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Leveraging Science to Advance Health Equity: Preliminary Considerations for Implementing Health Equity Science at State and Local Health Departments

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Abstract

Context: In 2021, the Centers for Disease Control and Prevention (CDC) launched CORE, an agency-wide strategy to embed health equity as a foundational component across all areas of the agency's work. The CDC established a definition of health equity science (HES) and principles to guide the development, implementation, dissemination, and use of the HES framework to move beyond documenting inequities to investigating root causes and promoting actionable approaches to eliminate health inequities. The HES framework may be used by state and local health departments to advance health equity efforts in their jurisdictions.

Objective: Identify implementation considerations and opportunities for providing technical assistance and support to state and local public health departments in advancing HES.

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*NGOs participating in this analysis included community-based organizations and academic institutions from the 5 states.

Design: A series of implementation consultations and multi-jurisdictional facilitated discussions were held with state and local health departments and community partners in 5 states to gather feedback on the current efforts, opportunities, and support needs to advance HES at the state and local levels. The information shared during these activities was analyzed using inductive and deductive methods, validated with partners, and summarized into themes and HES implementation considerations.

Results: Five themes emerged regarding current efforts, opportunities, and support needed to implement HES at state and local health departments. These themes included the following criteria: (1) enhancing the existing health equity evidence base; (2) addressing interdisciplinary public health practice and data needs; (3) recognizing the value of qualitative data; (4) evaluating health equity programs and policies; and (5) including impacted communities in the full life cycle of health equity efforts. Within these themes, we identified HES implementation considerations, which may be leveraged to inform future efforts to advance HES at the state and local levels.

Conclusion: Health equity efforts at state and local health departments may be strengthened by leveraging the HES framework and implementation considerations.

Keywords

health equity; evidence-based public health; public health practice; governmental public health

Introduction

Addressing social and structural drivers of health such as structural racism and social determinants of health has the potential to reduce health disparities and inequities, leading to improved health outcomes.[1–3] While public health interventions have attempted to reduce health inequities, more research is necessary to understand their real-world success or failure.[4,5] To tackle these issues comprehensively, there is a need for researchers and public health practitioners to increase focus on enhancing effectiveness, scale-up, and sustainability of health equity-based programs, policies, and interventions.

In 2021, the Centers for Disease Control and Prevention (CDC) declared racism a public health threat and recognized it as a fundamental driver of racial and ethnic inequities in the United States.[6] With this announcement, the CDC launched CORE, an agency-wide strategy to embed health equity as a foundational component across all areas of the agency's work to address the underlying issues of structural racism, discrimination, stigma, and disenfranchisement that drive health inequities.[7] CDC's Office of Science led efforts to focus on the "C" of CORE—cultivating comprehensive health equity science (HES). To support these efforts, the CDC developed a working definition for HES:

> Health equity science investigates patterns and underlying contributors to health inequities and builds an evidence base that can guide action across the domains of the public health program, surveillance, policy, communication, and scientific inquiry to move toward eliminating, rather than simply documenting, inequities.[8]

CDC also developed HES principles[8] to embed into the agency's scientific process, programmatic work, and funding opportunities (Figure 1).

In 2023, the Association of State and Territorial Health Officials (ASTHO), with funding from the CDC, convened public health partners for discussions and conducted a qualitative analysis of their feedback on HES implementation considerations. Partners included representatives from state and local health departments and nongovernmental organizations (NGOs)* in 5 states. Findings from this analysis can inform HES implementation considerations that federal, national, state, and local decision-makers can leverage to further advance health equity efforts at state and local health departments.

Methods

Overview

ASTHO held partner convenings and leveraged discussion topics to collect feedback on (1) the current evidence base for health equity programs and interventions; (2) challenges, facilitators, and opportunities for implementing HES; and (3) support needed from other entities at the national, state, and local levels to advance HES implementation. We collected feedback virtually during implementation consultations with employees from state and local health departments, multi-jurisdictional facilitated discussions with employees from state and local health departments and nongovernmental partners, and a validation session of preliminary findings.

Sample selection

ASTHO, in coordination with the CDC, selected a purposeful sample of 5 states to provide feedback on the HES framework and considerations for implementation. As part of the selection process, we aimed to collect perspectives from a range of operating environments and considered factors such as geographic location, health department governance structure, population size and density, existing health equity efforts, and select state health indicators (ie, poverty rate and rate of adults who report fair or poor health status). Selected states included Illinois, Kentucky, Massachusetts, Mississippi, and Washington State. ASTHO also engaged the National Association of County and City Health Officials to identify local health departments within the sample of 5 states to contribute feedback. The local health departments identified for the implementation consultations primarily served large urban populations, and we expanded our selection to include rural health departments during the multi-jurisdictional facilitated discussions.

Procedures and analysis

Implementation consultations—Between January and March 2023, email invitations were sent to employees from the selected state and local health departments, with a request to participate in implementation consultations and subsequent stages of feedback. For each of the 5 states in our sample, we identified 2 state health department employees (n = 10) and 1 local health department employee (n = 5) to invite based on their involvement in health equity or research and evaluation programming at the state or local levels.

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Between January and April 2023, ASTHO conducted fifteen 60-minute individual implementation consultations with state and local health department employees (Table 1). We used a semi-structured consultation guide (Table 2), which we shared in advance via email, alongside a 2-page handout with information on CDC's HES working definition and principles. Consultations were conducted and recorded through Zoom (https://zoom.us/). The recordings were then transcribed by an external vendor. ASTHO uploaded the transcripts into Dedoose (https://www.dedoose.com/), a qualitative software tool, and coders applied both a deductive and inductive coding framework to analyze feedback for common themes. Coders started with a set of predefined codes and definitions based on the HES principles and the consultation guide. Emerging themes outside of the coding framework were identified through an inductive approach. The themes identified from consultations were explored further during multi-jurisdictional facilitated discussions, as described below.

Multi-jurisdictional facilitated discussions—In June 2023, ASTHO held two 90-minute virtual multi-jurisdictional facilitated discussions to introduce the HES framework to a broader group of partners and gather further input on potential challenges, promising practices, and needs to advance this work. To expand the perspectives collected beyond the original implementation consultations, we used snowball sampling methods to identify and invite additional state and local health department employees with relevant expertise, in addition to employees from NGOs collaborating with the state and local health departments. All invited partners worked in organizations that serve communities in the original state sample. Of the 51 staff participating in the multi-jurisdictional facilitated discussions, 40 (78.4%; 40/51) worked at state/local health departments and 11 (21.6%; 11/51) worked at NGOs (Table 1).

Participants engaged in 1 of 2 hosted facilitated discussions where facilitators used the same semi-structured discussion guide. As part of each facilitated discussion, the CDC provided an overview of the HES definition and principles. We then asked the health department and NGO partners to join breakout discussions focused on emerging thematic topics from the implementation consultations. Partners self-sorted into virtual breakout rooms based on their areas of interest or experience. For each breakout room, facilitators posed discussion prompts to identify challenges, promising practices, support needs, and collaborators to advance HES. Notetakers captured discussion points on Mural (https://www.mural.co/), an online whiteboard tool. Following approximately 60 minutes of discussion in breakout rooms, the partners reconvened in the main virtual meeting room to report key points from the discussions. A graphic recorder moved between the breakout rooms, capturing and synthesizing key points into a visual map, to support partners in processing, retaining, and making connections between points raised in discussion.

Whiteboard notes from each of the breakout discussions were analyzed using deductive methods to expand and further define preliminary themes and identify specific implementation considerations to advance HES.

Validation session—ASTHO convened a virtual validation session in July 2023. We invited all health department and NGO partners involved in the implementation consultations and facilitated discussions to review themes and validate the HES

implementation considerations identified through our qualitative analysis of feedback. In total, 19 (86.4%; 19/22) state/local health department employees and 3 (13.6%; 3/22) NGO employees joined our virtual validation session (Table 1). Partners used Zoom annotation tools to prioritize their top implementation considerations. Notetakers captured discussion points and results from the prioritization exercise and incorporated them into a final summary of themes and implementation considerations.

Results

Reactions to the definition and principles of health equity science

In general, partners at health departments provided positive feedback on the HES definition and principles, as they aligned with current health equity efforts at their organizations. Several noted the benefit of having guidance to drive health equity practice, with one health department indicating that "a solid framework … helps us inform future policy agendas, research agendas, and programmatic directions…" Some shared potential challenges with the HES concept, suggesting that "the challenge will be people wrapping their heads around what health equity science is" and commenting on the politization of words like "equity" and "science" in some states. Another noted that a discourse focused on HES may appear disconnected from community-based efforts, which may not have access to "ivory tower" conversations about science.

Themes around current status and implementation considerations for health equity science

Emerging topics from the implementation consultations and high-level feedback from the multi-jurisdictional facilitated discussions are displayed in a visual map (Figure 2). Five final themes emerged regarding the current efforts, opportunities, and needs to implement HES at state and local health departments, summarized below. A short description of each theme, sample quotes from health departments, and implementation considerations for advancing HES at state/local health departments are displayed in Table 3.

Existing health equity evidence base—Partners at health departments shared a range of evidence sources used to inform health equity work, such as public health surveillance systems and registries, vital records, hospital claims and patient data, census data and other national surveys, local data, and peer-reviewed journals. When asked about the quality of the existing health equity evidence base, however, many offered some critiques. A participant from one health department pointed out that many public health strategies, and the existing validated evidence base, were created before health equity concepts were fully incorporated into public health discourse: "From a historical perspective, the evidence-based programming in some areas … [had] no health equity focus at all. I think that's changing … as we move forward." Others identified challenges with finding time to assess and contextualize evidence sources to incorporate the knowledge into their current practice. They also raised the need for clearer processes for replicating and adapting existing evidence-based practices to meet state and local needs.

Health departments shared several challenges related to the data and surveillance systems used to inform the health equity evidence base. They noted the need to improve connections between data systems to better study inequities, described challenges in accessing real-time data, and highlighted opportunities to share provisional data to improve timeliness. Others shared an interest in the development of a comprehensive library or clearinghouse of evidence-based health equity interventions, programs, and policies, as well as CDC-based frameworks, guidance, and tools for conducting HES. Participants also discussed the need for investment in communication and dissemination science to support clear communications about health equity data for public health and non-public health audiences.

Integration and interdisciplinary public health practice and data needs— Partners at health departments discussed the need for guidance on how to integrate public health work with other disciplines and areas of government to advance HES, in addition to specific training needs. They noted challenges in engaging public health staff to operate outside of their customary content areas, particularly in addressing structural determinants of health, such as transportation, infrastructure, and housing. As one health department participant commented, some of their colleagues did not feel "comfortable with stepping outside the box of what public health is" to address some of the social and economic drivers of health. Several health department and NGO partners also emphasized the importance of understanding the intersectional nature of individual, social, and cultural identities. They requested training on characterizing intersectionality and providing context through data, in addition to best practices regarding data collection and sharing, disaggregation, and privacy.

Many health department and NGO partners noted the need to use and expand on existing data policies to ensure they are equity-centered and support uniform collection and reporting of social determinants of health and health equity-related data, such as race, ethnicity, sexual orientation, gender identity, ability, and geographic location. Health departments also called for consistent health equity terminology and definitions, in addition to better data standards across disciplines, noting that the types of measures needed to pursue HES are often not included or standardized across sectors and data systems (eg, between public health and payers). Some identified data modernization as an opportunity to improve system interoperability and data linkages within public health and across different sectors.

The value of qualitative data for health equity science—Many partners at health departments and NGOs discussed amplifying community voices through qualitative data collection as an important approach to strengthening and contextualizing the HES evidence base. As one partner noted, "I'd like for us to focus on … additional platforms for qualitative data and [for] narratives from community voices to be lifted up and transferred in a meaningful way that also contributes to the existing quantitative data that we are collecting at the department." Soliciting these community voices and stories requires relationship-building and trust. Partners noted that trusted representatives from within the community can play an important role in qualitative data collection, as they can create comfortable spaces for community members to engage and can ask effective follow-up questions.

Partners at health departments and NGOs raised challenges in incorporating robust qualitative data into public health practice. Some commented that health department staff

had varying perspectives on the value and validity of qualitative data, and others noted that data frameworks often do not fully recognize the importance of oral histories and Indigenous languages. Health departments also commented on the need for a skilled public health workforce with experience in qualitative research and epidemiologic methods to improve the collection and use of robust qualitative data.

Evaluation of health equity programs and policies—Most health department and NGO partners shared challenges around evaluating health equity programs and policies. While there was a recognition that evaluation should be more routine in health equity efforts, health departments noted that state/local public health practitioners often lacked the capacity to conduct robust evaluations due to time constraints, limited resources, and competing priorities. Others highlighted the restrictive nature of short funding cycles, which can limit the capacity to conduct impact evaluations. There were also challenges around the lack of standardized health equity evaluation measures. To address challenges, health department and NGO partners noted that they would benefit from technical assistance and training on evaluating health equity interventions and that new funding opportunities should build in time and resources for evaluation. One health department highlighted that they were building internal program capacity by "generat[ing] seminars and trainings for … equitable program evaluation."

Inclusion of impacted communities—Incorporating perspectives from communities more likely to experience health disparities was seen as critical to advancing HES by many health department and NGO partners. Several underscored the importance of involving community liaisons and individuals with lived experience in both the conceptualization and implementation of data collection efforts and the use of data resources produced from these efforts. Doing so can foster trust within the community and ensure that data collection methods and outputs align with the community's needs and preferences. Health department and NGO partners also highlighted the importance of compensating community participants for their time, expertise, and engagement in public health studies.

Several health departments, however, identified a lack of connection between state government and community/grassroot organizations as a challenge to including community collaborators in health equity work. Others raised challenges in identifying and selecting community-based organizations with whom to partner, emphasizing that time and resource constraints made it difficult to partner with multiple community organizations. Additional barriers included short funding cycles impacting the ability of health departments to work effectively with community-based organizations on long-term issues, as well as lengthy and complicated administrative processes impacting contracted partnerships with community-based organizations. Suggested solutions to these challenges included streamlining the procurement processes for nontraditional community-based organizations and the development of "equitable funding allocation [methods] to help select community-based [partners]."

Support needs from other organizations

Health departments shared that they would like more opportunities to connect with their peers in other state, tribal, local, and territorial health departments to better understand how others were approaching efforts related to HES and to gain ideas for their own jurisdictions. To that end, health department and NGO partners indicated their preference for more webinars, conversations, and virtual or in-person gatherings to learn from one another. As one health department shared, increased awareness of peer efforts around health equity "allows us to justify [our work] and say we're not the only ones out here doing it."

When discussing key collaborators, academic institutions were identified as a resource for connecting with diverse types of specialized knowledge, such as economists supporting cost-benefit analyses, or specialists in data literacy or evaluation methods. With regard to federal support, many felt CDC could advance HES implementation by establishing it as a national priority and directing grant resources toward this work. Others expressed that additional support from CDC on data collection, interpretation, and evaluation would enhance the development of a strong evidence base that informs systems and public health approaches to health equity.

Discussion

This qualitative analysis of feedback suggests that the HES framework has strong applications and existing alignment with the current work of state and local health departments. While partners at health departments and NGOs felt that operationalizing HES principles would be helpful in advancing health equity efforts at the state and local levels, they also noted a variety of challenges and implementation considerations that merit further discussion and action.

While advancing health equity and evidence-based public health strategies is critical for state and local health departments,[9–12] our findings suggest that more work is needed to bolster the evidence base available to inform health equity policies and programs. Beyond expanding the evidence base, support is needed to translate existing evidence into practice, which may involve supporting public health practitioners with strategies to scale and adapt existing evidence-based programs and policies to meet the specific needs of their community.[13,14]

Health department and NGO partners raised an array of workforce development needs to support HES implementation. Key considerations included recruitment of a diverse public health workforce and knowledge/skills development to better understand concepts of intersectionality and to work effectively across programs or sectors to tackle interdisciplinary health equity issues. The 2021 Public Health Workforce Interests and Needs Survey found gaps in both workforce diversity and staff confidence in addressing health equity topics,[15,16] consistent with the partner feedback we collected. Additionally, health department and NGO partners underscored the importance of engaging academic partners and including community collaborators in public health research and evaluation, reflecting existing literature on using community-based participatory research and public health-academic partnerships to improve health equity.[17–20]

Partner feedback related to the need for community involvement in generating actionable public health data aligns with recommendations set forth in *Public Health 3.0*, as does the feedback emphasizing the need for structural approaches to sustain community partnerships.[21] State and local health departments can support sustainable relationships with the communities they serve by revisiting some of their core health department organizational competencies,[22] specifically those related to funding and procurement services. In this space, health department and NGO partners highlighted the need for approaches that support compensation for community advisory boards and streamlined, flexible funding mechanisms for community-based organizations. Flexibility with regard to grant timelines and project proposal approaches that allow for strategic planning in the first months of the grant may also create supportive funding structures for community-based organizations.[23] Addressing these organizational competencies may help embed structural support within state and local health departments to better promote community-based participation in the implementation of HES activities.

Notably, health departments identified HES implementation needs that align with public health infrastructure and data modernization initiatives currently being advanced at the federal, state, and local levels. The HES data needs highlighted through this analysis—including improved timeliness of data, increased data linkages to identify and explore health disparities, and standardization of key data elements—may be addressed through public health data modernization efforts funded by CDC.[24–26] Similarly, health department and NGO partners raised an array of HES implementation needs related to community collaboration and workforce development, which align with CDC's infrastructure investments around strengthening the public health workforce and foundational public health capabilities.[24,26] Public health practitioners may be able to generate increased momentum for HES implementation by aligning HES needs at the state and local levels with existing priorities and infrastructure investments in public health data modernization, workforce development, and foundational capabilities.

Federal agencies and national organizations play a key role in supporting HES implementation as it relates to the development of frameworks, guidance, and tools; providing training and technical assistance; and providing funding opportunities that strengthen public health collaborations with community-based organizations. National associations may leverage existing engagement mechanisms with state and local health departments (eg, webinars, workgroups, and meetings) to support peer-to-peer learning and dissemination of promising practices and key resources. As health departments are primarily funded through federal grants,[27,28] federal agencies also have a critical role in providing flexible and sustainable funding streams that dedicate resources for qualitative data collection, encourage and allow sufficient time for impact evaluations, and support community-based organizations as subrecipients to health departments.

While the findings from this analysis are not generalizable given our small sample, they represent a structured exploration of state and local perspectives on CDC's HES framework and preliminary implementation considerations for advancing HES. Further socialization of the HES concepts and collection of feedback will be critical in refining our understanding of the challenges and opportunities for HES implementation at state and local levels.

Expanding this exploration to a larger sample may generate a more comprehensive list of HES implementation considerations and elucidate challenges/needs by organization type. These efforts may also help identify challenges that are unique to HES implementation vs those shared by other program areas, which may clarify opportunities for strategic solutions.

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References

1. Braveman P, Gottlieb L. The social determinants of health: it's time to consider the causes of the causes. Public Health Rep 2014;129 (suppl 2):19–31.
2. Gómez CA, Kleinman DV, Pronk N, et al. Addressing health equity and social determinants of health through healthy people 2030. J Public Health Manag Pract 2021;27(suppl 6):S249–S257. [PubMed: 33729197]
3. Bailey ZD, Feldman JM, Bassett MT. How structural racism works—racist policies as a root cause of U.S. racial health inequities. NEJM 2021;384(8):768–773. [PubMed: 33326717]
4. Williams DR, Lawrence JA, Davis BA. Racism and health: evidence and needed research. Annu Rev Public Health. 2019;40(1):105–125. [PubMed: 30601726]
5. Brown AF, Ma GX, Miranda J, et al. Structural interventions to reduce and eliminate health disparities. Am J Public Health. 2019;109(suppl S1):S72–S78. [PubMed: 30699019]
6. Centers for Disease Control and Prevention. CDC declares racism a public health threat. https://www.cdc.gov/minorityhealth/racism-disparities/expert-perspectives/threat/index.html Published August 28, 2023. Accessed February 28, 2024.
7. Centers for Disease Control and Prevention. CDC's CORE commitment to health equity. Published June 21, 2023. Accessed February 28, 2024. https://www.cdc.gov/healthequity/core/index.html.
8. Burton DC, Kelly A, Cardo D, et al. Principles of health equity science for public health action. Public Health Rep 2023. 0(0).
9. Liburd LC, Ehlinger E, Liao Y, Lichtveld M. Strengthening the science and practice of health equity in public health. J Public Health Manag Pract 2016;22(suppl 1):S1–S4.
10. Brownson RC, Gurney JG, Land GH. Evidence-based decision making in public health. J Public Health Manag Pract 1999;5 (5):86–97. doi:10.1097/00124784-199909000-00012. [PubMed: 10558389]
11. American Public Health Association. Supporting research and evidence-based public health practice in state and local health agencies. https://www.apha.org/policies-and-advocacy/public-health-policy-statements/policy-database/2018/01/18/supporting-research-and-evidence-based-public-health-practice. Published November 7, 2017. Accessed February 28, 2024.
12. Public Health Accreditation Board. Version 2.0 work in progress: evidence related to public health research. https://phaboard.org/wp-content/uploads/Public-Health-Research.pdf. Published December 2019. Accessed February 28, 2024.

13. Farah Saliba L, Allen P, Mazzucca SL, et al. Program adaptation by health departments. Front Public Health. 2022;10:892258. [PubMed: 36172214]
14. Power J, Gilmore B, Vallières F, Toomey E, Mannan H, McAuliffe E. Adapting health interventions for local fit when scaling-up: a realist review protocol. BMJ Open. 2019;9(1): e022084.
15. Travis A Infusing equity into organizational culture at governmental public health agencies. J Public Health Manag Pract 2023;29(suppl 1):S12–S13. [PubMed: 36448750]
16. Porter JM, Giles-Cantrell B, Schaffer K, Dutta EA, Castrucci BC. Awareness of and confidence to address equity-related concepts across the us governmental public health workforce. J Public Health Manag Pract 2023;29(suppl 1):S87–S97. [PubMed: 36223509]
17. Wallerstein N, Duran B. Community-based participatory research contributions to intervention research: the intersection of science and practice to improve health equity. Am J Public Health. 2010;100(suppl S1):S40–S46. [PubMed: 20147663]
18. Cacari-Stone L, Wallerstein N, Garcia AP, Minkler M. The promise of community-based participatory research for health equity: a conceptual model for bridging evidence with policy. Am J Public Health. 2014;104(9):1615–1623. [PubMed: 25033119]
19. Woods-Jaeger B, Daniel-Ulloa J, Kleven L, et al. Building leadership, capacity, and power to advance health equity and justice through community-engaged research in the Midwest. Am J Community Psychol 2021;67(1–2):195–204. [PubMed: 33040375]
20. Erwin PC, Grubaugh JH, Mazzucca-Ragan S, Brownson RC. The value and impacts of academic public health departments. Annu Rev Public Health. 2023;44(1):343–362. [PubMed: 36266262]
21. DeSalvo KB, Wang YC, Harris A, Auerbach J, Koo D, O'Carroll P. Public health 3.0: A call to action for public health to meet the challenges of the 21st century. Prev Chronic Dis 2017;14:E78. [PubMed: 28880837]
22. Public Health National Center for Innovations. Foundational public health services. https://phnci.org/uploads/resource-files/FPHS-Factsheet-2022.pdf. Published February 2022. Accessed February 28, 2024.
23. Perrotte BM, Noorestani A. Going beyond public health 3.0: how flexible funding streams can help to break down silos, change systems, and advance health equity in local communities. Am J Public Health. 2021;111(suppl S3):S189–S192. [PubMed: 34709874]
24. Centers for Disease Control and Prevention. Data modernization initiative. Published November 13, 2023.Accessed February 28, 2024. https://www.cdc.gov/surveillance/data-modernization/index.html.
25. Centers for Disease Control and Prevention. Accelerating data modernization in public health departments. Published October 12, 2021. Accessed February 28, 2024. https://www.cdc.gov/csels/dmi-support/accelerating_data_modernization_in_public_health_departments.html.
26. Centers for Disease Control and Prevention. Public health infrastructure grant program. Published October 3, 2023. Accessed February 28, 2024. https://www.cdc.gov/infrastructure/phig/program-overview.html.
27. Association of State and Territorial Health Officials. 2022 ASTHO Profile of State and Territorial Public Health Survey Dashboard: Finance. https://www.astho.org/topic/public-health-infrastructure/profile/#finance. Accessed February 28, 2024.
28. Cunningham M, Patel K, McCall T, et al. National profile of local health departments. Washington, DC: National Association of County and City Health Officials; 2022. https://www.naccho.org/resources/lhd-research/national-profile-of-local-health-departments Published February 2024. Accessed February 28, 2024.

Implications for Policy & Practice

- Preliminary feedback from health departments suggests that CDC's HES framework has strong alignment and applications within their public health practice. Public health practitioners may explore leveraging this framework to advance HES and strengthen the scientific evidence base to eliminate health disparities.
- Health department staff shared how their current health equity efforts align with many of the HES principles; however, more support from federal, national, state, and local partner organizations in the form of guidance, training, and technical assistance is needed to continue to advance these efforts.
- Health department and NGO partners identified the importance of including impacted communities in the full life cycle of their health equity interventions, programs, and policies as a critical component to addressing health inequities in their jurisdictions.
- Expanded health department-community-academic partnerships may advance the generation, adaptation, and evaluation of the health equity evidence base.
- Health departments can leverage existing priorities and investments in data modernization and public health workforce development to support HES implementation.
- Federal agencies and national partner organizations can further support health departments' HES implementation efforts by creating long-term funding opportunities that are flexible, sustainable, and streamlined—and focus on reinforcing partnerships between governmental public health and communities.

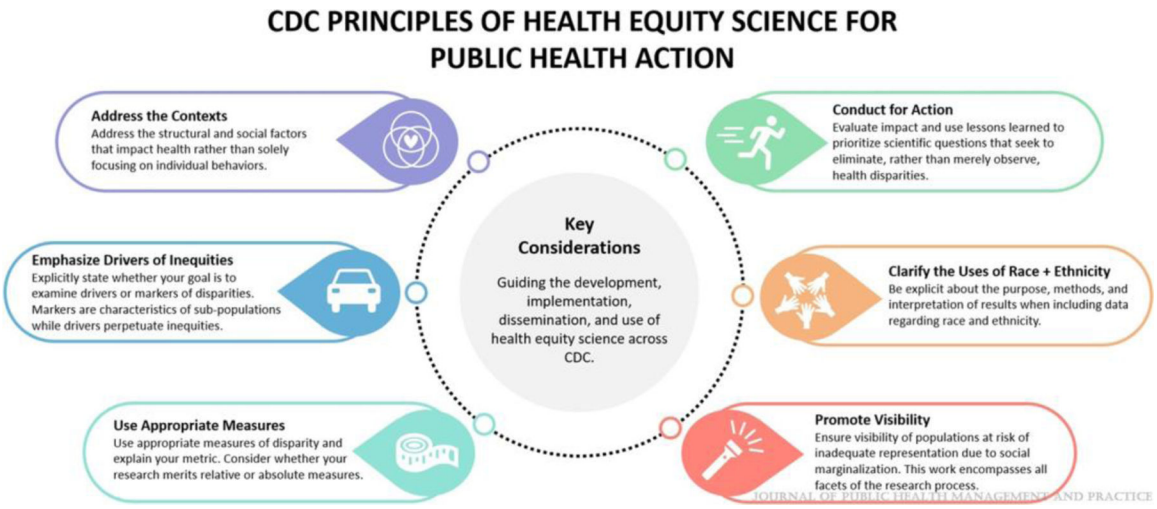

FIGURE 1.

CDC Principles of Health Equity Science for Public Health Action

Abbreviations: CDC, Centers for Disease Control and Prevention. Recreated with permission from CDC.

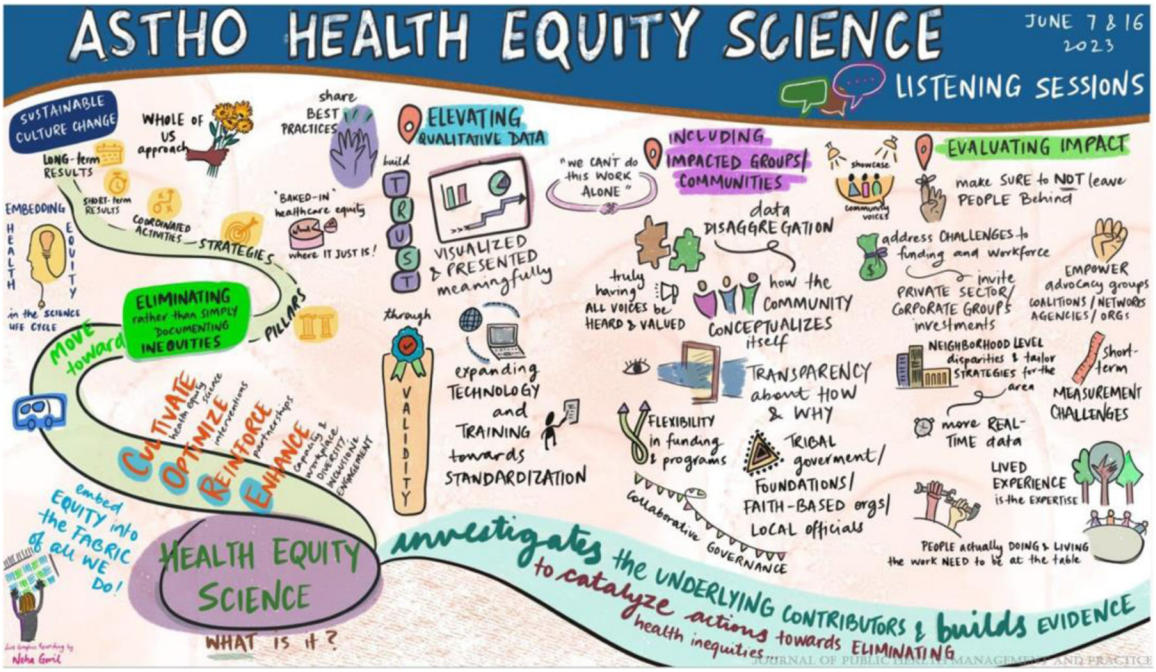

FIGURE 2.

A Visual Representation of the Multi-Jurisdictional Facilitated Discussion Topics

Abbreviations: CDC, Centers for Disease Control and Prevention; HES, health equity science; NGO, nongovernmental organizations

This visual map represents the key points captured during the multi-jurisdictional facilitated discussions with state and local health departments and NGOs on HES. During the discussions, participants were introduced to CDC's HES concepts (visible on the left side of the figure) and then were asked to share challenges, successes, and support needs around HES-related topics that emerged from earlier implementation consultations with state and local health departments (visible in the middle and right side of the figure). Those topics included the need to elevate qualitative data, include impacted groups/communities, and evaluate impact to advance HES at state and local health departments.

TABLE 1 -

Partners Providing Feedback on Health Equity Science

Organization Type	No. (%) of Staff
Implementation Consultations (n = 15)	
State health department	10 (66.7)
Local health department	5 (33.3)
Multi-jurisdictional facilitated discussions (n = 51)	
State health department	18 (35.3)
Local health department	22 (43.1)
Non-governmental organization[a]	11 (21.6)
Validation session (n = 22)	
State health department	7 (31.8)
Local health department	12 (54.5)
Non-governmental organization	3 (13.6)

[a]Non-governmental organization category includes community-based organizations and academic institutions.

TABLE 2 -

Partner Engagement Discussion Topics and Prompts on Health Equity Science

Topic	Discussion Prompts
Implementation Consultations	
Health equity science principles	How do these health equity science principles resonate with your current work? What are some examples where these health equity science principles may be applicable?
Evidence base for health equity science at state and local levels	What existing evidence sources do you use at the health department to support effective interventions, policies, and programs to advance health equity? What are your thoughts about the current pool of evidenced-based programs, interventions, etc. available to inform your jurisdiction's health equity efforts? From your perspective, how helpful is the existing evidence? What additional evidence is needed to support your health department's planning, implementation, and changes to programs and policies related to health equity?
Potential opportunities/drawbacks for state/local health departments	In what ways do you think health equity science might be helpful for your health department? In what ways might health equity science not be helpful? What opportunities do you see to advance health equity science in your health department?
Other organizations' roles in supporting health equity science	What support from federal agencies, national organizations, and peers at state/tribal/local/territorial health departments would be most useful to advance health equity science in your health department? What type of guidance, tools, or training would you find most useful? Is there any support from [organization type] that would help? • CDC • National organizations (e.g., ASTHO or others) • Peers at other state/tribal/local/territorial health departments • Other groups (e.g., academics, community organizations, etc.) How could funding opportunities be best structured to be supportive of health equity science efforts?
Additional feedback on supporting health equity science in state/local health departments	What additional advice or recommendations would you like to share that would help us support your health department's current efforts to implement health equity science?
Multi-jurisdictional Facilitated Discussions	
Elevating qualitative data to improve health equity outcomes Including marginalized groups/ communities in the design and implementation of health equity interventions, programs, and policies Evaluating the impact of health equity interventions, programs, and policies	For each topic, the following prompts were posed: • A potential challenge I have experienced/envision is… • A success or promising practice I've seen in this area, and one that we could learn from, is… • Support I need from CDC to advance these efforts is… • To further this work, the specific organizations/groups who need to be involved are…

Abbreviations: CDC, Centers for Disease Control and Prevention; ASTHO, Association of State and Territorial Health Officials.

TABLE 3 -

Themes, Illustrative Quotes, and Implementation Considerations Identified from Qualitative Feedback on Health Equity Science

Theme	Theme Description	Illustrative Quote(s)[a]	Implementation Considerations
Existing health equity evidence base	An enhanced health equity evidence-base that is scalable, replicable, and timely is needed	"People were all on board with using evidence to drive decisions and drive policy and evaluation, but what constitutes evidence I think varies widely…Ideally I would like to see where there are tools built to more readily identify [the] quality." "…There isn't a big pool of existing interventions that people can pick up and do. There needs to be more creativ[ity] in smashing some things together and saying, 'Pieces of this have been shown to work. Can we try something new and push them together?'"	• Invest in communication and dissemination science to support clear communications about health equity data for public health and non-public health audiences. • Create a comprehensive library or clearinghouse of evidenced-based interventions, programs, and policies. • Develop CDC-based frameworks, guidance, and tools on conducting health equity science to promote a more robust evidence base. • Improve data systems to capture real-time data. • Advance efforts to share provisional data to improve timeliness of available information. • Peer-to-peer sharing: Provide a platform for state, local, and tribal health departments, and other collaborators to share promising practices, challenges, and opportunities.
Integration and interdisciplinary public health practice and data needs	The intersectional nature of this field calls for an integrative approach to public health practice and data	"…we do a lot of work around intersectionality, so if we're funding a community organization that serves [a] predominately black [community] – but they have intersectionality with other groups who could be either marginalized or also be impacted by inequity… there needs to be a way to capture [that] intersectionality." " I see lots of opportunities, especially right now as we're working on things like data modernization and an informatics section. Now is the time to ground folks in this…"	• Develop standardized health equity terminology and better data standards through collaborations across federal, state, and local levels and community partners. • Offer trainings on characterizing intersectionality, providing context through data, and best practices for data collection, data disaggregation, and privacy (including trainings on research with small populations). • Leverage existing policies or new policies to ensure complete and standardized collection and reporting of health equity-related data (e.g., race, ethnicity, sexual orientation, gender identity, etc.), and to support data sharing. • Explore opportunities to assess and improve interoperability of existing data systems to improve data linkages within public health and across sectors.
The value of qualitative data for health equity science	There is a need to elevate qualitative data to strengthen and contextualize the health equity science evidence base	"When we talk about data, we also have to call out that data is —especially if we want to learn about conditions and context— only sometimes quantifiable. It's important to find ways to bring in qualitative information… Just putting data out there that… allows a person to see the comparison by race or ethnicity… can [cause] harm if we do not include a space in that same place to call out the potential underlying drivers or factors for why we might be seeing the data for these populations."	• Promote funding opportunities that call for qualitative data collection. • Invest in relationship-building to support inclusion of community voices: Encourage hiring within the community and compensate community groups partnering in data collection and evaluation efforts. • Engage trusted messengers to gather qualitative data, as they can help create a comfortable space and ask effective follow-up questions. • Provide technical assistance and training on qualitative data collection, analysis, interpretation, and visualization to state and local health departments and community partners. • Advance efforts to fund and hire qualitative researchers, with an emphasis on rigorous qualitative data collection skills.
Evaluation of health equity programs and policies	There are needs around improving the evaluation of health equity programs, interventions, and policies	"I think that having the independent evaluators can be a valuable resource for local health departments who do not have in-house evaluators, or who are working to build an evaluation team within their health departments. The enhanced model works really well for my particular team, because it gives us the flexibility to be able to do the work in the way our local communities have expected us."	• Promote community-based participatory evaluation practices: Emphasize early and ongoing community participation in evaluation protocols. • Generate funding opportunities that build in time and money for evaluation, and resources for non-traditional community-based partners. • Identify appropriate short-term indicators of impact (e.g., acute measures as a proxy for impact measures, qualitative data to evaluate short-term impact). • Train state/local health department staff and community partners on evaluation methods. • Provide technical assistance and training on impact evaluation and econometrics. • Build/expand academic partnerships with evaluation specialists to increase capacity.

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Theme	Theme Description	Illustrative Quote(s)[a]	Implementation Considerations
Inclusion of impacted communities	Including impacted groups/ communities in the full life cycle of health equity intervention, programs, and policies is key	"The people closest to inequities that they're experiencing or have been experiencing for generations, are the people who potentially closest to the solutions and understand what the drivers are, and thus understand what the potential interventions are." "We [are working on policies for] compensation for community partners who participate on… different committees, boards, and workgroups, thinking about how much we leveraged community partners throughout the [COVID-19] pandemic. And so, we want to make sure that we're being equitable with compensating them for their time."	• Provide data back to community partners, explore processes to improve data democratization, and support community ownership of data resources. • Develop long-term community engagement strategies to build trust and strengthen community partnerships. • Invite community partners to participate in health equity community advisory boards and/or task forces; compensate them for their time and expertise. • Hire and train a more diverse workforce; hire community liaisons/advocates with lived experience who are embedded in the communities. • Create flexible funding mechanisms to support community-based organizations as subcontractors and allow funds to be allocated to support cultural practices (e.g., providing food). • Streamline the procurement processes for community-based organizations: Educate community-based organizations on procurement processes and application requirements, accept proposals in multiple languages, and make technical assistance available throughout the process.

Abbreviations: CDC, Centers for Disease Control and Prevention; COVID-19, coronavirus disease 2019.

[a]Quotes edited for length and clarity