NNPHI
National Network of Public Health Institutes

NNPHI PUBLIC HEALTH LEADS:

Exploratory Report on Public Health Data Science & Leadership

INFOGRAPHIC

This report summarizes key insights from four listening sessions with 26 participants representing academia, state, local, and territorial health departments, national public health non-profits, and other related organizations. These sessions, supported with quantitative and qualitative data, provide a roadmap for addressing critical workforce needs, enhancing data science and leadership capacity, and identifying systemic barriers.

The listening sessions were conducted to:

1. **Define key public health data science and leadership concepts for the workforce,**
2. **Identify current gaps in the data science and leadership needs of the current workforce,**
3. **Identify current gaps in data science and leadership capacity, accessibility, training, and the education needs of the public health workforce,**
4. **Address ways that systems undermine efforts to create a more diverse public health workforce, and**
5. **Align workforce needs and current public health programs with data science and leadership curricula.**

Additionally posed were the following questions:

1. What are the **gaps in education** for newer public health workforce members?
2. What are the **training components** needed for improving technical skills?
3. What are the **systemwide process barriers** to gaining technical skills?

1. Defining Public Health Data Science & Leadership Concepts

Participants identified **key concepts** essential for workforce success:

Public Health Data Science: Skills like data analysis, data visualization, data management, and data communication were emphasized.

Leadership: Participants highlighted the need for **policy development, systems thinking, crisis management,** and **health equity** skills.

KEY TAKEAWAY: Workforce development must integrate **technical expertise** in data science and **leadership skills** to align with evolving public health challenges.

2. Current Gaps in Data Science & Leadership Capacity

Participants identified **critical gaps** impacting workforce readiness:

Technical Data Skills:

- Limited formal training in **data visualization tools** such as Tableau and Power BI.
- Participants noted gaps in **data literacy**

Leadership Development:

- Insufficient training in **policy development, budgeting,** and **crisis management.**

Real-World Applications:

OVER
60%
OF PARTICIPANTS
emphasized **a lack of hands-on training** to address real-world data and leadership challenges.

KEY TAKEAWAY: Closing these gaps requires targeted, applied training programs that build **technical data skills** and **leadership capacity**.

3. Systemwide Barriers to Workforce Development

Participants identified **systemic challenges** that undermine workforce development:

Recruitment Challenges:

Entry-level roles require **two or more years of experience**, creating barriers for new graduates.

Retention Issues:

50% of respondents cited **burnout** due to high workloads and underfunding.

Barriers to Diversity:

- Recruitment processes were described as exclusionary, with one participant calling the system a "brutal and disrespectful jungle."
- Lack of funding and mentorship disproportionately affects underrepresented groups in public health leadership.

KEY TAKEAWAY: Systemic improvements—including **fair hiring practices, sustainable funding,** and **mentorship programs**—are essential to creating a resilient, diverse public health workforce.

4. Aligning Workforce Needs with Programs

Participants highlighted a **disconnect** between academic programs and workforce demands:

Curriculum Gaps:

OVER
60%
OF PARTICIPANTS
noted that current curricula lack training in **applied data science** and **leadership**. For example:

"Workers [are] trained in SAS, but workplace uses R."

Real World Training:

Participants called for **on-the-job training** and **cross-disciplinary programs**.

Collaboration Opportunities:

Participants emphasized partnerships between **health departments** and **academic institutions** to align curricula with workforce needs.

KEY TAKEAWAY: Programs must evolve to include **hands-on training, interdisciplinary learning,** and **industry-aligned curricula.**

5. Addressing Systemic Barriers to Diversity

Participants shared insights on systems that hinder a **diverse workforce**:

Lack of Representation:

Higher leadership roles often lack diversity, limiting equitable strategies.

Systemic Challenges: Bureaucratic hiring processes and lack of mentorship create barriers for underrepresented groups.

"The absence of dedicated training programs and mentorship can hinder the development of essential leadership skills and competencies."

Funding and Retention:

Limited resources and temporary funding disproportionately impact diverse talent:

"Very hard to retain people with 5-15 years of experience. There is a very limited pipeline of public health workforce that can take on or grow into leadership roles"

KEY TAKEAWAY: Building a diverse public health workforce requires addressing systemic issues like **hiring inequities**, **leadership pipelines**, and sustainable funding.

KEY FIGURES

76% of listening session participants **held two or more years of experience in leadership or data science roles.**

ALMOST TWO OUT OF THREE

62%

of participants identified **low compensation as a primary workforce barrier.***

**also cited as a top barrier for recruitment and retention among recent graduates*

57% **reported limited training opportunities in emerging data science tools** like Tableau and R.*

**Recent graduates also reported lacking critical applied skils in data management tools such as GIS, Tableau, Power BI, R.*

35%

of participants highlighted a lack of mentorship opportunities to support professional growth.*

**limited access to mentors or career advisors was cited as a top recruitment and retention barrier among recent graduates*

50%

cited burnout as a significant retention challenge.

DEMOGRAPHICS

SURVEY RESPONDENTS

62 participants completed the recruitment survey, with an **average age of 40 years old**.

Participants represented **22 organizations across 19 U.S. states.**

74% of respondents held a **master's degree**, and **28%** held a **doctoral degree**.

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Please reach out to our Climate and Crisis Preparedness portfolio at **ccp@nnphi.org** with any questions or to learn more.

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