How Do We Define and Measure Health Equity? The State of Current Practice and Tools to Advance Health Equity

Deborah Hoyer, MPH; Elizabeth Dee, MPH; Meghan S. O'Leary, MPP; Megan Heffernan, MPH; Katherine Gelfand, BS; Rachel Kappel, MPH; Catharine Q. Fromknecht, BS

ABSTRACT

Introduction: Healthy People establishes national goals and specific measurable objectives to improve the health and well-being of the nation. An overarching goal of Healthy People 2030 is to "eliminate health disparities, achieve health equity, and attain health literacy to improve the health and well-being of all." To inform Healthy People 2030 health equity and health disparities content and products, the US Department of Health and Human Services (HHS) Office of Disease Prevention and Health Promotion (ODPHP), in collaboration with NORC at the University of Chicago, conducted a review of peer-reviewed and gray literature to examine how health equity is defined, conceptualized, and measured by public health professionals.

Methods: We reviewed (1) peer-reviewed literature, (2) HHS and other public health organization Web sites, and (3) state and territorial health department plans. We also conducted targeted searches of the gray literature to identify tools and recommendations for measuring health equity.

Results: While definitions of health equity identified in the scan varied, they often addressed similar concepts, including "highest level of health for all people," "opportunity for all," and "absence of disparities." Measuring health equity is challenging; however, strategies to measure and track progress toward health equity have emerged. There are a range of tools and resources that have the potential to help decision makers address health equity, such as health impact assessments, community health improvement plans, and adapting a Health in All Policies approach. Tools that visualize health equity data also support data-driven decision making.

Discussion: Using similar language when discussing health equity will help align and advance efforts to improve health and well-being for all. Healthy People objectives, measures, and targets can help public health professionals advance health equity in their work. HHS ODPHP continues to develop Healthy People tools and resources to support public health professionals as they work with cross-sector partners to achieve health equity.

KEY WORDS: health disparities, health equity, Healthy People 2030, measurement

The US Department of Health and Human Services (HHS) has engaged in efforts to eliminate health disparities for more than 40 years.[1] One of the key efforts HHS has led to eliminate health disparities and advance health equity is Healthy People, an HHS initiative that establishes data-driven national objectives to improve health and well-being.[2] Over the past several decades, health equity has been a focus of the Healthy People initiative, most recently guided by the Healthy People

Author Affiliations: *Office of Disease Prevention and Health Promotion, Office of the Assistant Secretary for Health, Office of the Secretary, US Department of Health and Human Services, Rockville, Maryland (Mss Hoyer and Dee); and NORC at the University of Chicago, Bethesda, Maryland (Mss O'Leary, Heffernan, Gelfand, Kappel, and Fromknecht).*

The authors thank the following members of ODPHP for their contributions to this article: Carter Blakey, Tiffani Kigenyi, Yen Lin, Emmeline Ochiai, and Dana Rosenberg. The authors also thank the contributions of Chandria Jones and Alexa Siegfried, from NORC.

The authors declare no conflicts of interest.

The findings of this article are those of the authors. They do not necessarily reflect the views of the Office of the Assistant Secretary for Health or the US Department of Health and Human Services.

This is an open-access article distributed under the terms of the Creative Commons Attribution-Non Commercial-No Derivatives License 4.0 (CCBY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal.

Correspondence: *Deborah Hoyer, MPH, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, 1101 Wootton Pkwy, Ste 420, Rockville, MD 20852 (Deborah.Hoyer@hhs.gov).*

Copyright © 2022 The Authors. Published by Wolters Kluwer Health, Inc.

DOI: 10.1097/PHH.0000000000001603

2030 overarching goal to "eliminate health disparities, achieve health equity, and attain health literacy to improve the health and well-being of all."[3] The evolution of Healthy People's overarching goals reflects growing awareness of health inequities over the life course and an enhanced understanding of the drivers of those inequities, including the social determinants of health.[3]

Healthy People's commitment to data reporting has helped identify health disparities and areas to advance health equity. By addressing the social determinants of health in Healthy People—as part of the Healthy People framework and through measurable objectives—Healthy People highlights how conditions in the environments where people are born, live, learn, work, play, worship, and age significantly influence health. As HHS seeks to address health equity and health disparities through important initiatives such as Healthy People, it is critical to ensure a common understanding of these concepts.

Overarching definitions of health equity began emerging in the literature in the early 2000s. One of the early definitions described health equity as "the absence of systematic disparities in health (or in the major social determinants of health) between social groups who have different levels of underlying social advantage/disadvantage."[4(p254)] A seminal report from the World Health Organization in 2006 stated that "equity in health implies that ideally everyone could attain their full health potential and that no one should be disadvantaged from achieving this potential because of their social position or other socially determined circumstance."[5(p5)] These early definitions introduced common language around these concepts. To better understand the concepts of health equity, health disparities, and drivers of disparities such as the social determinants of health, the HHS Office of Disease Prevention and Health Promotion (ODPHP), in collaboration with NORC at the University of Chicago (NORC), reviewed the published and gray literature to examine how health equity is currently defined, conceptualized, and measured by public health researchers and practitioners. The purpose of this research was to identify resources and information that will be used to inform the development and dissemination of health equity and health disparities content and products for Healthy People 2030.[6] This article presents key findings from the review and discusses the implications for achieving health equity.

Methods

Between June and August 2021, NORC conducted a review of the published and gray literature to explore how health equity is defined and discussed across the field of public health. The aim of the study was to collect qualitative data from several sources to explore the ways public health professionals define and conceptualize the concept of health equity. We reviewed (1) the peer-reviewed literature, (2) HHS and public health organization Web sites, and (3) state and territorial health department plans, such as state health improvement plans (SHIPs) and health equity plans.

Peer-reviewed literature review

For the peer-reviewed literature, we conducted a search on PubMed using the following search term: ((("health equity"[Title]) OR ("health disparities"[Title])) OR ("health inequity"[Title])) AND (definition OR framework OR indicators OR measuring). To limit the scope of the review to more recent literature, the peer-reviewed literature search only included articles published in the past 10 years, between July 2011 and July 2021. This produced 877 results. We used the literature review software Covidence to screen the studies. After reviewing abstracts for relevance, 744 studies were excluded because they did not directly or indirectly discuss health equity, health disparities, or health inequity. The remaining 133 full-text studies were reviewed, and an additional 73 studies were excluded that did not focus on definitions, frameworks, indicators, and measurements. Studies that were (1) intervention-focused, (2) identified and documented specific health disparities, (3) focused on a clinical setting, and (4) related to workforce training were excluded. A total of 60 studies were included in the scan. These studies covered health equity theory, tools to address health equity, health equity definitions, measuring health equity, health equity frameworks, and policies to achieve health equity.

Gray literature review

All data gathered through the gray literature review were publicly available information. First, ODPHP and NORC selected 20 HHS agencies and 14 nonfederal public health organizations to include in a Web site review. The list of nonfederal public health organizations included organizations that collaborate with ODPHP on Healthy People activities. For each of these HHS agencies and public health organizations, we conducted key word searches using the Web sites' search functionality and reviewed the primary pages within the Web site. Key words included "health equity," "health inequity," "health disparities," and "social determinants of health."

For the review of SHIPs and other health department plans, we searched health department Web sites for all 50 states, the District of Columbia, and US territories. We were able to identify a SHIP for all

50 states and the District of Columbia; however, we were unable to identify SHIPs for US territories. We scanned all available SHIPs or other reports using search criteria to understand health department goals, metrics, definitions, and frameworks related to health equity and health disparities.

The purpose of the review was to inform the development and dissemination of health equity and health disparities content and new products for Healthy People 2030. The narrow focus of this scan did not identify all relevant health equity definitions, measures, or tools. To supplement the information gathered through the peer-reviewed literature on these topics, we conducted additional targeted Google searches using the key terms "health equity" and "tools OR measurement" to further explore available tools and recommendations for measuring health equity.

Analysis

For each of the 3 components of the review (peer-reviewed literature, Web site review, and state health department plans), we extracted relevant information from the identified resources into an Excel database. This database included definitions of health equity, health disparities, and the social determinants of health. In addition, we compiled information on health equity frameworks, measurement, and tools. For each of these domains, we analyzed the qualitative data included in the database and identified common themes.

Results

Defining health equity

The review identified several definitions of health equity used widely across the field of public health. While there are differences in these definitions, similar concepts are addressed. Table 1 presents example language from some of the widely used definitions, organized around the common concepts that emerged in the analysis. Many of the definitions addressed the aim of achieving the highest level of health for all people, providing the opportunity to do so, and ensuring the absence of disparities.

The definition of health equity developed during the establishment of Healthy People 2020 was one of the most widely cited definitions identified in this review.[7-11] Healthy People defines health equity as "the attainment of the highest level of health for all people."[12] Healthy People underscores that achieving health equity requires valuing everyone equally with focused and ongoing societal efforts to address avoidable inequalities, historical and contemporary injustices, and the elimination of health and health care disparities. Another commonly cited definition in the peer-reviewed literature[13-19] states that "pursuing health equity means striving for the highest possible standard of health for all people and giving special attention to the needs of those at greatest risk of poor health, based on social conditions."[20(p6)] These 2 commonly cited definitions place emphasis on the "highest level of health for all people."

Other definitions highlight "opportunity" as an important concept associated with health equity. For example, one definition said health equity "means that everyone has a fair and just opportunity to be as healthy as possible. This requires removing obstacles to health such as poverty and discrimination and their consequences, including powerlessness and lack of access to good jobs with fair pay, quality education and housing, safe environments, and health care."[21(p6)] Another described health equity as "when everyone has the opportunity to be as healthy as possible."[22]

Finally, some definitions of health equity focus on the "absence of disparities." For example, health equity is often described[14,23-25] as the "absence of unfair

TABLE 1
Common Concepts Across Health Equity Definitions

Concepts	Example Verbatim Text From Definition
Highest level of health for all people	"Attainment of the highest level of health for all people" "Highest possible standard of health for all people" "Highest level of health" "His or her full health potential" "As healthy as possible" "Optimal health"
Opportunity	"When every person has the opportunity to attain . . . " "Everyone has a fair and just opportunity . . . " "When everyone has the opportunity to be . . . " "The equal opportunity for All Americans . . . "
Absence of disparities	"Absence of unfair and avoidable or remediable difference in health . . . " "Absence of disparities or avoidable differences . . . "

and avoidable or remediable differences in health among population groups defined socially, economically, demographically or geographically."[26]

Measuring health equity

Our review identified limited resources documenting best practices and strategies for measuring health equity. While this emerged as a gap in current practices, a few sources described considerations and challenges associated with measuring health equity.[9,11,19,27-29] Documenting health disparities and differences in health outcomes between populations is a common approach used by public health professionals; however, measuring health equity is more complex and poses measurement challenges.[11,19]

Public health professionals have described important considerations when measuring health disparities and health inequities. For example, Penman-Aguilar et al[11] note that researchers need to be explicit and describe the implications of analytic decisions, such as use of a reference point, absolute versus relative scale, accounting for group size, pairwise versus summary approach, and differential weighting. Thrasher et al[27] recommend assessing intersectionality when looking at health disparities. They emphasize the importance of looking at specific time periods of interest, for example, examining disparities in health outcomes between different racial and ethnic groups at different ages (eg, looking at disparities in younger groups as well as in older adults). Penman-Aguilar et al also indicate the importance of addressing intersectionality by recommending that analytic approaches "address within-group heterogeneity by comparing groups simultaneously classified by multiple social statuses."[11(pS39)] In addition, Braveman et al[28] recommend comparing the population (social group) of interest for a health indicator with the social group that is in the most advantaged social position, instead of comparing average measures or the group with the best level of health. In the United States, the group in the most advantaged social position is high-income, highly educated White men. Gómez et al echo these recommendations, noting that national data are traditionally presented by comparing the relative difference between the best and worst rates in a given health outcome, but it is important to "look at relative differences of groups compared with those in the highest social position at national and local levels."[9(pS254)] In their issue brief focused on health equity,[29] the Secretary's Advisory Committee on National Health Promotion and Disease Prevention Objectives for 2030 notes that many commonly used data sources have insufficient data for certain disadvantaged groups, such as American Indians, and complete absence of data on some groups, such as LGBTQ+ minority groups, and emerging gender spectrum identities such as nonbinary genders. These inadequate data, according to the authors, can "often result in erroneous assumptions about underlying reasons for the disparities"[29(p11)] and can therefore make it difficult to identify the best policy and programmatic levers to address the disparities.

Zimmerman identified limitations of using health disparities as a proxy for measuring health equity, emphasizing that a "health equity metric should encompass the full array of social exclusion in a population" whereas health disparities solely focus on "differences in health outcomes across specific groups defined by the researcher."[19(p75)] Zimmerman describes how to calculate a robust health equity measure (HEM), specifically comparing "the experience of individuals within societal categories to the median experience of this privileged category."[19(p70)] This HEM can range from negative infinity (maximum inequality) to 1 (perfect equity).[19] When using this methodology, Zimmerman found that health equity was not closely correlated with a common measure of health disparities, specifically the difference in average healthy days between White and Black populations, furthering the argument that health equity is a concept distinct from measuring health disparities. However, one limitation of this methodology is that the scale may not be easily understandable to critical audiences, such as policy makers and the public.

Finally, researchers and public health professionals have discussed the importance of capturing disparities in determinants of health, in addition to health outcomes, to fully capture health equity.[11] Penman-Aguilar et al[11] note that this will provide the most complete picture of the social and structural factors that influence gaps in health outcomes and provide indications of where policies and programs may best be aligned to promote health equity. They go on to recommend assessing "social and structural determinants of health and consider multiple levels of measurement."[11(pS33)] This includes measuring determinants at the individual, neighborhood, and community levels, as well as at societal levels, using state and national data sources. They note that monitoring determinants of health should be "informed by prior research into the pathways through which social determinants affect health."[11(pS36)] This could involve relying on nonhealth data sources to identify and track determinants of health at multiple levels and over time.[11] Similarly, the Robert Wood Johnson Foundation (RWJF) recommends a combination of metrics related to structural drivers, community determinants, and health care that could reflect progress toward achieving health equity.[21] To measure structural

drivers, RJWF recommended metrics include the distribution of resources, power, money, and opportunity and empowered/disempowered people. To measure community determinants, RWJF recommends including a focus on the social-cultural environment, the physical/built environment, and the economic environment. Finally, RWJF recommends that health care metrics pay strong attention to access.[21]

Tools to advance health equity

With a clear understanding of what health equity is and how to measure it, public health professionals and policy makers can work toward achieving health equity. There are a variety of tools that can help those in positions of leadership collect data and community knowledge to inform policy and programmatic decision making, with the ultimate goal of achieving health equity. Three examples identified in the peer-reviewed literature included health impact assessments (HIAs), community health improvement plans (CHIPs), and Health in All Policies (HiAP).

Health impact assessments

Frequently referenced in the peer-reviewed literature, HIAs are a key tool for decision makers. HIAs aim to protect and promote health and to reduce inequities in health during a decision-making process by encouraging decision makers to consider the needs of underserved populations in policy and program development and implementation.[30] However, some articles noted that HIAs do not adequately address equity due to inadequate guidance for doing so, absence of clear definitions, poor data and evidence, perceived lack of methods and tools, and practitioner unwillingness or inability to address values such as fairness and social justice.[31] HIAs can be tailored to directly examine equity. These are frequently called health equity impact assessments and can more directly capture and address the more downstream causes of inequity.

Community health improvement plans

Another tool with the potential to contribute to advancing health equity is the CHIP (also referred to as a SHIP when developed at the state level). Typically led by public health departments and updated every 3 to 5 years, CHIPs are "long-term, systematic efforts to address public health problems based on the results of community health assessment activities and the community health improvement process."[32] Importantly, these efforts are informed by multisector collaboration and engagement with a broad and diverse set of community members. Similar to Healthy People, CHIPs often include measurable objectives for a community to strive toward. However, there are opportunities to improve how CHIPs address health equity. One recent study assessed more than 4000 objectives from 280 local public health agency CHIPs and determined that only 2.7% of objectives focused on race or ethnicity and just 2 objectives mentioned the LGBTQ community.[33] While CHIPs have the potential to promote health equity, they need to be specifically written and tailored to incorporate measures of disparity and equity.

Health in All Policies

The social determinants of health directly impact health equity and a person's ability to live a healthy life. Therefore, programs and policies that address these determinants at various levels are required to make progress toward equity. HiAP is a tool through which policy makers can work to improve opportunities for individuals in their communities. HiAP is a collaborative approach between multiple sectors that incorporates health into policy and programmatic decision making.[34] For example, HiAP encourages government officials and organizational leaders to consider the health impacts and benefits of plans to address employment, education, or housing. Incorporating a focus on health in multisectoral policies and programs can help impact the social determinants of health progress toward health equity.

Other tools

The gray literature search identified other tools that may help decision makers who are seeking to measure and assess health equity and the social determinants of health. These tools are predominantly focused on comparing disparities between population groups as well as visualizing these disparities. Examples of these tools can be found in Table 2.

Discussion

Understanding common concepts and language used to define health equity can help advance efforts and collaborative action to improve health and well-being for all. As described by Braveman,[20] one risk of ambiguity in definitions of health equity and health disparities is misdirection of limited resources away from the populations and groups that are disadvantaged. Currently, common concepts across health equity definitions include "highest level of health for all people," "opportunity," and "absence of disparities." While Healthy People has its own definitions of health equity and health disparities,[12] ODPHP understands the importance of having an awareness of what definitions are being used across the field of

TABLE 2
Examples of Tools to Measure Health Disparities

Tool	Description
Social Vulnerability Index (SVI)[35]	Developed by CDC, the SVI maps 15 census-level variables to help local officials identify communities that may need support before, during, or after disasters. The most recent iteration of the tool focuses on minority racial, ethnic, and language groups as well as medical vulnerability. The SVI "can be used to apply a health equity lens to research, strategic planning, program design, and evaluation related to response and recovery" for a variety of public health emergencies.
Social Determinants of Health in Rural Communities Toolkit[36]	NORC at the University of Chicago and the Rural Health Information Hub (RHIhub) compiled a tool kit focused on social determinants of health in rural communities, which includes guidance and resources to help communities assess and measure social determinants of health.
National Equity Atlas[37]	A data and policy tool produced by PolicyLink and the USC Equity Research Institute (ERI), which includes a detailed report card on racial and economic equity. The National Equity Atlas includes indicators within 5 domains (demographics, economic vitality, readiness, connectedness, and economic benefits).
Neighborhood Atlas[38]	An interactive mapping tool developed by the University of Wisconsin School of Medicine and Public Health that visualizes the Area Deprivation Index (ADI), which is a measure that was originally developed by the Health Resources & Services Administration (HRSA). The ADI includes data on income, education, employment, and housing quality.
The Opportunity Atlas[39]	An interactive mapping tool that visualizes children's outcomes in adulthood, analyzed at the census tract level using longitudinal data. The tool estimates children's expected earnings distributions, incarceration rates, and other outcomes in adulthood by parental income, race, and gender. The atlas emphasizes that neighborhood characteristics greatly impact the opportunities available to children.

public health. In addition, these concepts of health equity definitions impact the conceptualization and measurement of health equity.

Equally important to establishing common definitions of health equity is determining the most effective methodology for measuring health equity. Literature explicitly describing methods for measuring health equity was limited and directly measuring health equity can be challenging. Documenting disparities and differences between groups is a common proxy for measuring health equity, but this approach has limitations. In addition, there is an ongoing need to capture data on disparities and social determinants of health and specifically collecting data about different dimensions of identity, including gender, race and ethnicity, and sexual orientation. Healthy People has several objectives that promote inclusion of identity questions in national surveys. For example, one Healthy People 2030 objective focuses on increasing the number of states and territories that include sexual orientation and gender identity questions in the Behavioral Risk Factor Surveillance System (BRFSS) and another sets a goal to increase the number of national surveys that collect data on transgender populations. Healthy People continues to promote data collection efforts to identify disparities and measure and address health equity.

The data-driven Healthy People initiative recognizes that efforts to impact the determinants of health, reduce health disparities, and work toward health equity cannot fully be understood without the use of metrics. Measurement can also offer indication of what interventions best address disparities, their determinants, and ultimately impact progress toward equity. Measurement can promote data-driven implementation of policies and programs that can make a difference in the health and well-being of vulnerable populations. The field of public health must continue to examine and identify the most effective approaches to measuring health equity, in addition to the tools and resources that will help both national and local

Implications for Policy & Practice

- Understanding commonly used definitions of health equity allows public health professionals and policy makers to use shared language to work toward the important goal of achieving health equity.
- Public health professionals should continue to research and advance health equity measurement approaches, as this is critical to ensuring progress is being made toward achieving health equity.
- A variety of tools are available to support public health professionals and policy makers in advancing their work toward achieving health equity. Throughout the decade, Healthy People 2030 will report health disparities data and strive for advancing health equity.

agencies and communities identify and address health inequities.

This review identified some useful tools to help advance health equity. Public health practitioners, such as state and local health departments, should continue to advance efforts related to health equity, particularly in their community health assessment and planning efforts. Throughout the decade, ODPHP and the National Center for Health Statistics will develop additional tools and resources to help support efforts to advance health equity, with a particular focus on highlighting disparities within the Healthy People data. Healthy People 2030 sets a clear goal for the nation of achieving health equity. Clear and robust definitions, measures, and tools will allow public health professionals and policy makers to make progress toward this important goal.

References

1. HHS Office of Minority Health. 30 years of advancing health equity. Think Cultural Health. https://thinkculturalhealth.hhs.gov/clas/health-equity-timeline. Accessed June 8, 2022.
2. HHS Office of Disease Prevention and Promotion. Healthy People 2030. https://health.gov/healthypeople. Accessed June 8, 2022.
3. HHS Office of Disease Prevention and Promotion. Healthy People 2030 framework. Healthy People 2030. https://health.gov/healthypeople/about/healthy-people-2030-framework. Accessed June 8, 2022.
4. Braveman P, Gruskin S. Defining equity in health. *J Epidemiol Community Health.* 2003;57(4):254-258.
5. Whitehead M, Dahlgren G. *Concepts and Principles for Tackling Social Inequities in Health: Levelling up Part 1. Studies on Social and Economic Determinants of Population Health, No. 2*. Copenhagen, Denmark: WHO Regional Office for Europe; 2006.
6. US Department of Health and Human Services. *Health Equity and Health Disparities Environmental Scan*. Rockville, MD: US Department of Health and Human Services, Office of the Assistant Secretary for Health, Office of Disease Prevention and Health Promotion; 2022. https://health.gov/sites/default/files/2022-04/HP2030-HealthEquityEnvironmentalScan.pdf. Accessed June 8, 2022.
7. Braveman PA, Kumanyika S, Fielding J, et al. Health disparities and health equity: the issue is justice. *Am J Public Health.* 2011; 101(suppl 1):S149-S155.
8. Butler J III, Fryer CS, Garza MA, Quinn SC, Thomas SB. Commentary: critical race theory training to eliminate racial and ethnic health disparities: the Public Health Critical Race Praxis Institute. *Ethn Dis*. 2018;28(suppl 1):279-284.
9. 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.
10. Liburd LC, Hall JE, Mpofu JJ, Williams SM, Bouye K, Penman-Aguilar A. Addressing health equity in public health practice: frameworks, promising strategies, and measurement considerations. *Annu Rev Public Health*. 2020;41:417-432.
11. Penman-Aguilar A, Talih M, Huang D, Moonesinghe R, Bouve K, Beckles G. Measurement of health disparities, health inequities, and social determinants of health to support the advancement of health equity. *J Public Health Manag Pract.* 2016;22(suppl 1):S33-S42.
12. Health equity in Healthy People 2030. https://health.gov/healthypeople/priority-areas/health-equity-healthy-people-2030. Accessed June 8, 2022.
13. Castillo EG, Harris C. Directing research toward health equity: a Health Equity Research Impact Assessment. *J Gen Intern Med*. 2021;36(9):2803-2808.
14. Hall M, Graffunder C, Metzler M. Policy approaches to advancing health equity. *J Public Health Manag Pract*. 2016;22(suppl 1):S50-S59.
15. Moonesinghe R, Bouye K, Penman-Aguilar A. Difference in health inequity between two population groups due to a social determinant of health. *Int J Environ Res Public Health*. 2014;11(12):13074-13083.
16. Narain KDC, Zimmerman FJ, Richards J, et al. Making strides toward health equity: the experiences of public health departments. *J Public Health Manag Pract*. 2019;25(4):342-347.
17. Santana P, Freitas Â, Stefanik I, et al. Advancing tools to promote health equity across European Union regions: the EURO-HEALTHY project. *Health Res Policy Sys*. 2020;18(1):18.
18. Solomon R, Orridge C. Defining health equity. *Healthc Pap*. 2014; 14(2):62-65.
19. Zimmerman FJ. A robust health equity metric. *Public Health*. 2019; 175:68-78.
20. Braveman P. What are health disparities and health equity? We need to be clear. *Public Health Rep*. 2014;129(suppl 2):5-8.
21. Braveman P, Arkin E, Orleans T, Proctor D, Plough A. *What Is Health Equity? And What Difference Does a Definition Make?* Princeton, NJ: Robert Wood Johnson Foundation; 2017.
22. CDC Office of Minority Health and Health Equity. Paving the road to health equity. https://www.cdc.gov/minorityhealth/publications/health_equity/index.html. Accessed June 8, 2022.
23. Brooks D, Douglas M, Aggarwal N, Prabhakaran S, Holden K, Mack D. Developing a framework for integrating health equity into the learning health system. *Learn Health Syst*. 2017;1(3):e10029.
24. Cohen BE, Schultz A, McGibbon E, et al. A conceptual framework of Organizational Capacity for Public Health Equity Action (OC-PHEA). *Can J Public Health*. 2013;104(3):e262-e266.
25. Kovach KA, Lipnicky A. An analysis of how characteristics of local health department jurisdictions influence involvement in PHAB accreditation: implications for health equity. *J Public Health Manag Pract*. 2021;27(5):449-458.
26. World Health Organization. Social determinants of health. https://www.who.int/health-topics/social-determinants-of-health. Accessed June 8, 2022.
27. Thrasher AD, Clay OJ, Ford CL, Stewart AL. Theory-guided selection of discrimination measures for racial/ethnic health disparities research among older adults. *J Aging Health*. 2012;24(6): 1018-1043.
28. Braveman PA, Egerter SA, Cubbin C, Marchi KS. An approach to studying social disparities in health and health care. *Am J Public Health*. 2004;94(12):2139-2148.
29. Secretary's Advisory Committee for Healthy People 2030. Issue briefs to inform development and implementation of Healthy People 2030. https://www.healthypeople.gov/sites/default/files/HP2030_Committee-Combined-Issue%20Briefs_2019-508c.pdf. Published November 2018. Accessed June 8, 2022.
30. Sohn EK, Stein LJ, Wolpoff A, et al. Avenues of influence: the relationship between health impact assessment and determinants of health and health equity. *J Urban Health*. 2018;95(5): 754-764.
31. Povall SL, Haigh FA, Abrahams D, Scott-Samuel A. Health equity impact assessment. *Health Promot Int*. 2014;29(4):621-633.
32. Centers for Disease Control and Prevention. What is a community health assessment? https://www.cdc.gov/publichealthgateway/cha/plan.html. Updated July 24, 2018. Accessed June 8, 2022.
33. Inderstrodt J, Perrault EK, Hintz EA, Hildenbrand GM. Addressing health disparities in America: analysis of community health improvement plans. *Nurs Res*. 2019;68(5):405-412.
34. Rudolph L, Caplan J, Ben-Moshe K, Dillon L. *Health in All Policies: A Guide for State and Local Governments*. Washington, DC and Oakland, CA: American Public Health Association and Public Health Institute; 2013. https://www.apha.org/-/media/Files/PDF/factsheets/Health_inAll_Policies_Guide_169pages.ashx. Accessed June 8, 2022.
35. Agency for Toxic Substances and Disease Registry. CDC/ATSDR Social Vulnerability Index. https://www.atsdr.cdc.gov/placeandhealth/svi/index.html. Updated March 15, 2022. Accessed June 8, 2022.

36. Rural Health Information Hub. Social determinants of health in rural communities toolkit. https://www.ruralhealthinfo.org/toolkits/sdoh. Accessed June 8, 2022.
37. National Equity Atlas. https://nationalequityatlas.org. Accessed June 8, 2022.
38. University of Wisconsin School of Medicine and Public Health. Area deprivation index. https://www.neighborhoodatlas.medicine.wisc.edu. Accessed June 8, 2022.
39. The Opportunity Atlas. https://www.opportunityatlas.org. Accessed June 8, 2022.