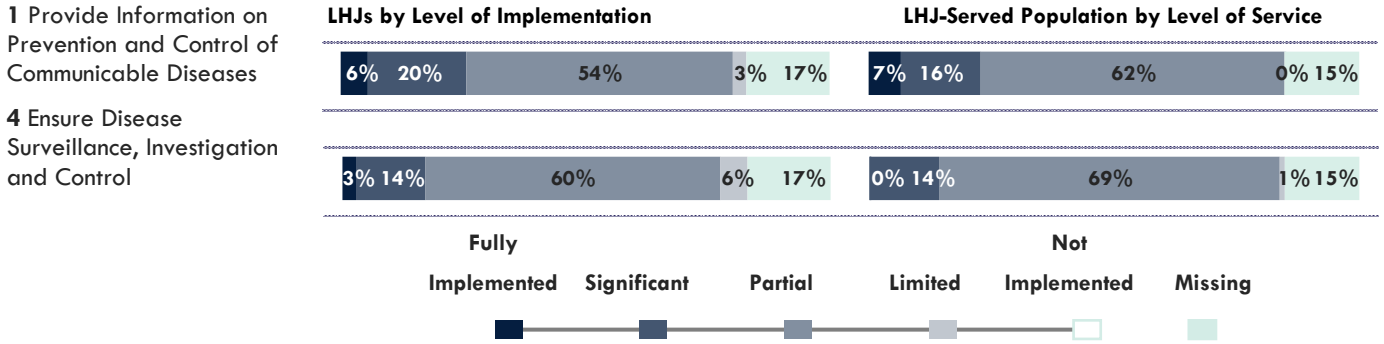
DEMONSTRATION PROJECTS AND FPHS FRAMEWORK

In 2018, LHJs self-assessed their delivery of FPHS in the *2018 FPHS Assessment*. The Assessment found that no foundational program or capability is fully or significantly implemented across all responding agencies (29 LHJs, DOH, and SBOH).

Each of the service delivery demonstration projects focuses on the prevention and control of communicable disease, particularly the elements concerning information provision and disease investigation. Exhibit 4 illustrates the results of the *2018 FPHS Assessment* related to these elements. Only 26% of LHJs reported full or significant implementation of the information provision services and only 17% reported full or significant implementation of disease surveillance, investigation, and control. The shares are even lower when weighting the assessment by the LHJ-served population,

23% and 14% respectively. DOH reported significant implementation for both elements. Since SBOH is not a direct service provider it did not self-assess on the foundational programs.

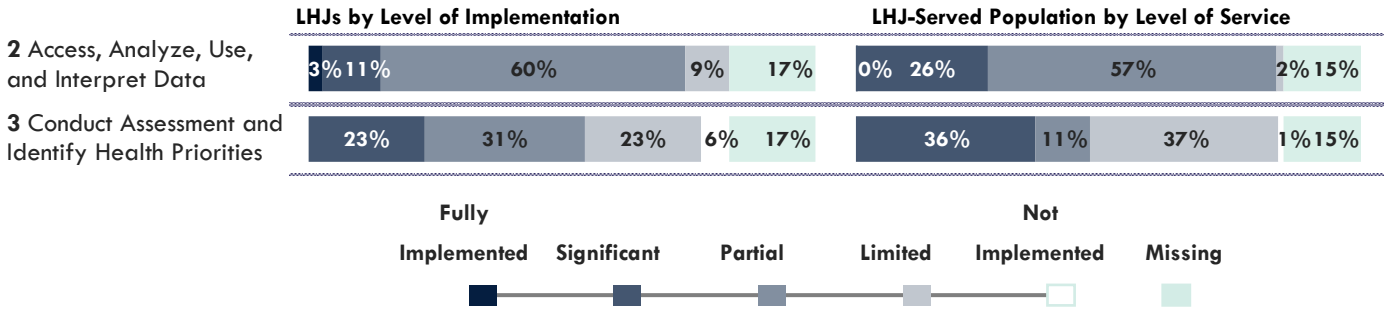
Exhibit 4 Assessment Results for Control of Communicable Disease, Elements 1 & 4



Source: Washington State Public Health Transformation Assessment, 2018.

One demonstration project also addresses the cross-cutting capacity of assessment. The current state of assessment, as indicated by the *2018 FPHS Assessment* is summarized in Exhibit 5. Again, full implementation is rare. Only 14% reported full or significant implementation of data access, analysis, use, and interpretation and 23% reported full or significant implementation of conducting assessments and identifying health priorities. The shares weighted for population are 26% and 36%, respectively. DOH reported significant implementation for access, analyze, use, and interpret data and partial implementation for conduct assessment and identify health priorities. The SBOH reported partial implementation of access, analyze, use, and interpret data.

Exhibit 5 Assessment Results for FPHS Assessment Capabilities, Elements 2 & 3



Source: Washington State Public Health Transformation Assessment, 2018.

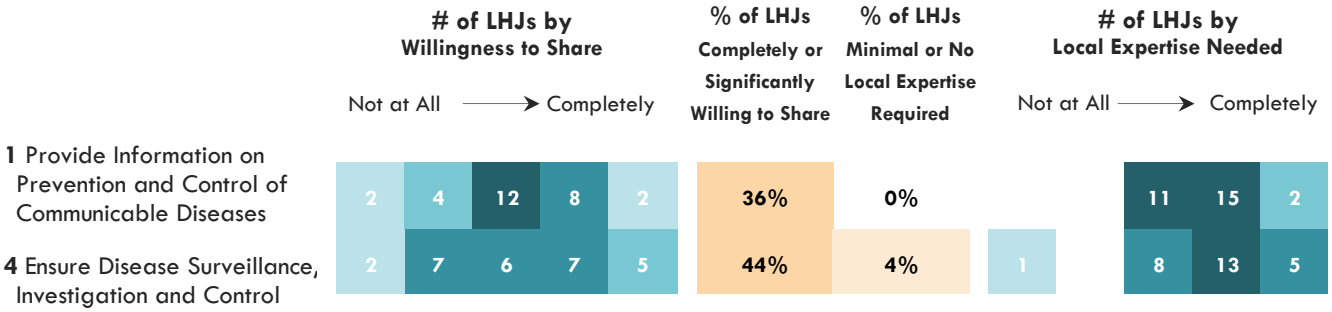
The results demonstrate that the status quo for delivering control of communicable disease and assessment is not meeting the mark. Further, agencies are willing to collaborate on new models more than they currently are. The *2018 FPHS Assessment* also ranked their willingness to share each foundational service and self-assessed the degree of local expertise required to deliver that service. Each LHJ answered the three questions around sharing using a five-point Likert scale ranging from "1 – Not at all" to "5 – Completely."

The three questions asked were:

- To what extent do you share this Element or Activity with another organization? (Current Sharing)
- Would you consider sharing this Element or Activity with another organization? (Willingness to Share)
- Does this Element or Activity require local expertise? (Local Expertise)

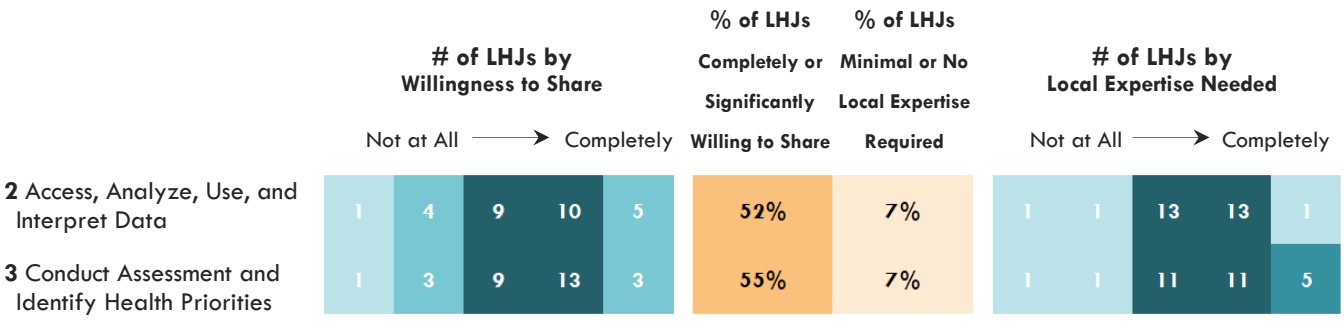
The results for communicable disease are shown in Exhibit 6 and for assessment in Exhibit 7. The teal columns on the left and right of the exhibit show the number of LHJs reporting each number on the Likert scale, shaded by quartile for both willingness to share and local expertise questions. The darkest teal denotes larger numbers of LHJs. The middle columns, in gold, display the percent of LHJs that reported to be either completely or significantly currently sharing each element (a 4 or 5 on the Likert scale) and the percent of LHJs reporting the element either requires "1 – no local expertise" or "2 – minimal local knowledge."

Exhibit 6 Willingness to Share Results for FPHS Control of Communicable Disease, Elements 1 & 4



Source: Washington State Public Health Transformation Assessment, 2018.

Exhibit 7 Willingness to Share Results for FPHS Assessment, Elements 2 & 3



Source: Washington State Public Health Transformation Assessment, 2018.

Cross-Case Themes

This section summarizes cross-case themes that provide insight into factors that shape successful service delivery models. Each of the three demonstration projects are described in detailed case studies beginning on page 17.

FACTORS UNDERLYING SUCCESSFUL SERVICE DELIVERY MODELS

- **Set-aside time and resources.** The competitive grant opportunity and dedicated resources created a structure for intentionally designing and planning a service delivery model. In contrast, when agencies are under pressure to deliver services without dedicated time to plan and collaborate, they are likely to use the solution that is most familiar or appears easy to implement, which may not be the most effective and efficient solution. Having the space and time to work with partner agencies on the grant proposal allowed them to identify ways to tap into a valued service without added costs.
- **Trust among participating LHJs.** Trust was key to getting projects up and running and to taking the risk necessary to try different approaches. Interviewees cited many factors that built trust, including in-person interactions, existing relationships or history working together, shared goals and understanding of the need for the service, and recognition of each agency's strengths and needs.
- **Specialization.** Across all three service delivery demonstration projects, each agency brought to the partnership something different and crucial for a working FPHS service. For example, partner LHJs hold the health provider relationships and lead agencies may hold the technical capacity.
- **Local presence.** Interviewees in the projects emphasized the importance of maintaining local presence in the community and positioning the local LHJ as the primary resource for any community and the face of governmental public health. Staff at lead LHJs commonly described their role as "customer service," an "extension of staff," or "behind the scenes" technical support for partner LHJs accordingly.

COMMON CHALLENGES TO NEW SERVICE DELIVERY MODELS

The service delivery demonstration projects faced challenges including staff turnover, high opportunity costs of participation for partner agencies, managing appetite for risk and change, and insecure or unstable funding.

Staff turnover. Trust and relationship building are crucial aspects of initiating, implementing, and sustaining a project. Staff turnover hinders this process requiring knowledge transfer before a departure and shifting resources to hiring. In each service delivery demonstration project, retirements and new hiring were challenges, especially in remote areas. At the same time, these transitions are opportunities for new service delivery models to provide stability in service delivery and coverage. This is crucial given current trends facing public health including an aging workforce, workforce being absorbed in other sectors, and changing needs of a new workforce. Public health can be more resilient to these shifts if services are provided in a more harmonized and distributed manner.

- **Participation costs.** Smaller agencies face high participation costs, requiring time from staff who hold multiple responsibilities. Investing time in service delivery means that those staff cannot spend time in other areas. For example, in-person meetings and trainings, while cited as incredibly valuable, can also be incredibly costly.
- **Communicating value.** Communicating the long-term value of shifting to a service delivery model with local board of health members and other stakeholders was a challenge for some partner LHJs. Concerns included being accountable for a service without control over that service, diminishing the value of local contexts and needs over time, and "one size fits all" approaches.
- **Ramp up time.** Some agencies in the service delivery demonstration projects were unable to begin work on the new services until funds were released in December 2017. As noted above, dedicated time and resources for planning and building the assets (both technical and business relationships) for service delivery models are crucial. Insecure, unstable, or delayed funding limits agencies' ability to build assets outside of agency business as usual.

CHARACTERISTICS OF SERVICES THAT ARE GOOD CANDIDATES FOR SHARING

The demonstration projects point to characteristics of services that are well-suited for sharing. When these characteristics are more universally applied as criteria, several more examples of candidates for sharing can be found among the FPHS.

- **Infrequent or sporadic need for services that cost a significant amount of money.** For example, surge disease investigations as demonstrated in the TB service delivery demonstration project, and periodic community health assessments.
- **Expensive or rare skill set or expertise that is easily transferred** or deployed in a time of need and/or does not need to live locally (can be provided from a distance). This is illustrated in the TB service delivery demonstration project regarding data, epidemiological, and assessment services.
- **Services with significant up-front capital and resource investment.** For example, services such as higher-quality labs for TB and online resource development require relatively costly up-front investment in technology.
- **Services with little marginal cost to increased participation and/or expanding a service** to additional agencies. For example, TB ECHO (a video conferencing platform) can serve more people at very low marginal costs.
- **Services that are or can be delivered "virtually."** All the cases demonstrated ways online and virtual platforms can be leveraged for information sharing, data collection, and case review with experts and among colleagues. s

Future FPHS Service Delivery Models

UNDERSTANDING THE UNMET DEMAND FOR NEW SERVICE DELIVERY MODELS

Drawing lessons from the demonstration projects leads to questions about other opportunities for sharing. There may be opportunities where **handshake agreements** currently exist; through **other proposals** that were not funded in the first grant cycle; through **discussions at WSALPHO and other convenings** of governmental public health professionals; or in **existing platforms** such as the Accountable Communities of Health (ACH) regions, preparedness planning regions, or the existing Advisory Group of LHJs in Region 9, where collaboration already exists and potential deeper and broader sharing could be tested. These are potential areas where a service might naturally be best delivered in partnership.

The *2018 FPHS Assessment* also created a new source of information to begin to understand demand and potentially rethink service delivery. The data can help pinpoint areas of demand for new service delivery models in at least two ways.

First, comparing the degree to which a service is currently implemented with the level of willingness to share suggests that elements with low levels of full or significant implementation and high willingness to share hold potential for new models. The top 20 elements with low levels of full implementation and high willingness to share (ranked by the gap) are shown in Exhibit 8.

Second, the Assessment reveals sharing opportunities where willingness to share exceeds current levels of sharing. The results show that willingness to share exceeds current sharing for all elements of all FPHS, except two. The top 20 ranked by this gap are shown in Exhibit 9. Thirteen elements appear in both lists, ranking as high potential for new models. With this information, public health leaders can explore a best-fit model through a closer examination of the data by agency (or by agencies grouped by size or region) and collaboration with interested agencies.

Exhibit 8 FPHS elements where low levels of implementation align with high willingness to share

PROGRAM OR CAPABILITY	ELEMENT	% FULLY OR SIGNIFICANTLY IMPLEMENTING	% WILLING TO SHARE	GAP
Prevention and Control of Communicable Disease	Ensure Availability of Public Health Laboratory Services	6%	85%	79%
Environmental Public Health	Protect the Population from Unnecessary Radiation Exposure	0%	64%	64%
Policy Development and Support	Utilize Cost Benefit Information	6%	66%	60%
Assessment (Surveillance and Epidemiology)	Collect and Maintain Statewide and Community Level Data and Data Systems	9%	66%	57%
Access/Linkage	Provide Information on Access to Clinical Care	6%	62%	56%
Maternal/Child/Family Health	Provide Information on Maternal, Child and Family Health	6%	59%	53%
Environmental Public Health	Identify and Address Priority Notifiable Zoonotic Conditions	6%	52%	46%
Access/Linkage	Participate in Collaborative Efforts Around Access to Clinical Care	14%	55%	41%
Chronic Disease, Injury and Violence Prevention	Provide Information on Chronic Disease and Injury and Violence Prevention	6%	46%	41%
Policy Development and Support	Work with Partners to Enact Evidence-based Policies	6%	45%	39%
Prevention and Control of Communicable Disease	Promote Immunization	14%	52%	38%
Assessment (Surveillance and Epidemiology)	Access, Analyze, Use, and Interpret Data	14%	52%	37%
Chronic Disease, Injury and Violence Prevention	Identify Assets for Chronic Disease and Injury and Violence Prevention	6%	39%	34%
Maternal/Child/Family Health	Identify Assets for Maternal, Child and Family Health	9%	41%	33%
Assessment (Surveillance and Epidemiology)	Conduct Assessment and Identify Health Priorities	23%	55%	32%
Emergency Preparedness (All Hazards)	Develop and Exercise Emergency Response Plans	26%	55%	29%
Prevention and Control of Communicable Disease	Identify Assets for Prevention and Control of Communicable Disease	17%	45%	28%
Business Competencies	Information Technology	14%	41%	27%
Policy Development and Support	Develop Basic Public Health Policy Recommendations	6%	31%	25%
Emergency Preparedness (All Hazards)	Promote Community Preparedness	20%	45%	25%

Note: Highlighted rows appear in both lists.
Source: Washington State Public Health Transformation Assessment, 2018.

Exhibit 9 FPHS elements where willingness to share exceeds current sharing

PROGRAM OR CAPABILITY	ELEMENT	% CURRENTLY SHARING	% WILLING TO SHARE	GAP
Policy Development and Support	Utilize Cost Benefit Information	17%	66%	48%
Assessment (Surveillance and Epidemiology)	Collect and Maintain Statewide and Community Level Data and Data Systems	24%	66%	41%
Assessment (Surveillance and Epidemiology)	Access, Analyze, Use, and Interpret Data	17%	52%	34%
Assessment (Surveillance and Epidemiology)	Conduct Assessment and Identify Health Priorities	21%	55%	34%
Chronic Disease, Injury and Violence Prevention	Provide Information on Chronic Disease and Injury and Violence Prevention	14%	46%	32%
Prevention and Control of Communicable Disease	Coordinate Prevention and Control of Communicable Disease-related Additional Important Services	10%	38%	28%
Access/Linkage	Provide Information on Access to Clinical Care	34%	62%	28%
Maternal/Child/Family Health	Provide Information on Maternal, Child and Family Health	31%	59%	28%
Prevention and Control of Communicable Disease	Ensure Availability of Public Health Laboratory Services	59%	85%	26%
Prevention and Control of Communicable Disease	Ensure Disease Surveillance, Investigation and Control	19%	44%	26%
Communication	Implement a Communication Strategy	10%	31%	21%
Maternal/Child/Family Health	Coordinate Maternal, Child and Family-related Additional Important Services	14%	34%	21%
Policy Development and Support	Work with Partners to Enact Evidence-based Policies	24%	45%	21%
Business Competencies	Information Technology	21%	41%	21%
Maternal/Child/Family Health	Identify Assets for Maternal, Child and Family Health	21%	41%	21%
Emergency Preparedness (All Hazards)	Develop and Exercise Emergency Response Plans	34%	55%	21%
Prevention and Control of Communicable Disease	Provide Information on Prevention and Control of Communicable Diseases	17%	36%	18%
Chronic Disease, Injury and Violence Prevention	Identify Assets for Chronic Disease and Injury and Violence Prevention	21%	39%	18%
Business Competencies	Accountability and Quality Assurance	3%	21%	17%
Business Competencies	Quality Improvement	3%	21%	17%

Note: Highlighted rows appear in both lists.
Source: Washington State Public Health Transformation Assessment, 2018.

WHAT IT TAKES TO IMPLEMENT

Designing best-fit service delivery models in this context means creating an asset with one-time funding and then sustaining and/or expanding this asset at a lower cost in the long-term. In the service delivery demonstration projects, assets include a process or workflow, a website, a tool, or a system among agencies. Well-designed investments to establish infrastructure, intellectual property, and relationships can pave the way for greater long-term returns.

Below are key lessons learned on implementation and scaling projects:

- **Achieving balance and "right-fit" service delivery models is not a financial question;** the process must weigh the characteristics of local communities, capacities of all involved agencies, the nature of the public health need, and willingness to share, in addition to the financial proposition. Implementing a new service delivery model requires investments in time and soft

skills, such as trust and agency-to-agency communication. It is not enough to show that a service can be more effectively and efficiently delivered by the numbers. Agencies must be open to sharing and able to build the trust that the service will be responsive, reliable, and high-quality.

- **Partner agencies emphasized the need to clearly define roles** among large LHJs such as SRHD, TPCHD, and PHSKC, and DOH. Any of these entities may have the capacity to deliver a given service in a center of excellence model, but large LHJs may also have more local knowledge and important relationships and trust, along with capacity to better serve their outlying LHJs, compared with DOH. Different models have been tried in the past with services moving between these entities. Legacy services and duplicated efforts need to be clarified to move to the most efficient and effective governmental public health delivery system to serve all of Washington.
- **The FPHS Steering Committee and subgroups have developed a proposal to fully fund FPHS over the next three biennia.** The proposal prioritizes communicable disease, environmental public health, and assessment early in this plan. The proposal also relies on expansion of new service delivery models to ensure that the State's investment results in increased efficiency and effectiveness in the delivery of public health services. However, as described in the cross-case findings, setting aside time and space for the authentic interagency collaboration required to make the change is a prerequisite for success.

Case: Tuberculosis Prevention and Control

Tuberculosis (TB) is caused by a bacterium that usually attacks the lungs but could attack any part of the body. It is transmitted through the air from one person to another by coughing, sneezing, shouting, or singing. In most people the bacterium remains dormant indefinitely ("latent TB") and neither causes symptoms nor is passed to other people. However, at any moment and without warning, the dormant bacterium can become "active TB" causing symptoms and illness in the person and becoming highly infectious to others. While diagnosing and treating active TB is of highest immediate priority, diagnosing and treating latent TB is also important in preventing the conversion to active and infectious TB that not only sickens an individual but also can spread to others. Treatment of a typical active TB case requires 180 days of medications, x-rays, lab tests, and follow-up and testing of contacts. TB can interact with other conditions and its infectiousness requires collaboration from agencies in health care and public health working together to prevent and control the spread of disease.

The Washington State Department of Health (DOH) reported the following statistics and trends regarding the nature of the disease in Washington:[2]

- Only three counties report ten or more TB cases: King County (102 cases), Snohomish (30 cases), and Pierce (26 cases). These counties account for 78% of Washington's TB cases.
- TB incidence rates in Washington have progressed downward since 2007. In 2017, 207 TB cases were reported (a rate of 2.8 cases per 100,000 people, compared with a rate of 4.5 per 100,000 people in 2007).[3]
- Groups that experience a disproportionate share of TB cases in Washington include racial and ethnic groups other than non-Hispanic White, people 65 years and older, and males.

All counties, however, need to ensure access to TB prevention and control, regardless of how infrequently cases arise. Given the distribution of TB cases, TB experience and expertise is concentrated in King, Snohomish, and Pierce counties.

GOVERNMENTAL PUBLIC HEALTH ROLES

The governmental public health role in TB prevention and control, as for all communicable diseases, includes data, planning, disease investigation, coordination, and lab tests. Public health is also expected to undertake the following activities specific to TB under the FPHS framework.

- Maintain adequate expertise and resources to ensure the identification and appropriate treatment of individuals who have latent TB infection and active tuberculosis, including the provision of directly-observed therapy for active TB according to Centers for Disease Control and Prevention (CDC) guidelines.
- Provide education to and coordinate with healthcare providers to ensure appropriate screening, reporting, and treatment of TB.

[2] Washington State Department of Health, Tuberculosis Fact Sheet 2016, https://www.doh.wa.gov/Portals/1/Documents/Pubs/343-108-WTBDFactSheet2016.pdf
[3] Washington State Department of Health, TB Infographic 2017, https://www.doh.wa.gov/Portals/1/Documents/Pubs/343-142-WTBDInfographic2017.pdf.

- Conduct timely contact investigation for all active pulmonary TB cases per state guidelines.
- Maintain the ability to identify and provide education for a community provider willing to treat latent TB.
- Maintain access to consultation with a public health physician with experience in diagnosis and treatment of TB as well as contact investigations.

TB control is a highly specialized area of public health requiring resources that are not readily available statewide.

- **Staff.** The infrequency of TB cases in most places and specialized nature of the expertise means that agencies may be unable to hire or maintain this knowledge and skillset. Due to the infrequency of cases, agencies may be unable to afford to pay staff with expertise when there is no work for them, or to maintain proficient skills in existing staff if the skills are rarely deployed .
- **Expertise.** TB is a highly specialized area of public health. TB cases are not very common, with most agencies and jurisdictions seeing a few cases a year or even one case once every few years. Developing expertise requires training and practice, and exposure to multiple cases is necessary to maintain the knowledge and skill.
- **Time.** TB cases are nuanced, and approaches are not black and white. The grey areas mean that there is not always a clear diagnosis or treatment solution. Determining the best path forward requires investing time to consult resources and discuss options. Screening individuals during a contact investigation and administering treatment is time-consuming.

PREVIOUS PRACTICE

Prior to the TB ECHO expansion and formalization of the Washington TB Control Network (WTCN), LHJs delivered TB case management to different extents. Across the state, when LHJs needed additional expertise or resources, they made a variety of arrangements, including the following:

- Reaching out to Dr. Masa Narita, Director of Public Health – Seattle & King County's (PHSKC) TB Control Program. Prior to the demonstration project, many LHJs had informal assistance relationships with PHSKC related to TB diagnosis and treatment. Staff from several LHJs noted that they occasionally reached out to Dr. Masa Narita for quick phone calls when faced with questions on how to handle TB cases. These were informal, ad-hoc consultations without reimbursement to PHSKC.
- Contracting with Dr. Christopher Spitters, Medical Director of PHSKC's TB Clinic and the TB control officer for Snohomish, Island, Chelan, and Douglas counties.
- Consulting Dr. Scott Lindquist, State Epidemiologist for Communicable Diseases at DOH.
- Contracting with the private sector.

Below are a few examples from select LHJs on how they handled TB cases prior to the service delivery demonstration project:

- ***Chelan-Douglas Health District:*** Over the last five years or so, staff have encountered approximately one TB case each year. Before that, Chelan-Douglas had no TB cases for a stretch of time. Because of the infrequency of cases, it has been difficult for local staff to develop

specialized expertise. When TB questions arose, staff contracted with Dr. Christopher Spitters and Dr. Scott Lindquist for consultations. When Chelan-Douglas needed to hire a new nurse, it was challenging to hire one with TB experience.

- ***Skagit County Public Health:*** Skagit did not have a dedicated resource for TB assistance. When local staff encountered TB questions, they reached out to the health officer, the state's TB consultant, and other LHJs for advice.
- ***Spokane Regional Health District:*** There was a dearth of knowledge in the community about TB. Local staff did not have a specific background in TB and called Dr. Masa Narita informally for advice on cases. Staff received help from hospitals, but this was challenging. With just one staff dedicated to TB, the LHJ was limited to treating cases rather than educating, training, and building community knowledge.
- ***Whatcom County Health Department:*** Whatcom County public health staff saw about 5 to 10 TB cases a year. Staff shared that they consulted research articles on how to handle TB cases, but those articles frequently suggested different approaches, resulting in decisions based on conflicting information.

OPPORTUNITY FOR NEW DELIVERY MODEL

Given the constraints on staff, time, and expertise, smaller agencies handled infrequent cases through the above mentioned previous practice arrangements. However, the informality of some of these arrangements meant there were inefficiencies or uncompensated time for the agencies providing the consultation services, and the access and quality of service was not uniform for LHJs that did not know who to contact.

The service delivery demonstration project was an opportunity for more intentional, efficient, and equal access to TB Prevention and Control support based out of PHSKC through starting up the WTCN and expanding TB ECHO. While informal assistance and TB ECHO were already in place, the service delivery demonstration project created an opportunity to formalize WTCN and increase the frequency of TB ECHO.

TB ECHO was an existing video conference that took place every other week for clinicians working on TB cases. The sessions covered case review and consultation on specific cases and didactic sessions on TB-related topics to help expand the use of best practice standards of care. The service delivery demonstration project expanded TB ECHO to weekly sessions with more resources dedicated to improving the design and promotion of sessions. The PHSKC team also provided written summaries of discussions and recommendations following the sessions.

WTCN formalized the assistance that many LHJs were already receiving by establishing the network as a TB response team for governmental public health agencies, including DOH and all 35 LHJs. The PHSKC team visited many LHJs in person to introduce the network, invite participation, and offer their consultation services.

TB ECHO Video Conferencing Platform	**Washington TB Collaborative Network**
The TB Extension for Community Healthcare	The Washington TB Collaborative Network

TB ECHO Video Conferencing Platform	Washington TB Collaborative Network
Outcomes (ECHO) Project is a collaborative model of medical education and care management that provides knowledge and support on TB to healthcare professionals inside and outside of the governmental public health system. Through an easy-to-use teleconference technology, ECHO provides the following:[4] ▪ Weekly sessions with case review and consultations for clinicians working on TB infection or TB diseases cases. ▪ Didactics on TB-related topics, twice a month. ▪ TB specialists providing mentorship on best practice standards in TB care. TB ECHO is open to all governmental public health agencies and other healthcare professionals in Washington, and participants can join as they are available.	(WTCN) is a network that provides staffing, lab, and materials support for governmental TB programs around the state and facilitates connections among networks partners.[5] ▪ Staffing support includes consultations, job shadowing, and congregate setting investigations. ▪ Lab support includes single blood collection tubes and newest generation tests. ▪ Resources include educational materials, database support, and communication templates. WTCN is open to all governmental public health agencies in Washington, and any agency can contact WTCN by phone or email or directly contact program leaders. The team includes one physician, three nurses, three epidemiologists, and three administrators.

PRELIMINARY RESULTS

TB ECHO

Increasing the frequency of TB ECHO to once a week provided more opportunities for participants to present cases and work on ongoing TB issues. Because TB ECHO existed prior to this service delivery demonstration project, case participants already knew about the program, and hosts could dedicate more resources to running the sessions, rather than raising awareness about TB ECHO.

Many participants shared that they benefited from peer support. TB ECHO created a sense of community, reducing feelings of isolation when staff faced challenging cases in their communities.

TB ECHO Summary (Jan-July 2018):

- 24 TB ECHO sessions
- 26 LHJs participated
- 25 LHJs presented cases
- 39 total case consultations
- 5 didactic sessions

[4] Washington State Department of Health, TB Project ECHO, https://www.doh.wa.gov/YouandYourFamily/IllnessandDisease/Tuberculosis/TBProviderToolkit/TBECHO
[5] Washington TB Collaborative Network, https://www.kingcounty.gov/depts/health/communicable-diseases/~/media/depts/health/communicable-diseases/documents/tuberculosis/WTCN-brochure.ashx?la=en

Participants presented a wide variety of TB scenarios, and through these case studies, public health staff from different LHJs clarified processes and walked through TB cases together. Participants reflected on whether they had encountered a similar case and whether they identified with the case at hand. The case study format gave participants the opportunity to dialogue among themselves within their individual LHJs: What would they do if faced with a similar situation in their LHJ?

PHSKC and partner LHJs shared some challenges to implementation:

- Some LHJs are not aware of the resource.
- Staff with only a half-hour lunch break do not have enough time for an hour-long session.
- While TB is open to them, primary providers do not tend to engage in TB ECHO and outreach effort so far has been focused on the governmental public health system. Some ECHO participants shared that primary doctor or provider participation would support shared knowledge and coordination in LHJs.
- Participants have varying levels of knowledge of TB. Beginners may struggle with more advanced medical cases, while those advanced case studies benefit regular participants. There are also varying levels of interest in holding more didactic sessions and/or case studies.

On TB ECHO:

"It has created a sense of community, it greatly reduces the sense of isolation when faced with very challenging clinical cases. Most of us share much of the same type of work, it's so refreshing and encouraging to feel like others speak your language. You don't have to describe how challenging the work is. There's a sense of shared challenge and shared support."
– Partner LHJ nurse

WTCN

WTCN staff provided consultations on an as-needed basis to other public health agencies throughout Washington. LHJs expressed that the initial face-to-face meeting with PHSKC staff was important to relationship-building and that if they had learned about WTCN only through email, they would not have reached out as quickly when they needed help.

During the first year, WTCN staff prioritized outreach:[6]

- The team visited LHJ TB Control Programs on-site or by video conference, sent an online TB Needs Assessment Survey to all LHJ TB Control Program staff, introduced WTCN by email to health officers through WSALPHO, created and distributed a WTCN brochure to LHJs, and individually reached out to LHJ TB program staff during conferences, consultations, and other opportunities.

PHSKC and partner agencies shared some challenges to implementation:

- Some agencies are not aware of the resource.
- WTCN assistance occurs by invitation only. LHJs that are not aware of the resource or that do not reach out to the team do not receive assistance.
- The infrequency of TB incidence means that the team must continually reach out to agencies so they are aware of the resource when they need it.
- Administrative tasks and relationship-building take time.
- Some aspects of TB screening, treatment, and case management need to remain local.

WTCN Summary:

- 77 requests from 16 LHJs
- 3 LHJs provided support to another LHJ
- 20 of 35 LHJs involved in WTCN

Technical support:

- 6 LHJs receiving medical case management/contact investigations
- 13 case consultations
- 1 MDR-TB case consultation
- 3 contact/congregate setting investigation events

Training/education:

- 2 job shadows
- 1 new training tool
- 1 regional provider training

Examples of the WTCN in action include:

Job shadowing in Chelan-Douglas. Chelan-Douglas had recently hired a new nurse who was new to TB. Nurses are directly involved in TB work, but TB is a highly specialized area, the learning curve is high, and there is a low likelihood of hiring a new nurse with TB experience. Given the low frequency of cases and highly specialized knowledge, opportunities to train were very important to capacity building.

Through WTCN, Chelan-Douglas sent the new nurse to job-shadow at PHSKC for two days. PHSKC covered transportation and accommodation costs for the nurse's job training. During the training, PHSKC staff showed the new nurse how their TB clinic works, how to reach out to clients, and how to conduct direct observed therapy (DOT). The Chelan-Douglas nurse observed as Dr. Christopher Spitters and a nurse took in a new homeless TB patient, used a respirator, interviewed the patient, and

[6] Shared Service Demonstration Project Report Annual Report Year 1, 2018-08-20.

placed the patient in isolation for TB. The training made a significant difference in the LHJ's readiness to respond to TB.

Contact investigation in Spokane. In January 2018, Spokane faced its largest TB investigation. One young woman died of TB, and public health staff suspected up to three active TB cases, with 75 others who may have been exposed to TB. Dr. Bob Lutz reached out to Dr. Masa Narita, and WTCN mobilized resources to respond promptly. First, WTCN held a video conference with key staff from Spokane to learn more, identify assistance needed, and discuss logistical support. WTCN dispatched six medical staff, collaborated with the DOH TB program to coordinate a congregate setting contact investigation, and facilitated help from other LHJs; Adams County sent one medical staff, and Clark County provided a Microsoft Access database they developed for contact investigations.

WTCN helped to collect TB blood tests and sent them to PHSKC's lab for processing. Because PHSKC's newer generation of TB blood test is more efficient, tests processed in King County cost $120 less per test than if they were processed at Spokane's regular lab.

Later, WTCN dispatched staff to support a second round of screening and to support contact investigation activities. The situation is ongoing.

Spokane staff shared that the contact investigation was so large that they could not have taken care of the case alone. The goal of screening is to identify those who are infected (latent TB) and those who have active TB and link them to care. This process involves many steps and is time-sensitive in that the sooner it is accomplished, the fewer additional people are exposed to the risk of contracting TB. The additional support from WTCN provided critical support to speed up the screening process. Spokane shared that they referenced PHSKC's approach to investigations and drew relevant applications to their LHJ. Those resources helped Spokane respond to their case, while WTCN provided extra hands on the ground.

Spokane Contact Investigation support from WTCN:

- 1 LHJ needed critical flex support
- 16 King County flex staff dispatched
- 3 non-King County flex staff dispatched
- 138 people screened for TB during these events
- $15,000 in lab cost savings

LESSONS AND LIMITATIONS

Existing relationships matter. PHSKC's experience with WTCN and TB ECHO demonstrated the importance of existing relationships. Where partner agencies already trusted PHSKC's expertise and reached out to PHSKC staff for consultations, WTCN simply formalized existing relationships and facilitated resource sharing. On the other hand, because WTCN assistance occurred by invitation only, connecting with agencies where advisory relationships did not yet exist was more challenging.

Services need to be accessible. Partnering agencies need to feel comfortable reaching out to the expert team. The in-person, face-to-face WTCN introduction helped to establish trust between the PHSKC team and partner agency staff.

Invest in training in knowledge that can easily be shared and has a significant impact. For example, nursing is a hands-on practice, so nurse training needs to be hands on; it cannot be

theoretical classroom training. The two-day job shadowing for the nurse in Chelan-Douglas had a large impact on that LHJ's TB knowledge.

Local relationships with the community are important to maintain. Dispatching experts only from one region into other communities could create relational gaps between public health officers and community members. To emphasize local relationships, the TB surge team works under the direction of the local health officer when deployed. If WTCN expands, leaders can consider building expertise in more than one region to further emphasize local relationships.

Many aspects of TB treatments need to be local. TB screening must take place close to the situation, and treatment that requires DOT needs to be administered locally. If WTCN expands, it is critical to identify steps that need to take place locally and those that can take place remotely and at lower cost (such as lab tests).

Day-to-day case management in most cases needs to remain local. Staff mentioned that working directly with patients they learn about other factors that holistically affect them. Staff who are familiar with local resources are better equipped to respond to these other factors and connect patients to appropriate resources. Any expansion of WTCN or TB ECHO needs to include local case management.

On WTCN:

"Ideally, we create a network of experts across the state with PHSKC serving as a hub and then have more local experts." – *Lead LHJ*

On WTCN:

"Because I've been doing this on my own for so long, I have a wealth of awareness and resources. Sometimes I've had neighboring LHJs call when nurses get stuck. I would love to contribute to WTCN but faced with my own workload it's not practical. I don't know if WTCN could help incorporate expertise that existing nurses have to help build a reservoir of who-knows-what in what county?" – *Partner LHJ nurse*

LOOK AHEAD

The service delivery demonstration project has shown that this service delivery model is effective and results in higher-quality service than many LHJs would have had otherwise. However, at this point the team is still working out important questions related to sustainability and scale. They are also considering what an optimally efficient model looks like. For example, participants all appreciate more frequent TB ECHO meetings, but is it the best use of resources for TB Control, and what is the return on investment in terms of TB outcomes and knowledge?

Clarify roles. The future statewide roles and responsibilities are unclear. Both DOH and PHSKC offer similar resources, and it could be beneficial to clarify and deepen partnerships with partner agencies.

Review sustainability. There are questions surrounding the sustainability of TB ECHO. Staff suggested that while the weekly sessions appear to be working well, staff are investing immense efforts into efforts. Participation has been relatively consistent, but what is the goal? Number of participants or quality of service? It is too soon to tell if we are truly reaching people and increasing knowledge.

Identify concrete savings. Lab savings are a concrete example of increased quality, efficiency, and cost-savings from working through PHSKC.

Develop communications and outreach strategy. It is crucial that partnering agencies know the resource is available and trust it. However, because cases are so infrequent, they must be continually reminded of its availability.

Case: Communicable Disease Control and Prevention, and Assessment

The healthcare system diagnoses and treats individuals who contract communicable diseases. Providers in the healthcare system are required to inform the governmental public health system of diagnoses of specific conditions known as "notifiable conditions." These include diagnoses of e-coli, Legionella, pertussis, measles, HIV, syphilis, rabies, and West Nile Virus. The governmental public health system investigates each notifiable condition case to identify and mitigate the sources of the disease, identify and alert all others who may have been exposed, provide additional laboratory testing to determine if cases are related and part of an outbreak, and to monitor population health data for changes and trends in disease (disease surveillance).

The FPHS cross-cutting capability of public health assessment undergirds the system's ability to deliver programs effectively and efficiently. Assessment includes the capacity to use and analyze data to understand community health needs, including social determinants of health. This analysis helps set priorities and design programs that address local health conditions. Assessment can also refer to a time-bound in-depth effort to take stock of a community's health needs in collaboration with local partners, including healthcare providers, tribes, schools, long-term care facilities, and non-profits. Following a community needs assessment, the governmental public health system and partners can develop a well-informed community health improvement plan to guide activities.

WHAT IS COMMUNICABLE DISEASE?

- In Washington, "communicable disease" is defined as a disease due to a specific infectious agent or its toxic products transmitted from an infected person, animal, or inanimate reservoir to a susceptible host, either directly or indirectly through an intermediate plant or animal host, vector, or the environment *(RCW 16.36.005)*.
- A "notifiable condition" is a disease or condition of public health importance, a case of which, or for certain diseases, a suspected case of which, must be brought to the attention of the local health officer or the state health officer. *(WAC 246-101-010)*

GOVERNMENTAL PUBLIC HEALTH ROLES

The governmental public health system manages the investigation and surveillance of notifiable conditions from animal bites to Zika virus. The system relies on quality data, community relationships, and public health expertise to ensure that individual cases and outbreaks are appropriately reported, investigated, and managed. Public health agencies are also responsible for programs associated with the prevention of communicable disease. This entails maintaining appropriate levels of expertise for specific diseases, though a given agency may only see a specific condition every few years or never; LHJs must also maintain ongoing communication and information sharing with partners including health providers, schools, long-term care facilities, tribes, veterinarians, and other public agencies.

PREVIOUS PRACTICE

Several LHJs surrounding Spokane County (Adams, Lincoln, Northeast Tri, and Whitman) identified the service delivery demonstration project as an opportunity to formalize and deepen support they received from Spokane Regional Health District (SRHD). They self-identified that they were unable to fully implement communicable disease control and assessment services, and they were not alone.

The *2018 FPHS Assessment* found that no service is fully or significantly implemented across all responding agencies. As shown in Exhibit 4 on page 9, the elements within communicable disease control most relevant to this project are fully implemented in very few LHJs. Implementation of assessment and identification of health priorities was even more limited across Washington LHJs.

Several factors make communicable disease and assessment challenging to implement at a smaller LHJ. These factors also make these good candidates for sharing services:

- **Staff expertise.** Governmental public health must provide access to expertise across the broad array of FPHS. Small agencies are challenged to hire and maintain this type of expertise. With fewer staff, it is unlikely that small agencies have the full range of necessary skills and experience. Agencies often rely on federal grants for staff, so any work done outside of grant money is unbillable (loss of revenue) and needs to be funded with resources for other programs. Small LHJs rely on outside expertise, whether from DOH or larger LHJs, to fill the gaps. The disease-specific skills and knowledge for communicable disease can be challenging to maintain given the infrequency of notifiable conditions. Data skills related to assessment are usually a secondary priority to more urgent needs for hiring and training decisions. It is easier to train a public health practitioner on assessment skills than to train an assessment specialist on public health practice.
- **Staff capacity.** When fragmented across many different duties, staff time quickly becomes absorbed. When staff need to respond to a health situation, such as conducting a disease investigation, they are often waiting for follow-up calls and getting interviews when possible. This makes it difficult to efficiently schedule staff time. Travel times in rural areas are longer, and staff spend more time out of the office than would be required in an urban setting. Urgent needs crowd out duties that require proactive thinking and planning, such as strategic communications or health assessments.

  Larger investigations can require staff beyond what is available in a given LHJ or "surge capacity." Without a plan or relationships in place, an LHJ can be easily overwhelmed. They may draw on help from neighboring LHJs, DOH, local hospitals and health associations, and medical and public health reserve corps.

On staff capacity:

When [a small LHJ] is going to hire a new position, they are going to get an environmental public health person or a nurse. They are not going to get an epidemiologist. They have also had tremendous staff turnover, so nurses that have done epi for 30 years are gone, taking all that experience with them. They have limited budget that does not allow them to have crossover between the new and the retiring staff members, so the timing of this project was perfect. – *Lead LHJ*

- **Funding.** The LHJ funding environment is fragmented. LHJs rely on a broad mix of funding sources, many of which are dedicated to specific services and programs. For instance, many staff are funded with federal grants and cannot bill the grant for their time spent on other/non-grant activities. Communicable disease epidemiology response (CD/Epi) is a high priority for available resources, but prevention activities and capabilities like data analysis and assessment typically have fewer available funding sources. LHJs must use budget from other operations unless grants or other supplemental funding are available. Agencies face difficult decisions about which services to prioritize, though all are considered foundational for a functional public health system.
- **Data technology.** All LHJs have the basic technology required to do communicable disease and

assessment duties. More sophisticated data systems, along with staff trained in these systems, might allow custom reporting and visualizations, frequent updates, more efficient analysis, and/or integration with other sources of data from outside sources like, DOH and local providers. While these features are helpful, it does not make sense for a smaller LHJ to invest in more sophisticated data infrastructure in isolation, and funding for this is rarely available.

OPPORTUNITY FOR NEW DELIVERY MODEL

SRHD has historically worked with its neighboring counties; when smaller LHJs approached SRHD to submit a proposal for the service delivery demonstration project, SRHD emphasized that those LHJs needed to play a significant role in design and implementation. The LHJs (Adams, Lincoln, Northeast Tri, and Whitman) assembled as an Advisory Group, convening with SRHD quarterly to discuss the service delivery demonstration project and ensure it is meeting the objectives. Asotin County joined the group in March of 2018.

Advisory Group LHJs identified **Assessment** and **CD/Epi** as the two areas where they needed the most support from SRHD. A separate team of staff at SRHD took on each component, taking care to first listen to the Advisory Group's concerns and self-identified gaps. The shared expectations of the group were memorialized in a charter to kick off the project. Among other things, this charter outlined the goals of sharing, commitments made by each party, expectations of communication channels and cadence, and shared performance measures and definitions.

Spokane's approach to the service delivery demonstration project:

"The goal is not to have Spokane do the work but help the LHJs when they get way behind. They need to be an expert in their community, to be seen as a resource, as the people to go to when there are issues, not Spokane. And at some point, we're going to ask for surge support." – *Lead LHJ*

As described in more detail below, during the first nine months of implementation (November 2017 to August 2018), systems were established (e.g., SharePoint and website infrastructure, Advisory Group meetings, governance structure), and initial activities began (e.g., assessment outreach, planning, data collection and analysis, and CD/Epi needs assessment and trainings).

PRELIMINARY RESULTS

Results are broken into two subsections, one for each FPHS service (CD/Epi and Assessment).

Communicable Disease and Epidemiology Support

There are varying degrees of thoroughness to a notifiable conditions response. The first step is to enter the cases into the statewide Washington Disease Reporting System (WDRS), formerly PHIMS. Subsequent steps include following up on treatment with providers, interviewing those involved in the case, notifying relevant local contacts, strategizing about how the case could have been prevented, and sometimes interacting with media. To do all these steps well, staff need interviewing skills, disease-specific knowledge or access to expertise, and time. The Advisory Group LHJs identified this as one of their priority needs because they were under-resourced. SRHD saw an opportunity to set up relationships, ensure consistency in policies and processes, and build capacity in the partner LHJs that they could then benefit from in a surge event.

The SRHD CD/Epi team started with a needs assessment and baseline performance measurement. In November 2017, they interviewed leadership and staff about the health department structure, staff

background and comfort levels with CD content, their CD program processes, relationships with the local health provider community, training needs, and technology. The performance baseline charted various timeliness measures (for example, percentage of cases reported, and investigations initiated within specified timeframe) over the past five years for communicable diseases.

This assessment informed the team's activities, which include:

- **Training.** The most requested training topics in the needs assessment were around the recently implemented WDRS; epidemiology basics; and case-based, disease-specific training. The team developed formats that would best fit the needs of the Advisory Group LHJs; every one-day training requires smaller LHJs to shut down services for at least that day, so instead, the team used virtual training formats including YouTube videos, case presentations and collaborative problem-solving, and shorter, lunch-time workshops.
- **Extension of SharePoint site** that supports Region 9 emergency response can be easily expanded to include more LHJs beyond the Region.

Based on early results, SRHD points to growing demand for these types of supports, observed in at least three ways:

- Calls from Advisory LHJ staff asking questions.
- Attendance at webinars and online resource views, especially by participants they had not identified previously.
- Asotin and Walla Walla counties reached out to join the collaborative group.

The service delivery demonstration project has provided a platform to **deepen relationships** and **lower barriers** to ask for help on CD/Epi issues. LHJs are ultimately accountable to their local board of health, so it is noteworthy to entrust an outside party with some of this work. It can take more work to establish a new mode of operating, even if it may be more efficient in the long run. By deepening relationships between SRHD and partner LHJs, those LHJs trusted SRHD to provide support without feeling like they were imposing on SRHD. The service delivery demonstration project provided a concrete reason to further develop those relationships, and interviews and calls suggest the partnership is deepening. Having this relationship is a two-way asset, and SRHD has called on Northeast Tri for a mumps investigation and on Adams County for a TB outbreak.

The Advisory Group LHJs reported the benefit to having an alternative to calling DOH with questions. They sometimes observed faster response times for questions fielded by SRHD and received information that is more locally applicable.

CD/EPI RESULTS

As of June 2018

- 4 in-person trainings on general CD/Epi topics
- 4 in-person trainings on Hepatitis-C
- 17 CD/Epi consultation requests
- 5 WDRS web-trainings
- New SharePoint resources (LHJ CD Investigator Manual, Procedures and Guidelines for Notifiable Conditions, Rabies resources, WDRS resources)

On CDC and EPI Support:

"Spokane had a TB outbreak and they called for assistance, and we sent a staff member. It was so helpful because we recently had one too. It was a stretch to send her, but it paid off big time. The relationships she built with Spokane have been invaluable." – *Partner LHJ*

Assessment

Prior to the service delivery demonstration project, in-depth assessment work was not taking place in Adams, Asotin, Garfield, and Whitman counties; this was not due to lack of interest, but rather due to a **lack of funds, time, and data tools.** When assessments did occur, health departments strapped for resources relied on secondary data sources and basic analysis, limiting the value for decision-making. Alternatively, neighboring LHJs might contract with SRHD for a data pull or assessment, but those arrangements did little to build capacity locally.

In contrast, in-depth, comprehensive assessments that would be considered "full implementation" in the *2018 FPHS Assessment* would include more community outreach and primary data collection, pre-test and refined data collections tools, and plans to ensure data quality and analyze data for relationships between variables and disaggregate patterns among subgroups of the population. This deeper analysis could deliver a more nuanced understanding of community needs and more current information, but it is too resource-intensive or requires skills not readily available to the typical small or medium LHJ.

The service delivery demonstration project was an opportunity to put SHRD's Data Center capacity and expertise to use for the Advisory Group LHJs and build capacity. The original plan was to conduct assessments in one county at a time, but for various reasons, the demand among the Advisory Group LHJs was so great that SRHD was soon supporting **five parallel needs assessments**. For example, Lincoln County had not completed an assessment in four years, and the Hospital Association of Ferry County had a grant but no staff to implement it.

While the initial hope was to use one methodology for all counties, SRHD realized that the counties needed different levels and types of supports. The partnering LHJs ranged in size from 14 to 2 employees, with varying resources at their disposal. For example, the hospital district in Pend Oreille just did not have funding but was ready to start the process; Ferry County had a grant but did not know where to start; and Northeast Tri had a strong partner in Rural Resources to assist with survey capacity but needed help developing the tools.

Starting in November of 2017, SRHD and partner LHJs developed ideas tailored to each LHJ or member counties of Northeast Tri. SRHD helped each county establish a group to oversee the process and develop a methodology for evaluation. They conducted spot data runs as necessary and supported the development of tools for data collection and community engagement.

On CDC and EPI Support:

"We really backed out of doing community health assessments years ago, and we really didn't have the skills to do those. Stacy and Steve [on the SRHD team] provided a lot of guidance, good balance using their technical skill set and our local knowledge of our county. I don't know if it could have gone better."
- Partner LHJ

Though the assessments were not yet complete at the time of this report, SRHD staff and the Advisory Group concur that the level of quality in the assessments, utility of the results, and depth of evaluation are expected to surpass what would have happened in absence of this opportunity. Some LHJs felt an assessment might not have happened at all this year without the service delivery demonstration project.

Other qualitative indicators of these improvements include:

- The assessments collected **more and better quality data.** For example, Healthy Ferry County used some of their funds to do extra focus groups. The Colville Tribe was very engaged, resulting in an assessment with more tribal responses than non-tribal, and two meetings were held on Tribal land.
- SRHD staff noted the Advisory Group LHJ staff are demonstrating **more data proficiency** and ability to explain what underlies the data and why data might appear a certain way. They are more engaged with the community and equipped with data to respond to their needs.
- **Early data has been used to make decisions** and produce communications and events.

SRHD is also developing a website for Advisory Group LHJs to pull their own data and reports on important indicators. This County Health Insights website will be customizable for each LHJ.

ASSESSMENT AND DATA CENTER RESULTS

As of June 2018:

- 1 county assessment in start-up phase
- 3 county assessments in data collection and analysis phase
- 2 county assessments in identifying priorities from results phase
- County Health Insights website up
- 4 data presentations to health coalitions
- 2 data requests filled within 3 working days

LESSONS AND LIMITATIONS

Lessons

SRHD staffing. SRHD made a strategic decision in staffing this service delivery demonstration project. Understanding that relationships with partner LHJs were crucial to success, they placed experienced staff on teams working directly with the LHJs part-time while using new resources to hire an FTE to backfill the experienced staff's non-project duties (five people each spend 20% of their time on this project for a total of 1 FTE of effort). With this model, relationships are spread throughout the whole unit so there are more points of contact between SRHD and the other LHJs. This distributed model also supports sustainability of the effort beyond the service delivery demonstration project.

Harmonize, don't standardize. Part of success came from striking the right balance of sharing. While there was an opportunity to align more closely, team members made clear that their goal was not uniformity. The Advisory LHJs know that their communities have different needs reflecting their diversity.

Some examples of alignment include shared access to PHIMS/WDRS to view cases together, the charter document, harmonized public data indicators websites, shared CD/Epi resources on SharePoint, and better on-the-ground understanding from SRHD about the smaller LHJs' populations needs and context. These experiences and assets will help SRHD to provide surge support and set up future collaborations.

Importance of relationships and responsiveness. The service delivery demonstration project had a strong start due to the history of working together as members of the same Health Care Authority (HCA) region. There were established relationships between the partner LHJs and SHRD, in some part because of past Accountable Communities of Health, Youth Marijuana initiative, and disaster preparedness partnerships. Though not formalized, the foundation existed.

Compared to resource providers from DOH or outside of Washington State, SRHD had a reputation for being "less out of touch." They were viewed as more approachable for LHJs that may be intimidated to admit to the State they do not know how to respond to certain conditions or that they have not completed an assessment for several years. Smaller LHJs also tend to see state-level resources as tailored to large populations and less relevant for rural areas.

On lessons learned:

"Washington is a home rule state, [yet] not everyone wants to be doing things differently. There has been a thought in this leadership team, a desire not of creating a requirement, but doing it similar, so we can help each other across county lines."
- Lead LHJ

"Because it is the same people for all these roles at the smaller LHJs, great relationships have developed between our staff and theirs, going back to the HIV network 20 years ago."
- Lead LHJ

Both CD/Epi and Assessment teams emphasized the value of meeting in person to build relationships and understand context. It also provided unanticipated on-the-spot job training opportunities. In addition to in-person meetings, a customer-service orientation and dedicated time at the outset to understand the customers' needs strengthened relationships.

On importance of relationships:

"I went to Adams County to do some in person Hep C training. While I was there, they got an invasive flu case, which is more serious than Hep C. It was great to sit with their CD person and work that through with them."
- SRHD staff

"The good thing for us was that we had two people come down to our office and they interviewed all of our staff who touch CD/epi. That face-to-face time was really important, it empowered my staff to call without checking with me. They know the people at Spokane, they know who to call. – *Advisory Group LHJ*

Limitations

Baseline staff capacity. Staff capacity was a challenge in at least two ways. First, it is extremely difficult for an agency with few staff to find time for training. For example, the only staff member in Whitman who works on CD concentrates that work on Fridays and cannot close services to attend training. SRHD also found that basic epidemiology competencies and data entry and analysis were not at the level they had assumed. Most staff training was informal and on the job. This was compounded with staff turnover (below). LHJs are losing staff with decades of experience that is impossible to replace in a new hire.

Staff turnover. Small outlying LHJs are disproportionately affected by staff turnover from retirement and attrition, and they have more limited talent pools to draw from. They are challenged by a rate of turnover for certain skills; and they often invest in training staff only to lose them to recruiters from larger LHJs that can pay more. Practice areas like CD/Epi that depend on experiential learning make those losses more extreme.

On staff capacity and staff turnover:

"(Other agencies) can't fathom the fact you don't have CD team, you have a CD person. Even trying to set the timing of the webinars was a nightmare, so it's really important that they have made them available online in case you miss them. – *Partner LHJ*

"[SRHD staff] did a two-week training before they interviewed anyone. Is that going to happen at a small LHJ? That's just not going to happen. – *Lead LHJ*

"A public health nurse who has been there for 20 years isn't just a jack of all trades, but a master of all trades. When that person goes, you can't replace that person and even get 70% of that with an experienced person. That's been biggest piece for me is working with the experienced people there, you get an appreciation for what those areas have and what they lost where someone like that retired." – *Lead LHJ*

Transitioning from PHIMS to WDRS was a roadblock for these data-reliant endeavors. In one partner LHJ, over the transition period, six weeks of data was recorded on paper, and they were still catching up at the time of the interview for this Evaluation. The new system "added a lot of bells and whistles" such that two pages form in PHIMS is now four pages in WDRS. While the team anticipates there will be benefits in the long-run, this transition affected the ability of the CD/Epi team to show trends with consistent data.

Funding. Funds did not come through until December 2017, which delayed the start-up of these activities, though planning and needs assessment work happened earlier. SRHD executed subcontracts with each of the participating LHJs for professional development at $6,000, but they were challenged by time to take advantage of the funds. The Advisory Group LHJs were not funded directly for their role in the service delivery demonstration project, which might be a consideration to allow them to play a deeper role in future projects.

LOOK AHEAD

The team is looking forward to the second year of the service delivery demonstration project to continue building momentum. Below are some specifics about the year ahead:

More training development. SRHD focused on developing not just content, but also modes of delivery that will fit the needs of smaller LHJs, work for home rule, and capture the nuances of diseases and issues that do not have a clear-cut "right" answer. SRHD wants to increase attendance and expand opportunities for staff at smaller LHJs to present and lead sessions to create a flatter structure of knowledge sharing.

Data quality improvement. The team is hoping to move past the transition to WDRS and improve data quality so that they can study trends. The underlying infrequency of conditions among smaller LHJs limits data reliability. Additionally, there is no feedback from DOH to people entering notifiable conditions about data quality. A low-stakes, audit-like activity might highlight some areas for data improvement.

Operationalize and assess. The Assessment team is looking forward to completing results by the end of December 2018. The next step is to operationalize the results with program planning in partner LHJs. SRHD's Data Center has typically pulled the data and turned it over without follow-up. Moving forward, the agencies hope to collaboratively engage with results, planning, and setting performance measures. SRHD is also poised to "assess the assessment" with tools to better understand how the data is being used six months later.

The potential scaling of this work could occur in two directions. First, the existing services in CD/Epi and Assessment could be expanded to include additional jurisdictions. Second, current partners could broaden their collaboration to other FPHS.

On scaling up:

"I've certainly thought it would make sense to expand region 9 as it is defined in the (preparedness) response…We're basically covering Region 9 already – we have to drive through a non-participating county to get to a participating one." – *Lead LHJ*

Inclusion of additional jurisdictions has already happened with Asotin joining in Q1 2018 and discussion with Walla Walla. SRHD views Region 9 as a natural geographic scope due to existing relationships, through the assets and services they are creating are not technically limited. They have received interest outside of Region 9 as well; they share (or have shared) to some degree with parties in Kittitas and Grant counties and Idaho and Montana. The primary limits to the CD/Epi work are travel times and costs. The webinars and online resources can be easily shared. Space is also a limiting factor for the Data Center team and they also see limits related to the competition for their services from universities.

According to the Advisory Group, other public health services well suited to expand the current partnership include communications, marketing, and public information, and public policy work. SRHD also mentioned equity as an emerging technical need. Both Advisory Group LHJs and SRHD mentioned that environmental public health is a need that is often contracted out but is difficult to set up as true cross-jurisdictional sharing.

Case: Provider Resources Website

Governmental public health is responsible for providing information on prevention and control of communicable diseases. The system serves as a broker of information between healthcare facilities, providers, veterinarians, and laboratories and the sources of public health resources, expertise, and important population health trends and concerns in the community. Governmental public health also needs to sustain a system for reporting notifiable health conditions that includes informing and educating partners on what and how to report, and streamlining the process to ensure that the community benefits from timely and complete information.

WHAT IS COMMUNICABLE DISEASE?

- In Washington, "communicable disease" is defined as a disease due to a specific infectious agent or its toxic products transmitted from an infected person, animal, or inanimate reservoir to a susceptible host, either directly or indirectly through an intermediate plant or animal host, vector, or the environment *(RCW 16.36.005)*.
- A "notifiable condition" is a disease or condition of public health importance, a case of which, or for certain diseases, a suspected case of which, must be brought to the attention of the local health officer or the state health officer. *(WAC 246-101-010)*

GOVERNMENTAL PUBLIC HEALTH ROLES

The governmental public health system is inextricably linked with healthcare provision. Governmental public health provides information and resources to providers so they can prevent and address public health concerns. Healthcare providers share information about notifiable conditions with the governmental public health system so public health can track conditions and determine if a public health response is needed. The quality of relationships and information exchange between public health and providers is linked to the providers' perception of public health's professionalism and responsiveness.

Some public health agencies communicate with providers through websites. They are accessible 24/7, searchable, responsive to different audiences, and empower the information-seeker to access resources without requiring public health staff time.

PREVIOUS PRACTICE

Every public health agency has the latitude to structure their communication and duties as they see fit, including whether to use a website. Despite potential benefits of moving some communications online, there are several reasons why many LHJs in Washington have been unable to develop web-based resources.

- **Staff expertise.** The expertise required to develop and maintain an online provider resource is not typically available in an agency that must prioritize hiring staff with public health expertise. These skills include website development, information architecture, and content creation to ensure a high-quality user experience and website utilization. It is possible but unlikely that staff with this skill set will also have public health expertise. For smaller LHJs with lower headcounts, it is even less likely that they will have this website technical expertise.
- **Funding.** The funding needed for a website include one-time start-up costs for development and then ongoing maintenance costs. A given LHJ may not have access to one-time funds necessary to

support start-up costs.

- **Technology.** Developing and maintaining a website requires investment in technology and licenses. At a minimum, the agency needs access to a domain along with hosting and web development software.
- **County and LHJ organizational structure.** LHJs' online presence is not always entirely within their control. Their web pages are often administered and hosted by the county government. Content may need to adhere to the style and structure of the "parent" county site, and the technical skills and administrative privileges necessary to make improvements may not be available to the health department.
- **Availability of current and high-quality provider resources.** The effectiveness of a website, when it is feasible to create, is contingent on the ability to maintain current and high-quality provider resources. Individual LHJs typically do not have the capacity to develop and/or source these materials comprehensively. A more likely case would be that they link to material from DOH and national public health resources, such as the Centers for Disease Control and Prevention.
- **Competing priorities and limited LHJ resources** mean that LHJs need to prioritize the most urgent public health concerns with staff attention and funds.

Under these common constraints, previous practice for sharing information between the LHJs and healthcare providers varied.

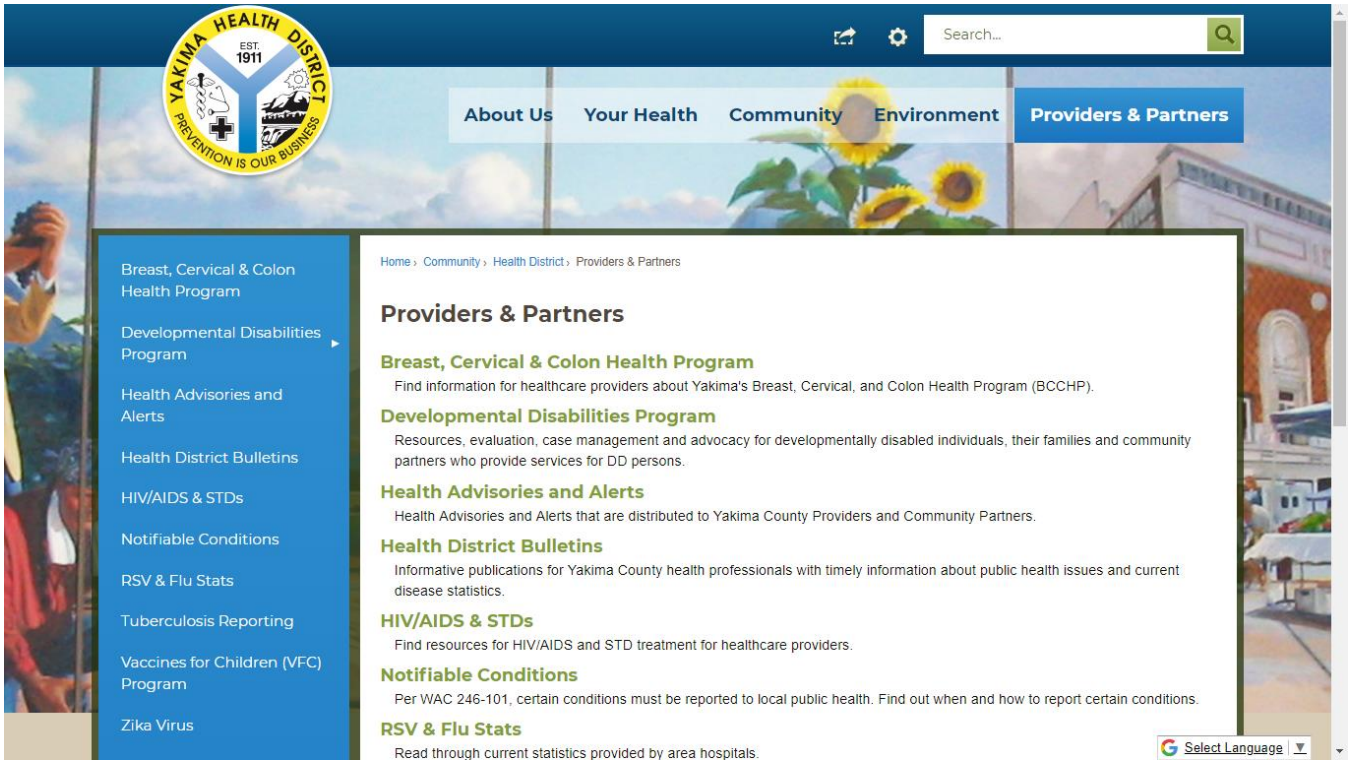
- *In Pierce County*, **Tacoma-Pierce County Health Department (TPCHD)** updated a physical Disease Reporting and Resources binder at the start of each year to give healthcare providers the latest public health information. This binder was photocopied and distributed to providers throughout Pierce County during a site visit. A few years ago, the binder content was made available online in a searchable PDF format, still coupled with annual site visits. TPCHD also has public health nurses and consultants available to answer provider questions on demand. An internal quality improvement study found potential cost savings and quality improvements from replacing the time spent producing and disseminating the binder with an online provider resources site. TPCHD knew they were not the only LHJ that could benefit from such a website and proposed expanding their provider resources websites to meet the needs in Cowlitz and Yakima counties as a service delivery demonstration project.
- *In Yakima County,* **Yakima Health District** used faxes and emails to disseminate information and advisories to providers. Yakima Health District had used the "blast fax" or "broadcast fax" to send multiple copies of a fax simultaneously to multiple recipient fax numbers. Blast faxes could land in the same pile as faxed patient records and lab results in a medical office, along with the fax equivalent of spam. "Providers get so many faxes in one day; we have no idea how effective that was, or if anyone was reading them."

  Yakima Health District also used email lists to disseminate information. However, the email list depended on scarce staff time to update provider contact information. The resulting email list was likely not comprehensive; it was easier to delete invalid addresses and bounce-backs than to actively reach out to providers and collect new contact information.

  Neither the blast fax nor the emails provided any feedback mechanism for the County to

understand whether and which information reached intended audiences. Yakima County had an existing website for health and human services, but resources specifically for health professionals looking for information and resources on communicable disease were presented as secondary to resources for a broader public.

Exhibit 10 Existing Yakima Health District Provider Resources, accessed September 2018



Source: https://www.yakimacounty.us/279/Providers-Partners

- ***Cowlitz Health & Human Services*** had a provider resources section within the Communicable Disease Prevention & Control section of their website that included Communicable Disease Reporting and Resources, Provider Communications, Influenza Updates, Sexually Transmitted Infections & HIV/AIDS, Animal Bites, Mumps Information, and Zika Information. The information lived within the County's website covering the full scope of government services, not just Health and Human Services.

  Like Yakima County, they described provider resource and information delivery as "pretty much a little of everything – emails and calls; emailing hyperlinks, usually to DOH; faxing; STD and HIV case report forms available on our website." Providers call the health department and connect with one of four public health nurses if they are seeking information that is not readily available on the website. The nurses then look up the information while on the phone or refer the caller to resources. The department fields two to ten calls a day from providers, with additional calls from schools and long-term care facilities. The department noticed that they were repeatedly asked for the same information from clinics.

Exhibit 11 Existing Cowlitz Health and Human Service Provider Resources, accessed September 2018

Source: http://www.co.cowlitz.wa.us/index.aspx?NID=1118

OPPORTUNITY FOR NEW DELIVERY MODEL

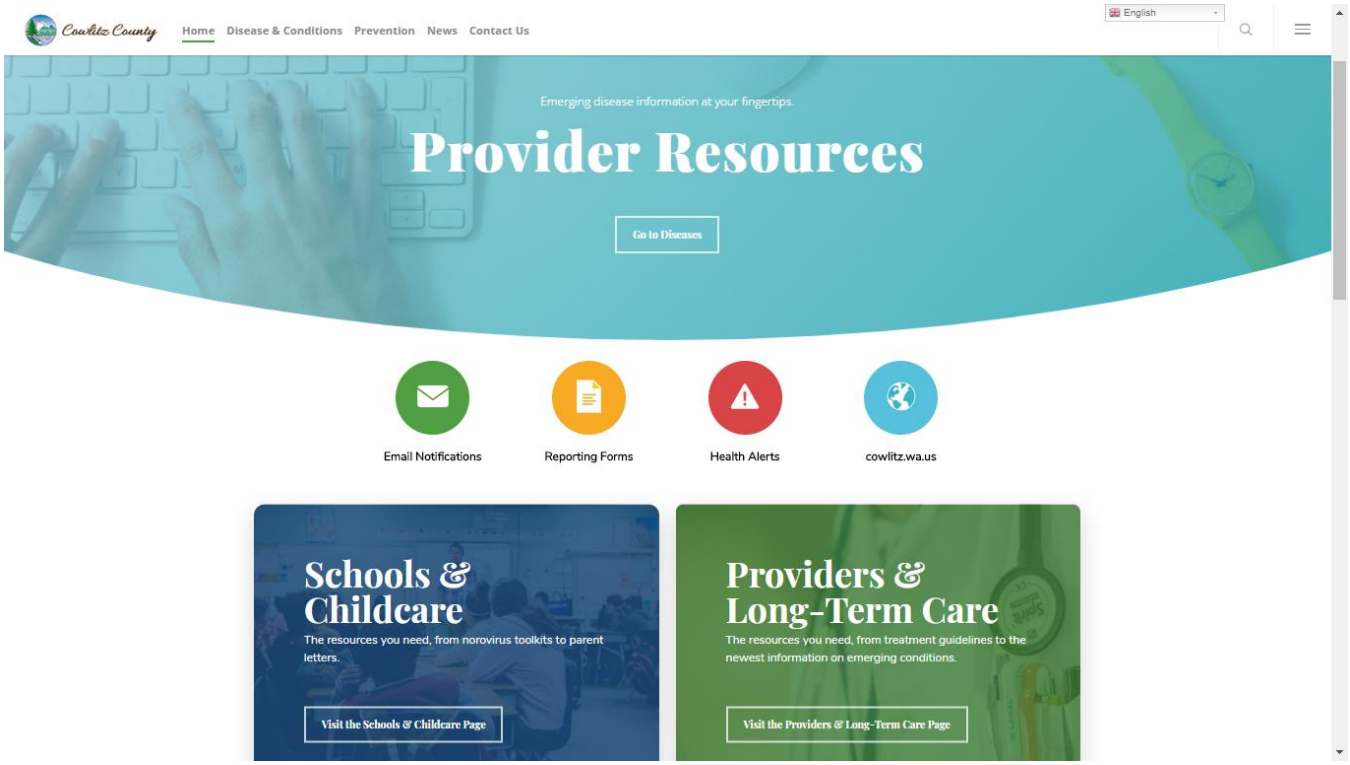
Through the service delivery demonstration project, TPCHD created a Providers Resources website aimed at health professionals and schools. TPCHD developed the Providers Resources website to be a repository of stable resources such as forms, diagnosis guidelines, and toolkits along with timely information such as health advisories and alerts. It replaced the physical and the online PDF binders. With the service delivery demonstration project, TPCHD is now providing a hosted website to partner LHJs Cowlitz County Health and Human Services and Yakima Health District. Much of the Providers Resources website content is applicable to all health jurisdictions in Washington (for example diagnosis guidelines) and can be updated centrally and pushed out to partner agency sites. Cowlitz and Yakima can also tailor and update some of the content.

PRELIMINARY RESULTS

During the first year of the service delivery demonstration project, it moved from an idea to the website launch. This progress required clarifying roles and responsibilities within TPCHD, especially between their Communicable Disease Program and their Communications Team. TPCHD also engaged Cowlitz and Yakima counties on the project, identifying their priorities and concerns, and engaging them on site customization to include local branding and content. A key conversation was the process of delineating **universal content** centrally developed at TPCHD from **localized content.** The delivery system needed to address both without confusing users. Start-up tasks also included backend work to revert a copy of the existing TPCHD site to a neutral, foundational version ready to be customized and deployed for other LHJs. The original site was not developed with these derivative uses in mind.

In August 2018, the TPCHD team traveled to Cowlitz and Yakima counties to provide in-person training on the website prior to launch. At the time of writing, the new Cowlitz site has launched and is discussed below; a screen capture of the launch version of the site is in Exhibit 12.

Exhibit 12 New Cowlitz County Provider Resources Site, accessed September 2018



Source: http://cchhsproviderresources.org

The design of the new site is centered around the needs of providers and other users. As an example, rather than listing pages alphabetically by topic, links are elevated according to how frequently and or urgently providers would want access. The website prioritizes notifications, forms, and alerts. It includes resources that are pushed from a central infrastructure (TPCHD) alongside local content added from Cowlitz staff; the user does not see a difference in the interface.

On the website:

"The new site is very nice and modern, and full of graphics, and our current website is "old school," for lack of a better term...The [new] website also better defines the target audience, separating the provider and the layperson, whereas our current site is for anyone who wants to look at it." – *Partner LHJ*

While the new Cowlitz and Yakima sites are too new to evaluate usage data, TPCHD described changes observed from their own transition. Staff described how they can now deliver information and resources while on the phone at the time of first contact with an inquiry. In the past, they needed to look information up and return the call. They feel they can accomplish more with limited resources and have improved the professional "face" of the organization. This leads to higher user accessibility and better relationships with organizations that need to report notifiable conditions including healthcare providers, schools, state agencies, and long-term care facilities.

On the website:

We received a call at 2pm from the large DSHS office in Lakewood needed training materials right now because they are treating people with lice, scabies, MRSA. Directed them immediately to fact sheets, brochures, saying "you can use all these tools." I was able to deliver immediately…they reached us really quickly and now we have a relationship." – *TPCHD staff*

There is a TB nurse …who, in less than 60 seconds, got a provider all the way to the resources for screening and testing while they had the patient with them in the office. And she is traditionally a paper person!" – *TPCHD staff*

By connecting the caller directly to the website and working through a query together, the health department can encourage users to be less dependent on calling the department in the future. This allows the department to shift resources from responding to calls to other duties, including proactive health promotion. This also builds a valuable relationship and reputation in the community as modern and responsive.

Yakima and Cowlitz are also optimistic that the Provider Resources websites will decrease the volume of calls, allowing them to shift resources, while making the department more responsive and helpful to the provider community. They also anticipate that important information is more likely to reach providers, compared to current methods of communication.

The LHJs anticipate that with the Provider Resources websites harmonized and by using the same web development technology, there will be a platform and more opportunities for LHJs to share resources with each other. For example, oral health resources developed in Yakima can be posted and easily shared to Cowlitz and Tacoma-Pierce County via the website. This type of sharing has the advantage of being more relevant to LHJs populations like Yakima, as opposed to using statewide or national resources.

On the website:

"The new site is very nice and modern, and full of graphics, and our current website is "old school," for lack of a better term...The [new] website also better defines the target audience, separating the provider and the layperson, whereas our current site is for anyone who wants to look at it." – *Partner LHJ*

"This website will be a stable place for the information and allow providers to subscribe. Once people know that there is a stable place for that information, I believe this website going to be 1000% better than what we were doing before." – *Partner LHJ*

LESSONS AND LIMITATIONS

Staff turnover. In Cowlitz County, the project manager started in May 2018 after the previous manager retired. At TPCHD, the main web developer point-of-contact left for another job. Disruptions in these crucial roles disrupted progress as new relationships had to be built, and the workplan adapted for different skill sets.

Staff turnover affects many public health agencies across the state. Project planning and documentation can help mitigate this challenge, as will involving staff beyond the primary point-of-contact to create redundancy and organization-wide familiarity with the project. Service delivery models can help or hinder this issue. For example, if a service is managed outside of an agency with high turnover, then they can expect service continuity through the changes. On the other hand, turnover at an agency providing the service may now affect more than one agency.

Organizational structure. At TPCHD, the website project did not fit neatly into a single existing team's defined role and involved Communicable Disease, Communication, and Information Technology staff. TPCHD needed to resolve questions around who does what and create new processes before the project could get fully underway. Ultimately, the website team involved staff from multiple departments and created new working relationships. Over several meetings, they developed a better sense of questions to ask and the ability to foresee issues that made them better prepared to engage partner agencies.

- LHJ size affects the extent of the challenge. Both smaller LHJs, Cowlitz and Yakima, reported that "Who owns what?" type questions were less of a concern. This is partially because with smaller staff, relevant capacities may reside in one person. For example, in Yakima County, the Director of Public Health Partnerships is also the Public Information Officer, and this setup simplified questions about roles.

Level of collaboration. TPCHD staff noted that collaboration was not as deep as they initially expected. While both partnerships were highly communicative and appreciative, they expected partner LHJs to have a stronger point-of-view on the website design and process. This dynamic may have emerged for at least three reasons:

- First, partner agencies were not funded to participate in the service delivery demonstration project. They were happy to participate without compensation because they received a new asset and capacity-building at no-cost. More in-depth contribution might have been possible with dedicated time and funding for partner agencies.
- Second, as described above, staff turnover at all three involved LHJs interrupted progress and the level of collaboration possible.
- Third, partner agencies may have found it challenging to contribute more to the design without clear parameters about what was possible. A menu of options, example websites, or an understanding of the overall development process could have facilitated greater collaboration.

Partner agencies recognized the need to put in the time to get the most out of the process.

On lessons learned:

"To get the most out of the process, take some time to think about the gaps in your communications with your provider community so you can communicate those gaps to Tacoma. – *Partner LHJ*

LOOK AHEAD

Over 2018-19, the partnership will focus on roll-out of and communications on the websites. TPCHD is helping with that work, which is beyond their scope as laid out in the service delivery demonstration project. Provider capacity to use the website is a concern for both partner LHJs, though they are confident most health providers will find the website to be a vast improvement.

Both partner LHJs see the roll-out as an opportunity to check-in at a large scale with providers on communicable disease. They can refresh or build new provider relationships that may have been inactive over the past years without a user-friendly website.

Looking ahead:

"We have a wide variety of providers. Some are hip and up to date. Others still use paper charting…This info may be challenging for them to access." – *Partner LHJ*

"It's a great opportunity to highlight strengths that different LHJs have; Tacoma has a great website and it doesn't make sense for us to recreate it. Not reworking something that's already been done and going well" – *Partner LHJ*

Plans for funding site maintenance and archiving costs and needs are still to be determined. The partnership is collecting data and tracking the needs to get a better understanding of the requirements. They are looking forward to having data about the site use, page-level views, and clicks to begin to tailor resources better.

The partnership also plans to assess trends in call volume, though quantitative data collection will be a challenge. Another challenge is that there is strong seasonality to calls that may require multiple years of tracking. For example, rabies calls spike in the summer.

References

BERK Consulting, *Washington State Public Health Transformation Assessment,* 2018. Available at: https://www.doh.wa.gov/Portals/1/Documents/1200/WA%20PH%20Transformation%20Assessment%20Report%202018_0917.pdf?ver=2018-09-25-102331-953

BERK Consulting, Washington Foundational Public Health Services Functional Definitions Manual Functional Summary Definitions Version 1.3, November 2017. Available at: https://www.doh.wa.gov/Portals/1/Documents/1200/WA%20FPHS%20Functional%20Definitions%20Manual%2011-17.pdf

Concerning foundational public health services, BILL REQ. #: Z-0126.2/19 2nd draft, State of Washington. Available at: https://www.doh.wa.gov/Portals/1/Documents/9220/FPHS.pdf

Shared Service Demonstration Project Reports - Year 1 - 2018-08-20

Washington State Department of Health, Washington State Association of Public Health Officials, and the State Board of Health, 2016, *A Plan to Rebuild and Modernize Washington's Public Health System*. Available at: https://www.doh.wa.gov/Portals/1/Documents/1200/FPHS-PublicHealthModernizationPlan2016.pdf

Interview Sources

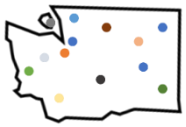
The study team interviewed the following individuals for this project:

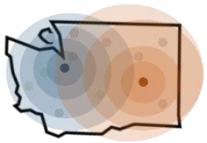
- Adriene Miller, Health Services Administrator, Public Health-Seattle & King County
- Amber Atkinson, MPH, Communicable Disease Investigation Specialist, Skagit County Public Health and Community Services
- Anna Halloran, Epidemiologist, Spokane Regional Health District
- Ann Lund, Public Health Nurse TB Control, Whatcom County Health Department
- Brady Woodbury, MPH, Health District Administrator, Asotin County Health Department
- Carol McCormick, MSN, Nursing Director/Personal Health Associate Administrator, Chelan-Douglas Health District
- Cathy Smith, ARNP/Communicable Disease Lead, Skagit County Public Health and Community Services
- Deanna Scott, Media Specialist, Tacoma-Pierce County Health Department
- Bob Lutz MD, MPH, Health Officer, Spokane Regional Health District
- Greg Stern MD, Health Officer, Whatcom County Health Department
- Masa Narita MD, TB Control Officer, Public Health-Seattle & King County
- Ed Dzedzy, Public Health Administrator and Registered Sanitarian, Lincoln County Health Department
- Emily Less, Health Promotion Coordinator, Tacoma-Pierce County Health Department
- Gay Jackson-Albee, Public Health Nurse, Chelan-Douglas Health District

- Karen Potts, Personal Health Director, Adams County Health Department
- Katelynne Gardner-Toren, Epidemiologist, Public Health-Seattle & King County
- Katie Dickeson, RN, TB Program Coordinator, Spokane Regional Health District
- Kayla Scrivner, MPA, Program Manager on Communicable Disease Control, Tacoma-Pierce County Health Department
- Lilian Bravo, MPH, Director of Public Health Partnerships, Yakima Health District
- Mark Springer, Epidemiologist, Spokane Regional Health District
- Matt Schanz, Health District Administrator, Northeast Tri County Health District
- Michelle Ashby, Community Health Manager, Cowlitz County Health & Human Services Departments
- Nancy Poulin, TB Program Supervisor, Whatcom County Health Department
- Sarah Mollenkopf, Epidemiologist, Public Health-Seattle & King County
- Stacy Wenzl, MA, Data Center Program Manager, Spokane Regional Health District
- Stephanie Dunkel, Assistant Division Director for Communicable Disease, Tacoma-Pierce County Health Department
- Steven Smith, Data Center Research Scientist, Spokane Regional Health District
- Susan Sjoberg, Epidemiology Program Manager, Spokane Regional Health District

Appendix

CHARACTERISTICS AND EXAMPLES OF SERVICE DELIVERY MODELS



Local solely responsible	**Mutual aid/interlocal agreements/contracting**	**Hub and spoke model**	**Center of excellence**	**Combination**	**Centralized**
Each LHJ is independently responsible for all foundational public health services to Washingtonians in their jurisdiction.	LHJs organically contract for services from other LHJs, pool funds to buy services from a provider, or enter a mutual cooperative agreement to maintain a level of service.	Service and administrative capacity is systematically concentrated at hub LHJs. Services are delivered through the network of spoke LHJs.	One or two centers for excellence maintain deep expertise in a service and are available to the entire state or a large region.	Jurisdictions combine programs to provide services to a larger region.	One entity in the state is responsible for providing foundational public health services to all Washingtonians.
▪ Maximizes local knowledge ▪ Variable quality and standards of service across the state ▪ Smaller LHJs disadvantaged by, difficulty hiring and maintaining staff and expertise, costly per capita coverage, professional isolation	▪ Responsive to demand ▪ Dependent on personal relationships ▪ Agency adopting the mode of delivery for another agency (Not typically co-planned between agencies) ▪ Vulnerable to changes in personnel and elected officials and failure to negotiate mutually agreeable terms ▪ Expensive and time-consuming to negotiate	▪ Efficiencies of scale in administration and other hub functions ▪ Provides natural venues for standardization and information sharing ▪ Creates relationships between institutions	▪ Similar advantages as hub and spoke, but less formal ▪ Develops capacity that can be responsive to surge demand ▪ Areas may be left out due to informality and as-needed structure	▪ Pools resources while retaining regional-level local control ▪ Rural areas will face the same hiring and resource issues as full local control ▪ Vulnerable to changes in personnel and elected officials	▪ Fewer redundancies ▪ Able to attract and retain specialized personnel ▪ Less aware of and responsive to local needs

On-site sewage system (OSS) inspections and solid waste enforcement activities will vary by jurisdiction depending on the prevalence of on-site sewage systems and local codes. The community partnerships and planning capability is best served at the local level.	Clallam County contracts Kitsap Public Health epidemiologists to develop regular communicable disease reports and data dashboards at a rate of $69/hour. Skamania and Yakima have the same Health Officer who is also the deputy health officer in Clark County. Lewis and Thurston Counties also share a Health Officer.	State-funded Disease Investigation Specialists are embedded in five LHJ locations in Washington and they serve outlying LHJs in STD response. **Provider Resources Website**	**In the TB Control Demonstration Project, Public Health –** Seattle &King County's expertise in tuberculosis is available state-wide through an online consultative program, to help LHJs assess and treat cases. **Communicable Disease, Epidemiology and Assessment**	Lewis and Thurston counties have combined their Nurse-Family Partnership programs into a joint team to make home visits to low-income, first-time mothers in the combined region. Diamond Project Accountable Communities of Health Healthcare Coalitions	DOH centrally manages state-wide data systems and surveillance related to public health including the Behavioral Risk Factor Surveillance System and the Washington Disease Reporting System (former Public Health Information Management System)

Note: Models are not presented in any order. FPHS seeks delivery models that are a best fit for the service in question.
Source: BERK, 2018

ACTIVITY-LEVEL CROSSWALK OF DEMONSTRATION PROJECTS WITH FPHS

Foundational Program or Capability	Element	Activities		
		PROVIDER RESOURCES WEBSITE	**CD/EPI and ASSESSMENT**	**TB CONTROL**
Prevention and Control of Communicable Disease and Other Notifiable Conditions	Provide Information on Prevention and Control of Communicable Diseases	e. Analyze, interpret and share communicable disease, other notifiable conditions and immunization data, including data pertaining to inequities. g. Ensure healthcare facilities, healthcare providers, veterinarians and laboratories are educated about notifiable conditions requirements including the need for timely and accurate reporting and how to report. i. Produce and share periodic/routine reports of communicable disease and other notifiable conditions and immunization rates. k. Provide the public, regulated facilities, healthcare facilities, healthcare providers and stakeholder organizations effective and timely communication about protection recommendations for communicable disease and other notifiable conditions while balancing the need to protect personal health information.	a. Collect and maintain communicable disease, other notifiable conditions and immunization data to support prevention and control of communicable diseases and other notifiable conditions at the state and local level. e. Analyze, interpret and share communicable disease, other notifiable conditions and immunization data, including data pertaining to inequities. f. Measure the impact of communicable disease and other notifiable conditions and immunization rates on the health of the public, including priority populations. h. Maintain capacity to prioritize and respond to data requests and as appropriate, prepare data files to share and make available to researchers and other stakeholders. i. Produce and share periodic/routine reports of communicable disease and other notifiable conditions and immunization rates. j. Inform decision makers of potential and actual impacts to public health based on communicable disease and other notifiable conditions data, immunization rates and published reports. m. Fulfill future data needs using multiple methods and sources for data collection, analysis and presentation using evolving technology with near real-time data displayed using visualization tools and GIS to meet user's requests.	e. Analyze, interpret and share communicable disease, other notifiable conditions and immunization data, including data pertaining to inequities.
	Ensure Disease Surveillance, Investigation and Control	f. Develop and maintain a system/process to communicate rapidly with healthcare providers during public health emergencies. q. Provide education to and coordinate with healthcare providers to ensure appropriate screening, reporting and treatment of TB.	h. Provide consultation and technical assistance to other local and state agencies and the general public. Provide disease-specific and technical expertise regarding epidemiologic and clinical characteristics of diseases of public health significance to healthcare professionals, veterinarians, and others. Advise healthcare practitioners about evidence-based practices for communicable disease and other notifiable conditions diagnosis, treatment, control and prevention. j. Monitor occurrence and distinguishing characteristics and trends of communicable diseases and other notifiable conditions to identify outbreaks and other emerging events (e.g. disease clusters, source and geographical region). m. Maintain a tracking log of all case reports and investigations. p. Maintain adequate expertise and resources to ensure the identification and appropriate treatment of individuals who have latent tuberculosis (TB)	h. Provide consultation and technical assistance to other local and state agencies and the general public. Provide disease-specific and technical expertise regarding epidemiologic and clinical characteristics of diseases of public health significance to healthcare professionals, veterinarians, and others. Advise healthcare practitioners about evidence-based practices for communicable disease and other notifiable conditions diagnosis, treatment, control and prevention. j. Monitor occurrence and distinguishing characteristics and trends of communicable diseases and other notifiable conditions to identify outbreaks and other emerging events (e.g. disease clusters, source and geographical region). k. Conduct or assist with outbreak investigations that have a communicable disease or other notifiable condition component. Maintain outbreak response and control protocols, including accessing resources and assistance after normal work hours.

Foundational Program or Capability	Element	Activities		
		PROVIDER RESOURCES WEBSITE	CD/EPI and ASSESSMENT	TB CONTROL
			infection and active tuberculosis, including the provision of directly-observed therapy for active TB according to CDC guidelines. q. Provide education to and coordinate with healthcare providers to ensure appropriate screening, reporting and treatment of TB.	q. Provide education to and coordinate with healthcare providers to ensure appropriate screening, reporting and treatment of TB. r. Maintain the ability to identify and provide education for a community provider willing to treat latent TB. s. Conduct timely contact investigation for all active pulmonary TB cases per state guidelines. u. Maintain access to consultation with a public health physician with experience in diagnosis and treatment of TB as well as contact investigations.
Assessment (Surveillance and Epidemiology)	Access, Analyze, Use, and Interpret Data		b. Analyze data, prepare and publish standardized reports and report on specific topics as needed. Assure accuracy of data and interpretation. c. Produce summaries on key indicators of community health, which include information about social determinants of health. d. Provide and use the results of health data analysis (including inequities) to develop culturally appropriate recommendations regarding public health policies, processes, programs or interventions. e. Facilitate the sharing of data, resources and expertise through partnerships and relationships. g. Assist agency leadership with identification of health priorities and policies based on data analysis, scientific literature, best practices and promising practices.	
	Conduct Assessment and Identify Health Priorities		b. Conduct a local and/or regional comprehensive community health assessment (CHA) every three to five years in conjunction with community partners. d. Develop a local and/or regional community health improvement plan (CHIP) in conjunction with community partners.	