Summary of Technical Workgroup Findings and Approach

Key Findings

Over the last two years, the Technical Workgroup has developed a process and methodology to estimate how much it would cost to provide the foundational public health services (FPHS), how much is currently spent on FPHS, and the gap between the cost to provide FPHS (FPHS Cost Estimate) and the current spending on FPHS (FPHS Current Spending Estimate). Exhibit 1 summarizes the results of the Technical Workgroup's efforts. Additional methodology information is described beginning on page 2.

Exhibit 1

FPHS Cost Estimate, Current Spending Estimate, and Estimated Gap by Program (2013 $)

Program	Service Delivery	(1) FPHS Cost Estimate	− (2) FPHS Current Spending Estimate	= (3) Preliminary FPHS Gap	+ (4) FPHS Gap Adjustments (a) Exclude LHJs without gaps	(b) Exclude Inappropriate Revenue	= (5) Estimated FPHS Gap
Foundational Capabilities	DOH	$ 27.8 M	$ 26.2 M	$ 1.6 M	-	$ 0.0 M	$ 1.6 M
	LHJs	$ 47.9 M	$ 36.3 M	$ 11.6 M	$ 1.6 M	$ 1.9 M	$ 15.1 M
Environmental Public Health	DOH	$ 35.2 M	$ 30.3 M	$ 4.9 M	-	$ 0.0 M	$ 4.9 M
	LHJs	$ 69.5 M	$ 64.6 M	$ 4.8 M	$ 7.8 M	$ 0.0 M	$ 12.6 M
Communicable Disease	DOH	$ 9.0 M	$ 5.0 M	$ 4.0 M	-	$ 0.0 M	$ 4.0 M
	LHJs	$ 24.8 M	$ 19.4 M	$ 5.4 M	$ 0.9 M	$ 0.8 M	$ 7.1 M
Chronic Disease & Injury Prev.	DOH	$ 27.9 M	$ 8.7 M	$ 19.2 M	-	$ 0.0 M	$ 19.2 M
	LHJs	$ 40.3 M	$ 6.8 M	$ 33.4 M	$ 0.0 M	$ 0.0 M	$ 33.4 M
Access/Linkage to Clinical Health Care[6]	DOH	$ 62.1 M	$ 62.1 M	$ 0.0 M	-	$ 0.0 M	$ 0.0 M
	LHJs	$ 3.4 M	$ 0.0 M	$ 3.4 M	$ 0.0 M	$ 0.0 M	$ 3.4 M
Maternal/ Child/ Family Health	DOH	$ 13.8 M	$ 9.0 M	$ 4.7 M	-	$ 0.0 M	$ 4.7 M
	LHJs	$ 11.4 M	$ 9.4 M	$ 2.0 M	$ 2.0 M	$ 2.1 M	$ 6.0 M
Vital Records	DOH	$ 3.6 M	$ 3.6 M	$ 0.0 M	-	$ 0.0 M	$ 0.0 M
	LHJs	$ 3.5 M	$ 4.4 M	($ 0.9 M)	$ 1.2 M	$ 0.0 M	$ 0.3 M
Laboratory[7]	DOH	-	$ 12.6 M	($ 12.6 M)	-	$ 0.0 M	($ 12.6 M)
	LHJs	-	-	-	-	-	-
DOH Total		$ 179.4 M	$ 157.6 M	$ 21.8 M	$ 0.0 M	$ 0.0 M	$ 21.8 M
LHJ Total		$ 200.8 M	$ 141.0 M	$ 59.8 M	$ 13.4 M	$ 4.8 M	$ 78.0 M
Total Statewide		**$ 380.2 M**	**$ 298.5 M**	**$ 81.6 M**	**$ 13.4 M**	**$ 4.8 M**	**$ 99.9 M**

Source: Washington State Department of Health, 2013; Sample data from 9 LHJs, 2013; State Auditor's Office Budget Accounting Reporting System (BARS), 2013; and BERK, 2014.

Notes: [6] The estimates for this program are still being refined due to emerging issues primarily related to the implementation of the Affordable Care Act (ACA). These estimates may change as a result of continuing work.

[7] Funding data for DOH's laboratory was provided independently from cost information. On the cost side, laboratory is included within the programs that the lab supports. However, current spending and revenues for the DOH laboratory are all included in the laboratory line item. The total gap for DOH is the sum of the gap within each program and the $12.6 M listed as laboratory revenue. LHJ lab data are included in relevant program areas.

(1) FPHS Cost Estimate. The estimated cost to provide FPHS is $380.2 M per year. About 47% (or $179.4 M) would be DOH responsibility, and about 53% (or $200.8 M) would be the responsibility of LHJs.

(2) FPHS Current Spending Estimate. Annual current spending on FPHS is about $298.5 M. About 53% (or $157.6 M) is spent by DOH, and about 47% (or $141 M) is spent by the LHJs. This spending represents only a portion of total statewide spending on public health. Combined, spending on FPHS and Additional Important Services (AIS) totals about $860.5 M per year for DOH and the LHJs.

(5) Estimated FPHS Gap. This column shows the estimated amount needed, in addition to current spending, to support provision of FPHS (as defined) statewide. The Estimated FPHS Gap is $99.9 M. For DOH, the Estimated FPHS Gap is about $21.8 M. For LHJs, it is about $78.0 M. *It's important to note that the Estimated FPHS Gap is not simply the difference between the Cost Estimate and the Current Spending Estimate.*

Summary of Methodology

These estimates were developed with careful consideration by the Technical Workgroup, with consultant support. By necessity, the cost and spending analyses were conducted using different data and different methodologies. The following table summarizes the approaches used, and highlights key data limitations. For more detail, see the detailed methodology beginning on page 4.

FPHS Cost Estimate	FPHS Current Spending Estimate	Estimated FPHS Gap
The FPHS Cost Estimate is how much it would take to adequately support provision of foundational public health services statewide.	*The FPHS Current Spending Estimate is the amount currently being spent on providing foundational public health services statewide.*	*The Estimated FPHS Gap is the difference between current spending on foundational services and the cost to provide the foundational public health services statewide.*
Approach for DOH • FPHS Cost Estimate provided by DOH after working through a zero-based budget-like process with each affected division.	Approach for DOH • FPHS Current Spending Estimate provided by DOH, by analyzing current budget and expenditure data.	Approach for DOH • The Estimated FPHS Gap is the difference between the FPHS Cost Estimate and the FPHS Current Spending Estimate for DOH.
Approach for LHJs • Worked with 9 LHJs to develop thorough cost estimates of what it would take to provide FPHS as defined. • Developed cost factors based on the LHJ sample estimates and underlying drivers of cost (e.g. population, disease rates). • Using a flexible cost model, applied these factors to generate cost estimates for all 35 LHJs, which were then summed together to estimate statewide costs. • Refined estimates using factors to account for differences in labor rates, LHJ size, economies of scale, and fixed and variable costs.	Approach for LHJs • To the extent possible, categorized BARS codes into foundational categories. (Note: BARS codes are not aligned well with the current FPHS definition). • For the 9 LHJs that provided detailed cost estimates, compared spending in the FPHS BARS categories to sample cost estimates by foundational category. • Based on this comparison, developed percentages of each FPHS BARS category that likely reflected the share of that category that was spent on foundational services. • Applied these percentages to BARS spending for all 35 LHJs, based on LHJ size.	Approach for LHJs • The difference between the Cost Estimate and the Current Spending Estimate was calculated for each LHJ for each program. • All of the deficits (i.e., instances where the Cost Estimate was higher than the Current Spending Estimate) were added together to create a total for all 35 LHJs. • If the Cost Estimate was lower than the Current Spending Estimate for an individual LHJ, that additional spending was not included in estimating the gap. Since LHJs without gaps were excluded, the aggregate gap increased by the adjustments listed in column (4a) of Exhibit 1. • Revenues sources that were determined to be inappropriate to fund FPHS were excluded, which increased the gap by the adjustments listed in column (4b) of Exhibit 1.

FPHS Cost Estimate	FPHS Current Spending Estimate	Estimated FPHS Gap
Key Data Limitations DOH • The estimate is based on judgment of key program staff. LHJs • 9 sample LHJs were used to estimate costs for all 35 LHJs. These 9 LHJs were assumed to be a representative sample of all LHJs statewide. • The model takes into account some variations across LHJs, such as population served, but does not account for all variances (such as governance structure or delivery models). • Given these limitations: the statewide estimate for LHJs is reasonable and likely in the correct range. However, estimates may not reflect potential cost implications for individual LHJs.	**Key Data Limitations** DOH • Given that DOH's budget structure is not aligned with FPHS definitions, some judgment calls were made to categorize spending into the FPHS definition. LHJs • BARS was used as a consistent data source across LHJs. • LHJs have some discretion over how to categorize expenditures in BARS, and some types of spending are categorized inconsistently between LHJs. • BARS codes don't align perfectly with FPHS definitions, so judgment calls were made to categorize spending into FPHS categories and to assign costs between FPHS and AIS.	**Key Data Limitations** DOH • The same challenges that limit the accuracy of the Cost Estimate and the Current Spending Estimate limit the accuracy of the Estimated Gap. LHJs • The same challenges underlying the Cost Estimate and the Current Spending Estimate for LHJs flow into the accuracy of the Estimated Gap.

Detailed Methodology

FPHS Cost Estimate

Estimating DOH Costs

Source: Washington State Department of Health

1. **DOH provided direct estimates of the cost** of fully providing each of the foundational public health services.

Estimating LHJ Costs

Source: Nine sample jurisdictions (Chelan-Douglas, Clark, Grant, Lincoln, NE Tri, PHSKC, Spokane, Walla Walla, and Whatcom)

1. **Gather Sample Estimates.** BERK gathered sample cost estimates of what it would take to fully provide foundational services from nine jurisdictions through a combination of data requests and phone interviews. The nine jurisdictions represented a cross section of LHJ sizes, geographies, and governance structures.
2. **Scale Sample Estimates Statewide.** The primary tool for creating the LHJ statewide cost estimate was a flexible, assumption-driven financial model. The basic steps of the model are described below.
    a. **Translate sample data into per-unit cost factors for direct service costs.** The sample costs provided were scaled to the magnitude of identified cost drivers in each LHJ's service area (e.g. population, rates of tuberculosis infection, number of restaurants) to create a cost factor for each service that was based on the number of driver units within the jurisdiction. The resulting cost factors describe the relationship between direct service costs and specific cost drivers. The model also provided the ability to develop cost factors based on specified groupings of LHJs, or for all LHJs in aggregate.
    b. **Apply overhead and indirect rates.** Factors, structured as a percentage cost increase applied to direct service costs, were developed for overhead and indirect costs that allow for appropriate scaling of the direct service costs up to a total cost of service. These factors were designed to capture the relevant costs associated with doing business, such as rent, facility maintenance, and administration.
    c. **Apply elasticity factors to account for economies of scale.** The model provided the ability to apply an elasticity percentage to each service's cost factor to control how costs scaled across the LHJs. Elasticity assumptions allow the model to define what portion of costs are "variable" (i.e., changing with the underlying cost driver) and what portion of costs are "fixed" (i.e. remain stable for all types of organizations).
    d. **Scale per-unit costs to all jurisdictions statewide.** The model used the three inputs developed above (direct service cost factors, overhead and indirect percentages, and elasticity assumptions) to create an estimate for every LHJ in the State. These individualized estimates include the number of FTEs and the costs for direct service and indirect and overhead needs for each element of the foundational services. Costs were scaled based on the magnitude of the chosen cost drivers at each jurisdiction. Cost factors could be applied to all LHJs or subsets of LHJs based on specified groupings. These groupings helped address variances in LHJs, such as size, or geography.
3. **Finalize statewide foundational cost estimate.** The final step in developing the statewide foundational cost estimate was to work with the Technical Workgroup to analyze the model's outputs using alternative scenarios for cost drivers and elasticity factors, and develop a consensus Technical Workgroup estimate.

In order to bring qualitative input and subject matter expertise into the estimate, the process included multiple work sessions with the Technical Workgroup and the jurisdictions that provided sample data to refine the assumptions in the model. These work sessions were integral to creating a reasonable and justifiable estimate of foundational costs.

FPHS Current Spending Estimate

DOH Current Spending Estimate

Source: Washington State Department of Health

1. **DOH provided direct estimates of its current spending** on each of the foundational public health services, based on its FY 2013 operating budget.

LHJ Current Spending Estimate

Source: Washington State Auditor's Office Budget, Accounting, and Reporting System (BARS)

1. **Identify which BARS codes contain foundational services**. The first step in this analysis was to exclude all public health spending that is definitely not foundational by excluding BARS codes that contain no foundational activities.
2. **Estimate what percent of these BARS codes are comprised of foundational spending**. Since BARS codes don't align perfectly with the foundational definitions, the second step was to further refine the analysis by estimating how much of each BARS code was foundational expenditures. This analysis relied on comparing BARS data with the cost sample data from our nine sample LHJs.
    a. Aggregate BARS data for the nine sample LHJs into the seven major expenditure buckets (six programs + capabilities) for which we estimated current spending.
    b. Categorize the sample cost data from the nine LHJs into the same seven expenditure buckets.
    c. Aggregate BARS and sample cost data by LHJ size categories to mitigate variances and average out service delivery differences.
    d. BARS spending in each size category and for each element was compared to the LHJ-provided cost estimate in the same category.
        i. Where the LHJ-provided estimate was higher than the BARS spending amount in that category, 100% of the BARS data was assumed to be spent on foundational services and was included in the estimate of current foundational spending.
        ii. Where the LHJ-provided estimate was lower than the BARS spending amount in that category, the percent difference between the categories was applied, and so only a subset of the BARS data was assumed to be spent on foundational services and therefore included in the estimate of current foundational spending.
        iii. Using this information, a discount percentage was created for each expenditure category for every size category of LHJ.
    e. Apply the percentages developed in Step D to the BARS spending data for all LHJs, using the appropriate factors for each LHJ size category.
3. **Finalize the current spending estimate**. In order to bring qualitative input and subject matter expertise into the estimate, the process included multiple work sessions with the Technical Workgroup. These work sessions were integral to creating a reasonable and justifiable estimate of current spending.

Estimated FPHS Gap

DOH Estimated Gap

Source: Washington State Department of Health

1. **The DOH Estimated Gap is the difference between the FPHS Cost Estimate and the FPHS Current Spending Estimate.**

LHJ Estimated Gap

Source: Washington State Auditor's Office Budget, Accounting, and Reporting System (BARS)

To identify the gap between what it would cost to provide FPHS and current resources going to FPHS, there were two important issues that needed to be addressed:

- The difference between the aggregate LHJ Cost Estimate and the aggregate LHJ Current Spending Estimate understates the potential gap, because some LHJ's are estimated to be spending more than the base level of service to meet FPHS needs . As a result, if you simply take the difference between the two aggregate numbers, this higher level of spending serves to inappropriately offset gaps at other LHJs.
- Some foundational services that LHJs currently provide are funded by revenue sources that may not be considered appropriately stable and reliable.

The following steps outline how the Estimated FPHS Gap was developed, using the FPHS Cost Estimate and the FPHS Current Spending Estimate, and adjusting for the two complexities noted above.

1. **Cost Estimate minus Current Spending Estimate.** The first step in this analysis was to subtract the BARS-based FPHS Spending Estimate from the model-generated FPHS Cost Estimate for each program to identify the program-level preliminary gap. This gap is the simple mathematical difference between the Cost Estimate and the Current Spending Estimate for each program. However, it does not reflect the complexities noted above.
2. **At the program level, exclude LHJs where the Current Spending Estimate is higher than the Cost Estimate.** While the intent of the overarching FPHS work is to focus more broadly on state and local roles in providing FPHS, it was necessary to conduct the analysis at the LHJ level to develop reasonable and defensible estimates of both FPHS costs and current spending.
    a. Reviewing the results at the LHJ level, some LHJs had model-generated Cost Estimates that were less than their BARS-based Current Spending Estimates, while others had a Cost Estimate greater than the Current Spending Estimate.
    b. For LHJs with programs where the BARS-based Current Spending Estimate was higher than the model-generated Cost Estimate, the decision was made to simply assume that these LHJs were providing adequate service in these program areas. In so doing, there is an implicit assumption that these "extra" dollars are not available to address deficiencies elsewhere. The Technical Workgroup determined that this was appropriate for the following reasons:
        i. **Spending at one LHJ cannot be assumed to cover deficits at a different LHJ**. If the BARS-based analysis implies that a jurisdiction is spending more than the model-generated cost estimate of what it would take to provide a foundational service, that additional spending is not treated as though it could be reallocated to LHJs with a funding deficit.
        ii. **Spending on one program should not be assumed to be available to cover deficits in another program at the same LHJ**. Where the analysis suggests that there are excess dollars

in one program, it is not reasonable to assume that these funds could be used elsewhere or that the LHJ is even spending more they need to provide these services.

For example, a LHJ with significant marine waterfront and a high ratio of septic system to sewer system users may need to spend above the model-generated cost estimate on related environmental public health services to meet the same FPHS definition. In other situtations there may be differences in staffing requirements that make sense given how a particular LHJ is choosing to deliver a service. These real staffing needs may be higher than the model derived staffing configuration for that same LHJ. The approach to building the model generated FPHS estimate necessarily averages out some of these local differences through the development of the cost factors.

3. **At the program level, exclude inappropriate revenues**. There are some revenue sources that may currently be funding FPHS services that do not align well with the FPHS framework. Since FPHS are services that should be available and consistent for all residents statewide, it's important that they be funded in a way that is reliable, stable, and consistent over time.

   For each program, the Technical Workgroup considered the current funding sources for that program and determined if there were funding sources that did not meet the stable, reliable, and consistent test.

   Since the LHJ spending data was derived from the BARS system, there was no way to align current spending with sources of funding for the subset of costs associated with FPHS. As a result, when specific funding sources were excluded for the purposes of funding FPHS, it did not automatically add to the estimated gap. The exclusions needed to be large enough so that the remaining "appropriate funding" was less than the BARS-based spending estimate for a specific program at a specific LHJ. It was only in these more limited cases, where it was possible to say definitively that some portion of current spending was coming from one of these less reliable sources, that an adjustment was made to increase the Estimated FPHS Gap.

4. **Calculate the Estimated FPHS Gap**. The Estimated FPHS Gap was then calculated using the formula shown in Exhibit 2 below.

Exhibit 2
FPHS Cost Estimate, Current Spending Estimate, and Estimated Gap (2013 $)

(1) FPHS Cost Estimate	−	(2) FPHS Current Spending Estimate	=	(3) Preliminary FPHS Gap	+	(4) FPHS Gap Adjustments (a) Exclude LHJs without gaps	(b) Exclude Inappropriate Revenue	=	(5) Estimated FPHS Gap

Source: BERK, 2014.