Northern Nevada Public Health: Utilizing the Public Health Workforce Calculator and Workforce Capacity Self-assessment Tools to Develop a Framework for Workforce Investment

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ABSTRACT

Context: Health departments nationally are critically understaffed and lack infrastructure support. By examining current staffing and allocations through a Foundational Public Health Services (FPHS) lens at the Northern Nevada Public Health (NNPH), there is an opportunity to make a strong case for greater investment if current dedicated full-time equivalents are inadequate and to guide which investments in public health workforce are prioritized.

Objective: To assess the use of the Public Health Workforce Calculator (calculator) and other tools to identify and prioritize FPHS workforce needs in a field application.

Design: Field application of the calculator in conjunction with the use of FPHS workforce capacity self-assessment tools.

Setting: NNPH.

Participants: NNPH and Public Health Foundation (PHF).

Intervention: From June 2022 through April 2023, PHF collaborated with NNPH, serving Washoe County, to provide expertise and assistance as NNPH undertook an assessment of its workforce needs based upon the FPHS model.

Main Outcome Measure(s): Comparison of the calculator output with FPHS workforce capacity self-assessment tools.

Results: The calculator and the FPHS capacity self-assessment process yielded complementary FPHS workforce capacity gap data. The use of a structured and transparent process, coupled with additional tools that included prioritizing needs, provided a viable and sustainable process for public health workforce investment planning. NNPH successfully utilized the results to bolster a supplemental funding request and a state public health appropriation.

Conclusions: The use of the calculator and an FPHS workforce capacity self-assessment in a facilitated and structured process such as that used by NNPH to identify staffing priorities may hold promise as an approach that could be used to support decision-making and justification for infrastructure resources when funding for public health increases in the future.

KEY WORDS: Foundational Public Health Services, workforce, workforce capacity self-assessment

The Public Health Foundation (PHF) collaborated with the Northern Nevada Public Health (NNPH), serving Washoe County, to provide expertise and assistance as NNPH undertook an assessment of its workforce needs based upon the Foundational Public Health Services (FPHS) framework. After gaining greater familiarity with NNPH, and reviewing key organizational documents, PHF consultants visited NNPH and laid groundwork for the workforce capacity self-assessment. In addition,

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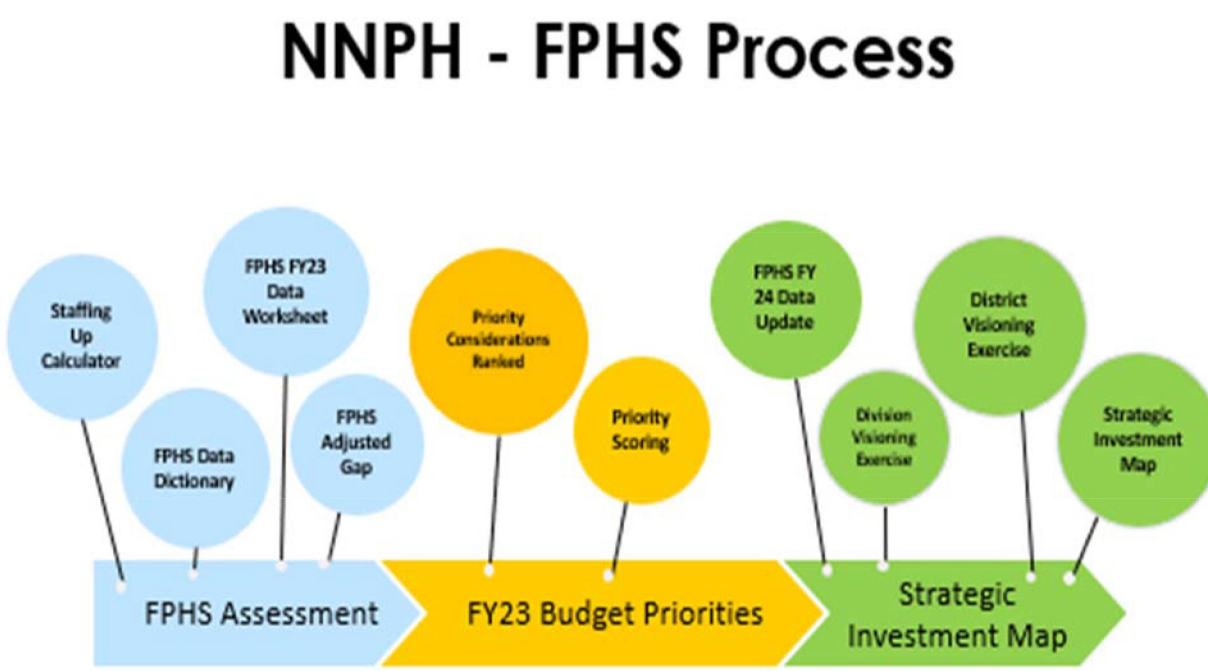

FIGURE 1 NNPH FPHS Process Steps
Abbreviations: FPHS, Foundational Public Health Services; NNPH, Northern Nevada Public Health. This figure is available in color online (www.JPHMP.com).

a population-based estimate of NNPH FPHS workforce needs was provided courtesy of the Center for Public Health Systems University of Minnesota School of Public Health. Other comparators were also explored as the NNPH leadership team conducted its assessment, all part of the effort to triangulate the findings and provide context.[1,2] An overview of the major process steps is summarized in Figure 1.

Foundational Public Health Services Model

Beginning with the Great Recession, state and local health departments suffered dramatic declines in staffing, exacerbating what had been a chronically understaffed governmental public health workforce.[3-6] Inadequate staffing fault lines have become more visible during the COVID-19 pandemic.[7] The urgency of responding to the pandemic and being prepared for the next one may provide an opportunity for a long-term sustainable public health personnel resources infusion.

In the aftermath of the recession, a study group for the then national Institute of Medicine (IOM) (today the Academy of Medicine) was commissioned to develop a "minimum package" of public health services to complement the previously developed minimum package of health services.[8] The FPHS model was introduced in the IOM report and subsequently refined over several years.[5,9,10] In its current form, it is graphically presented as Figure 2.[10] Highlights of the model underscore the importance of sufficient infrastructure to support public health programs and Community-Specific Services (CSS).

Foundational Capabilities are the 8 cross-cutting skills and capacities necessary to ensure adequate levels of support for basic public health protections, programs, and activities. Foundational Areas are the minimum levels of public health programming and services that must be available everywhere for public health to be effective anywhere. Displayed above them (indicated by the 2 smaller solid turquoise and black circles at the diagram top) are the programmatic foci, CSS, that are tailored to the community being served—here Washoe County. Some examples of CSS include providing direct services such as childhood immunizations and sexually transmitted infections treatment. The emphasis of CSS is meeting the needs of every unique community with a mix of services as reflected in the Community Health Assessment and ultimately the Community Health Improvement Plan, as well as the NNPH Strategic Plan. Overall, the expected distribution of the workforce is that CSS would garner the largest share of human capital, while being supported by a fully developed infrastructure within the Foundational Capabilities and Areas.

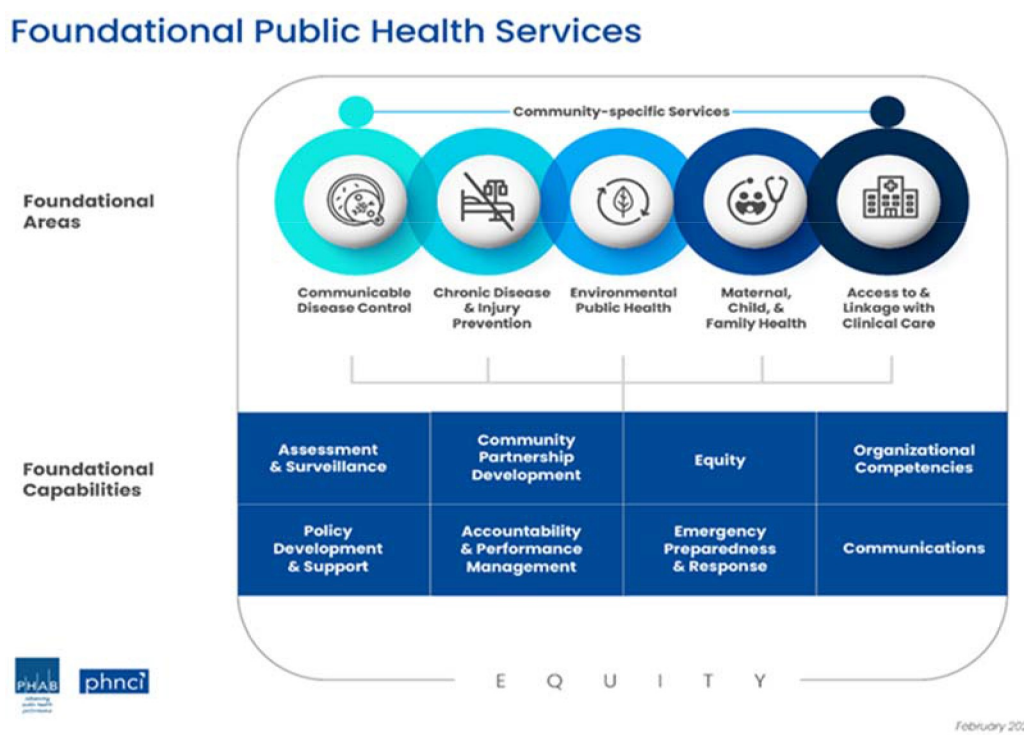

FIGURE 2 Foundational Public Health Services. This figure is available in color online (www.JPHMP.com).

FPHS Relevance to NNPH

A growing number of local and state health departments are exploring the FPHS. It is consistent with the Public Health Accreditation Board (PHAB) accreditation framework already embraced by NNPH, and crosswalks describing the mutual interdependence have been developed.[11] By reviewing the FPHS and examining current staffing and allocations at NNPH in a workforce capacity self-assessment, the health department had the opportunity to compare itself with other similarly situated departments nationally. A strong case can then be made for greater investment if current dedicated full-time equivalents (FTEs) are inadequate. Moreover, utilizing the FPHS model and data from the assessment will inform an ongoing organizational strategic and workforce development planning process, while assisting in guiding future workforce investment. This process also supports and reinforces the local Community Health Assessment and planning activities.

Development of the Workforce Calculator

In 2021, a group of researchers and public health practitioners was convened by the de Beaumont Foundation and the Public Health National Center for Innovation, a division of PHAB. This group, *Staffing Up*, was tasked with the development of a governmental Public Health Workforce Calculator (calculator) to assist state and local health departments with determining their personnel needs premised upon the FPHS framework.[4] The initial approach *Staffing Up* adopted was based upon a population-informed model. With further refinements, the latest iteration of the model was released on October 27, 2022, just before the NNPH Board of Health held a scheduled retreat.

The task force deployed a complex multifaceted methodology to reach its conclusions, relying on multiple sources of data. These sources include information regularly collected by national organizations representing local and state health departments. In addition, other surveys funded by the de Beaumont Foundation and the Centers for Disease Control and Prevention (CDC) such as the Public Health Workforce Interests and Needs Survey (PHWINS) and specific data from states participating in the 21st Century Learning Community (21 C) added detailed expenditure information to the calculator.

Early findings from *Staffing Up* concluded that the governmental public health workforce currently providing the FPHS nationwide is understaffed by 80 000 workers.[3] The largest share would be allocated to local health departments. Approximately 6000 FTEs or a 40% increase was estimated for those health departments serving communities between 200 000 and 499 000 population.[3] Considering Washoe's continuing growth,

now exceeding 500 000, the estimated needs for larger health departments are even greater (50% increase).

Initial NNPH Workforce Calculator Output

With permission of the de Beaumont Foundation and CDC, colleagues from the University of Minnesota shared the draft population-based calculator output with the PHF team. This early version offered estimates of needed workforce to provide the FPHS in Washoe County. The calculator estimated a workforce of 136 FTEs is required to provide the FPHS (Foundational Capabilities: 56; Foundational Areas: 80). Based upon population, it also predicted 93 FTEs are currently on staff. This resulted in a preliminary workforce gap estimated by the calculator to be 43 FTEs.

The accuracy of the current staffing committed to the FPHS could not be assured from the calculator output alone, given that it provides a population-based estimate only. While the calculator output is extremely valuable information, greater granularity, local context, and comparisons with other local health departments were required to further amplify the type and quantity of the future workforce composition, as well as the actual workforce gap. NNPH conducted an in-depth FPHS workforce capacity self-assessment, while PHF provided comparator data from other local health departments. Collectively, these activities facilitated further refinement of NNPH workforce planning.

Workforce Capacity Self-assessment

Among others, states participating in the 21 C undertook structured FPHS workforce capacity self-assessment processes.[12] In particular, Ohio had several years of experience with an ongoing self-assessment and had several local health departments serving similar sized communities as NNPH. Ohio utilized a process that closely mirrored the national FPHS model. The PHF team was able to review the FPHS costing and staffing tools and reports utilized in Ohio by the Ohio Public Health Partnership and local health departments.[13,14]

Leadership at NNPH, in conjunction with the PHF team, developed an FPHS staffing tool to fit the Washoe and Nevada contexts. Most significantly, the list of FPHS definitions used in Ohio was revised to reflect the local environment; these definitions were critical to determine the extent the FPHS are provided at a granular staff level. During August 2022, leadership, division, and office teams met regularly and completed detailed spreadsheets estimating the FPHS and gaps. In this process, each individual position was reviewed and the portion of every FTE dedicated to provision of the FPHS was identified. This step was pivotal, given that many staff members serve multiple roles, including several different FPHS as well as CSS. The NNPH self-assessment was then benchmarked with the calculator output (original and refined versions), as well as with several jurisdictions serving comparably sized populations in Ohio.

The more recently updated calculator output became available as NNPH was conducting its workforce capacity self-assessment. It provided expanded estimates of the Foundational Capabilities, several of which were not captured in the original version. The calculator results do not include COVID-specific staff who were hired to bolster response to the pandemic. Final results from the self-assessment were available to further populate and complement output from the calculator. Revised calculator data indicated 141 FTEs were needed to provide the FPHS in NNPH. The NNPH FPHS self-assessment exercise revealed that only 91 FTEs were currently in place to provide the necessary infrastructure, quite similar to the original calculator estimate of 93 FTEs. This left an FPHS workforce gap at NNPH of 50 FTEs.

NNPH leadership took the self-assessment exercise a significant step further and contextualized the initial results for the community being served. In this next step of the self-assessment, NNPH considered the contributions of other agencies in the Washoe community that also provide Foundational Capabilities and/or Foundational Areas as part of the larger public health system. This was followed by a prioritization process that weighted each FPHS component by the degree of importance that NNPH leadership attached to the service for receiving additional resources when they become available. After making these adjustments, the team concluded that the adjusted FPHS workforce gap at NNPH was 32.7 FTEs. There still remained a substantial gap, although lower than the unadjusted population-based estimate alone predicted (50.0 FTE). A more specific breakdown by Foundational Capability and Foundational Area of the self-assessment is shown in Tables 1 and 2.

NNPH expanded the FPHS workforce capacity self-assessment to include CSS. The majority of NNPH FTEs (96.3) deliver CSS. The sufficiency of this number is defined by the array of services necessary to meet community needs as determined by the Community Health Assessment, Community Health Improvement Plan, and the NNPH Strategic Plan. Importantly, although the FPHS workforce gap identified through the capacity self-assessment exercise includes needed staffing to provide the Foundational Capabilities and Foundational Areas, the FPHS assessment does not include a projection of needed staffing to provide CSS.

TABLE 1
Northern Nevada Public Health FPHS Staffing Levels—Current and Predicted Needs[a]

	Current FTE	FTE Need Predicted by Calculator	Difference (Additional FTE Need)	% of Current Need Met	Adjusted Prioritized Additional FTE Need[b]
Foundational Capabilities					
Assessment (Surveillance and Epidemiology)	7.89	10.3	2.41	77%	4.47
Emergency Preparedness (All Hazards)	4.71	7.4	2.70	64%	1.96
Communication	2.70	5.2	2.50	52%	2.45
Policy Development and Support	1.91	3.5	1.60	54%	0.98
Community Partnership Development	4.81	4.5	-0.31	107%	0.59
Organizational Competencies[c]	24.25	27.4	3.15	88%	5.90
Total Foundational Capabilities	**46.25**	**58.3**	**12.05**	**79%**	**16.35**
Foundational Areas					
Communicable Disease Control	5.08	9.3	4.22	55%	6.08
Chronic Disease and Injury Prevention	5.73	19.7	13.97	29%	2.15
Environmental Public Health	32.61	36.5	3.89	89%	4.95
Maternal/Child/Family Health	1.16	11.7	10.55	10%	2.12
Access/Linkage With Clinical Health Care	0.22	5.6	5.38	4%	1.01
Total Foundational Areas	**44.80**	**82.8**	**38.00**	**54%**	**16.31**
Total Foundational Capabilities + Foundational Areas	**91.05**	**141.10**	**50.05**	**65%**	**32.66**
Community-Specific Services					
Communicable Disease Control	49.96				
Chronic Disease and Injury Prevention	1.84				
Environmental Public Health	28.19				
Maternal/Child/Family Health	11.54				
Access/Linkage With Clinical Health Care	4.77				
Total Community-Specific Services	**96.29**				
Total WCHD FTEs	**187.36**				

Abbreviations: FPHS, Foundational Public Health Services; FTE, full-time equivalent; WCHD, Washoe County Health Department.

[a]*Boldfaced values indicated a total values.*

[b]*Adjusted for the FPHS provided by other community organizations and priority for additional resources (from adjusted gap spreadsheet tab).*

[c]*Includes Equity and Accountability and Performance Management Foundational Capabilities.*

Prioritizing and operationalizing workforce investment

The completed initial calculator estimate and the workforce capacity self-assessment helped build the strong case for greater investment in the NNPH workforce. Moreover, it informed an ongoing organizational strategic and workforce development planning process that was already well underway. However, merely documenting a gap, even one as large as is present at NNPH, does not in itself provide sufficient guidance. How did NNPH operationalize its priorities so that investments can be made strategically as resources become available?

To address this important question, the PHF and NNPH teams jointly developed a prioritization matrix that progressed through several iterations before settling on the model depicted in Figure 3. This tool is

TABLE 2
Estimates of Minimum FTEs Needed for FPHS Implementation[a]

	Additional FTE Need (Unadjusted)	% of Below-the-Line FPHS Provided by Current Staffing (Difference Between Current FTE and Need Predicted by Calculator)	% of Below-the-Line FPHS Provided by Other Entities	Total Below-the-Line FPHS Provided in the Community (NNPH + Other Entities)	Priority for New Resources: A Lot Less Important (–20%), Less Important (–10%), Not More or Less Important (0%), More Important (+10%), A Lot More Important (+20%)	Adjusted Prioritized Additional FTE Needs
Foundational Capabilities						
Assessment (Surveillance and Epidemiology)	2.41	77%	0%	77%	20%	4.47
Emergency Preparedness (All Hazards)	2.70	64%	10%	74%	0%	1.96
Communication	2.50	52%	10%	62%	10%	2.45
Policy Development and Support	1.60	54%	25%	79%	10%	0.98
Community Partnership Development	–0.31	107%	0%	107%	20%	0.59
Organizational Competencies	3.15	88%	0%	88%	10%	5.90
Foundational Areas						
Communicable Disease Control	4.22	55%	0%	55%	20%	6.08
Chronic Disease and Injury Prevention	13.97	29%	60%	89%	0%	2.15
Environmental Public Health	3.89	89%	2%	91%	5%	4.95
Maternal/Child/Family Health	10.55	10%	65%	75%	–20%	2.12
Access/Linkage With Clinical Health Care	5.38	4%	80%	84%	10%	1.01
Total FPHS FTE Need	**50.05**					**32.66**

Abbreviations: FPHS, Foundational Public Health Services; FTE, full-time equivalent; NNPH, Northern Nevada Public Health.
[a]*Boldfaced values indicated a total values.*

based upon the PHF Electronic Prioritization Matrix located at http://www.phf.org/resourcestools/Pages/Electronic_Prioritization_Matrix.aspx (see also page 93 of the *Public Health Quality Improvement Encyclopedia*).[15] It allows for ranking and weighting the key criteria in the decision-making process for meeting the most pressing workforce needs. Using the matrix to rank decision criteria by level of importance helps narrow the focus of identified priority issues. Given the substantial FPHS workforce gaps displayed in Tables 1 and 2, it is not surprising that "workload" (insufficient FTEs to complete assigned work) and "span of control" (excessive supervisory roles/ratios) received the highest priority ranking.

This prioritization matrix was utilized by the NNPH leadership team to rank the initial new positions requested as part of the FY24 budget process. Utilizing these tools, the leadership was able to identify key staff positions to be requested through a supplemental funding process. A flowchart was also designed to facilitate and simplify the process.

The experience utilizing these tools inevitably led to suggested refinements of the criteria for future prioritization exercises. A new "customer focus/experience" criterion was added, and "span of control" and "workload" were consolidated into a single factor.

Utilizing the Framework: NNPH Going Forward

NNPH's approach to the FPHS and CSS workforce capacity self-assessment engaged division directors and supervisors in the process of identifying how FTEs were allocated across the FPHS and CSS. Following completion of the initial gap analysis, the leadership

Scoring System:	Blank - no relationship 1 - Equal Importance 5 - More Important 10 - Much More Important .20 (or 1/5) - Less Important .10 (or 1/10) - Much Less Important	Interpretation:	Rows with lowest ranks (ex. 1, 2, 3) are the higher

	Maintain	Need	Mandate	Equity	Capabilities	Span	Workload	Revenue	Row Total	Rank
Maintain		5.0	1.0	1.0	5.0	0.2	0.2	1.0	13.4	4
Expand/Need	0.2		1.0	0.2	0.2	0.1	0.1	1.0	2.8	8
Mandate	1.0	1.0		1.0	1.0	0.2	0.2	5.0	9.4	6
Equity	1.0	5.0	1.0		0.2	0.2	0.2	5.0	12.6	5
Capabilities	0.2	5.0	1.0	5.0		0.2	0.2	5.0	16.6	3
Span	5.0	10.0	5.0	5.0	5.0		1.0	5.0	36.0	1
Workload	5.0	10.0	5.0	5.0	5.0	1.0		5.0	36.0	1
Revenue	1.0	1.0	0.2	0.2	0.2	0.2	0.2		3.0	7

FIGURE 3 NNPH Workforce Prioritization Matrix.
Abbreviation: NNPH, Northern Nevada Public Health.

team composed of the NNPH division directors, Administrative Health Services Officer, District Health Officer, and Director of Projects conducted the adjusted gap analysis by assessing the FPHS provided by other community partners and the relative weighting of need for investment for each of the FPHS areas. This was achieved through consensus, as was the leadership team's subsequent determination of the criteria and their relative weight/importance for construction of the prioritization matrix.

A strategic investment map (SIM) was a process step utilized to identify positions to be considered for investment through the prioritization matrix.[16] This included positions to fill both the FPHS staffing gap and positions needed for CSS. The SIM inputs included the NNPH Strategic Plan, Community Health Assessment and other related data, priority considerations such as workload and span of control, and the subject matter expertise and professional judgment of the members of the leadership team. The SIM provided a list of positions desired on the basis of these inputs to be further evaluated for investment. On the basis of the SIM, the prioritization matrix was then used to rank new positions for potential investment as proposed by the division directors and the District Health Officer.

The leadership team worked collaboratively to rank the proposed positions through a consensus process using the prioritization matrix. After the positions were ranked through the matrix, the leadership team discussed and evaluated the results to ensure the tool and the process produced what the group felt were appropriate rankings. On the basis of this discussion, only one position was adjusted up and one adjusted down in rank, based on consensus that the prioritization matrix had not initially included customer experience as a consideration.

The FPHS workforce capacity self-assessment, coupled with the SIM and prioritization matrix, provided a structured approach and rational process for the team to work together to reach consensus on which positions were the highest priority for investment. This structured approach allowed for an inclusive and unifying path to agree upon these new position investments. The process further strengthened the leadership team and its ability to work together and support one another. The result was agreement on 7 new positions proposed to and

approved by the District Board of Health during the most recent budget cycle. The team and the board also agreed on maintaining 3 additional health equity positions for which grant funding was ending.

This was a tremendous improvement on the prior process in which each of the division directors advocated for new positions that they felt were necessary to bolster their programs. This resulted in a competitive process that was adjudicated by the District Health Officer who would make the final decisions on new positions proposed to the District Board of Health.

While the new structured approach required the investment of the leadership team's time to allocate FTEs to the specific FPHS or CSS, conduct the adjusted gap analysis, complete the SIM exercise, and construct and rank positions through the prioritization matrix; the integrity and transparency of the position investment decisions that were made collaboratively have convinced the team of its value. Given the significant gap between positions needed and resources available for investment, NNPH believes that this process is especially important to be able to justify those positions that are selected for investment.

As a result, NNPH is utilizing this structured approach as an iterative process into the future. NNPH conducted a "visioning exercise," an enhancement of the SIM in which each division director and the District Health Officer identified priority positions that they would like to add as resources may become available over the next 3 to 5 years. This exercise provides a shared understanding of the vision each division has for future workforce investment in positions over the next 3 to 5 years based on current conditions and understanding, and as resources become available. The positions are ranked on the basis of their perceived priority for their division/office: (1) *high priority need*: likely to be an above base position requested in the next budget cycle; (2) *medium priority need*: position would be added if resources are or become available; and (3) *advances public health*: position would be added if a grant or designated funding source is identified and obtained. An explanation of the need and public health value of each position was also provided, and these were compiled and shared with the leadership team to provide a district-wide perspective.

The prioritization matrix that was used to identify the 7 new positions to be added in FY24 considered both FPHS and CSS workforce needs of NNPH. However, some new positions engaged in the FPHS contribute only a portion of their FTEs toward those efforts. Therefore, NNPH recently updated their FTE allocations for the FPHS and CSS following the additional resource investment in the new positions and revised the adjusted gap analysis to understand how those positions contributed to the different FPHS areas and to reducing the FPHS staffing gap. This self-assessment found that NNPH has reduced its FPHS staffing gap from 32.7 to 29.2 FTEs, while also increasing staffing for CSS. The visioning exercise also has been updated to reflect shifts in division priorities for maintaining staffing based on federal grant funding cuts. The next step will be to utilize the prioritization matrix to rank positions for the upcoming budget cycle. With the structure and process in place, the effort now requires significantly reduced staff time to complete.

Even as the workforce capacity self-assessment structure has served NNPH's need for a rational process to invest in new positions, it also provides additional benefits for public health in Nevada. Nevada is tied at last in the nation for state per capita investment in public health. For a number of years, health authorities have attempted to achieve increased state investment in public health as well as flexible noncategorical funding that can be used to address priorities identified by District Boards of Health. During the 2023 legislative session, NNPH strengthened the case for increased public health investment by presenting the findings from the FPHS capacity assessment and the 32.7 FTE gap in FPHS staffing. Additional justification for increasing state investment in public health was also provided to the legislature, and, ultimately, Senate Bill 118 (SB118) was passed into law. SB118 provides approximately $5 per capita of noncategorical funding allocated by population to Nevada health authorities. This will result in approximately $2.4 million in funding to NNPH to be used to address public health priorities identified by the District Board of Health.

SB118 also requires that the Nevada health authorities report back to the legislature on the public health priorities that were funded and the process used to identify those priorities. NNPH is well positioned to demonstrate a robust process that considers community health priorities identified in the Community Health Assessment, Community Health Improvement Plan, and NNPH Strategic Plan, integrated into the staffing prioritization for investment in the workforce needs to deliver the FPHS and CSS.

Discussion

It is now well established that public health infrastructure is inadequate to meet current needs and that the recent pandemic has only exacerbated the imbalance. The *Staffing Up* project was designed to document those infrastructure needs via the lens of the FPHS and to provide local health departments with guidance and resources in the form of a workforce calculator to

facilitate workforce investment. The recent experience utilizing the calculator in conjunction with a workforce capacity self-assessment and a structured prioritization process in NNPH has demonstrated the value of these tools to inform a comprehensive workforce investment planning process. This finding is significant, given that this is the first known field application of the calculator, with results supported through the more in-depth self-assessment. Moreover, the tools were mutually reinforcing, which helped validate the exercise for the participants.

NNPH had a substantial workforce gap as estimated by the calculator and confirmed through the more resource-intensive self-assessment. However, leadership recognized that we work within a public health system, in which the contributions of partners must be considered. This enables the workforce gap determination to become a key discussion when developing the Community Health Assessment, Community Health Improvement Plan, and NNPH Strategic Plan, potentially reinvigorating those critical relationships.

Notable in NNPH was the group process and consensus approach adopted during this project. When the ultimate investment decisions were made, they were shared decisions—departing from previous norms in which each of the division directors advocated for their individual unit rather than the entire public health enterprise. The by-product of this experience has been greater leadership cohesion and collaboration. In part, this was possible because a rational and transparent process was utilized, but also reflects a willingness to share authority and relinquish control.

NNPH concluded that the use of the calculator and self-assessment are sustainable activities. In fact, it plans to update them regularly with subsequent budget cycles. One innovation presented was the use of the PHF electronic prioritization matrix to operationalize the workforce gap findings. It was necessary but insufficient to report an FPHS workforce gap of 32.7 FTEs. Given that full funding is unlikely, how do you select the most critical positions to be requested, and what criteria should be used for selection? The prioritization matrix helped facilitate those discussions of the leadership with positive outcomes.

The use of the calculator and workforce capacity self-assessment also bolstered the case for a successful legislative budget request, benefitting all Nevada health authorities, with $5 per capita for infrastructure support. Perhaps, this could be replicated in other states and settings or furnish the initial data to make a stronger case for funding.

Our shared experience also offers a few caveats regarding the use of the public health calculator. The workforce gap estimate is determined solely by population of the jurisdiction. However, there are few health departments serving "average" populations, and a more consistent approach may be required to adjust for levels of FPHS staffing need, given scope and magnitude of public health concerns within any jurisdiction. Large health departments are also interested in the calculator and need guidance related to use for jurisdictions with greater than 500 000 residents; including confidence intervals would be ideal and would provide an important adjunct when collaborating with governing boards. In addition, while the FPHS were the focus of our project, NNPH (and now others) has identified a need for additional programmatic staff (CSS). In fact, there was reluctance to pursue workforce requests based upon infrastructure needs alone. This is easy to rationalize, given the context of funders preferring programs to infrastructure and competing programmatic levels of unmet need. Nonetheless, perfection should not be the enemy of the good. The calculator coupled with a workforce capacity self-assessment tool and prioritization process can yield invaluable dividends.

Limitations

The calculator is based upon data collected just before the pandemic. Consequently, these tools did not include additional staffing levels for the COVID-19 response. As a result, the workforce needed to respond to prolonged public health disasters with implications for vulnerable populations may be understated.

Implications for Policy & Practice

- The calculator is a promising and valuable tool for estimating FPHS workforce capacity gaps that can be utilized in the public health practice setting.
- The calculator and the FPHS capacity self-assessment process yielded complementary FPHS workforce capacity gap data. A meaningful workforce investment plan can be developed when utilizing these tools in tandem, coupled with additional tools.
- The availability and use of a structured and transparent process for public health workforce capacity self-assessment facilitated leadership teambuilding and imbued stronger collaboration across organizational silos.
- Critical workforce needs determined through the use of the calculator, the FPHS workforce capacity self-assessment, and the structured prioritization process informed successful requests for additional new positions from the District Board of Health and the Nevada legislature.

Conclusions

Nationally, there is the need for greater investment in noncategorical infrastructure funding to support public health. The use of the calculator and an FPHS workforce capacity self-assessment in a structured process such as that used by NNPH to identify staffing priorities may hold promise as an approach that could be used to support decision-making. It can also strengthen the justification for additional infrastructure resources when funding for public health increases in the future.

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